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Acknowledgement

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Introduction

"Is tense real? Like many philosophical issues, much of the problem is getting the question in a definite enough form to be able to say something intelligent about it." (Priest 1986, p. 162)

Is Tense real? In order to answer this question, we first need to know what is meant by "Tense" and "real". In chapter 1, I stress that in the ontological debate concerning Tense, we are not dealing with the grammatical tenses, but with Tenses as ontological features. I claim that Tenses are those properties which are signified by predicates like "is future", "is past" and "is present". I call these properties "A-determinations", following McTaggart's famous distinction between the A- and the B-series. They are real in case they are satisfied, i.e. if there is something in reality which possesses them. In chapter 2, I deal with the question which entities (events, times, material objects or propositions) may be the bearers of A-determinations.

In chapter 3, I introduce the two opponents in the ontological debate concerning Tense. Theorists who believe in the reality of Tense, are called A-theorists. They believe that we inhabit a dynamic world, where things continually come into existence. Most A-theorists believe that while the present and past are real, the future is not. B-theorists on the other hand claim that we inhabit a static world: Nothing is really past, present or future. Instead events only stand in B-relation (earlier than, later than, simultaneous with) to each other. McTaggart famously argued that ascriptions of A-determinations involve a contradiction. New B-theorists claim that A-facts are superfluous, because they can be reduced to B-facts. A-theorists naturally deny this. But at a closer look, this ontological debate is not satisfactory and seems to have reached a dead end. Most of the arguments which are put forward employ reductive claims, which are seldom conclusive. Often they seem to work both ways and are equally employed by both opponents. It seems that what is really at stake in the

debate about Tense rather depends on differing assumptions concerning the semantics and conceptions of truth for temporally indexical sentences. Hence it is time to ponder whether there can be other more promising ways in which this debate can be conducted.

What is the best way to conduct a realism-debate? There are different proposals for how to conduct realism-debates quite generally. In the remaining chapters, I will discuss two such proposals, and I will also try to apply them to the debate about Tense. It has to be acknowledged that this debate is of a special kind. Here, it is not the existence of certain objects which is under consideration. Rather it is the existence (or satisfaction) of certain properties (A-determinations), namely the properties of being past, present or future. Also we have to note that sentences about the past, present and future usually are at the same time about other kinds of entities. Therefore the debate about Tense may cut across other kinds of subject-matters.

In chapter 4, I discuss Michael Dummett's proposal for conducting realism-debates. He proposes to conduct them in terms of semantics: Semantic realists and antirealists differ with respect to the appropriate theory of meaning for the sentences of the disputed kind. While the realist believes that the meaning of a sentence consists in its truth-conditions, the antirealist claims that it consists in its verification-conditions. Consequently the semantic antirealist believes that truth is epistemically constrained. But when applied to the debate about Tense, Dummett's approach does not seem to be able to capture all of what is really at stake. I argue that A- and B-theorists do not seem to differ with respect to which theory of meaning they favour. Both A- and B-theorists may claim that truth is not epistemically constrained, and hence they may both be semantic realists.

In chapter 5, I turn to Crispin Wright's reaction to Dummett's proposal. He argues that Dummett's strategy fails to cover all of the different kinds of realism-debates. Instead Wright claims that the general dispute between realists and antirealists is mainly concerned with the appropriate interpretation of the truth-predicate for the sentences of the disputed kind (rather than with the appropriate notion of meaning). He proposes a minimal notion of truth which is to serve as neutral ground between realists and realists. Then he lists several constraints which, when satisfied, turn minimal truth into realist truth (for example the Wide Cosmological Role constraint). When applied to the debate about Tense, Wright's approach

seems to be quite promising. I argue that it can serve well for marking the difference between realists and antirealists concerning Tense, and that it does seem to capture what is really at stake in their dispute. While realists (A-theorists) believe that A-states of affairs have a wide cosmological role, antirealists (B-theorists) claim that they have only a narrow cosmological role. I conclude that Wright's framework can serve to conduct the dispute concerning Tense in more promising terms than the methods presently used in the ontological debate.

1. What is Tense?

The debate concerning the reality of Tense deals with the question whether the past, the present and the future are real. Here it is crucial to distinguish grammatical tense from ontological Tense. Whereas grammatical tense is a feature of languages, philosophical Tense is an ontological category. The debate under consideration is mainly concerned with ontological Tense. But often enough problems arise because the two kinds are confused. In order to avoid terminological confusion, I call the ontological Tenses "A-determinations". In this I follow McTaggart's distinction between two kinds of temporal ordering, namely the A-series and the B-series. The A-series is a temporal ordering in terms of things being past, present and future, while the B-series is a temporal ordering with respect to things being earlier or later than another. Language provides different means of talking about these two temporal orderings. While A-sentences ascribe A-determinations to something, B-sentences only ascribe B-relations and no A-determinations to something. What are A-determinations? I will argue that A-determinations are variable properties of things.

1.1 Grammatical Tense

Prima facie tense is a grammatical feature of natural languages. Linguists call certain grammatical devices (verbal) "tenses". There are the past, the present and the future tenses. They enable the speaker to talk about something in the past, present or future. There are also complex tenses, like the past perfect and the future perfect. Of course there is not just *one* way in which these tenses are realised across different languages. It is furthermore crucial to note that even relative to a single language, tense can be realised in various ways. First of all, there are verb-inflections to mark the tenses. In English, the past tense for most verbs is realised by the ending "-ed". The future tense, on the other hand, needs auxilliary devices in most languages. In English it is "will" plus infinitive. In German "werden" plus infinitive. This leads some linguists to suggest that there is no "real" grammatical

future tense, but that it is rather a construction out of other linguistic features.[1] Besides verbal tenses, there are other grammatical devices which concern tense. Expressions like "now" and "yesterday" are examples of so-called temporal indexicals. They refer to times (dates), but their reference depends on the context of use. Usually they are used in combination with verbal tenses. Also there are predicates like "is present" or "is past" which designate tensed properties. This shows that neither is there just one grammatical device which can be called "tense", nor does it play a single role.

Are all sentences in natural languages inevitably tensed?[2] All finite verbs in complete sentences seem to acquire some kind of verbal tense, even if other modifiers (indexicals like "now" or predicates like "is future") are missing. But some theorists argue that there are genuine grammatically tenseless sentences. Often they use mathematical sentences as counter-examples to the claim that all sentences are tensed.[3] It may be doubted whether mathematical sentences are sentences of "natural" languages (as opposed to formal ones), but let us for the moment put this question aside.[4] Consider a sentence like:

S: Two plus two equals four.

Is (S) tensed? Prima facie, it looks like a present-tensed sentence, since the verbal tense of the finite verb "to equal" is present-tensed. Friends of tenseless languages argue that we should not be deceived by surface-grammar. What looks like present-tense really should be understood as tenselessness.[5] Because, one may argue, (S) is not *used* to say that two plus two equals four *in the present*.

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[1] See for example Ludlow (1999) pp. 159 f.

[2] For a discussion of this point, see for example Teichmann (1998), and Tichy (1980).

[3] Other examples concern the "reporter's present", the narrative present, and generalisations.

[4] Of course, something like "2 + 2 = 4" is not a sentence of a natural language. That it is indeed tenseless cannot have any consequences for natural languages. But the question remains whether it can nevertheless serve as a model of how tenseless sentences are to be conceived.

[5] Sometimes an extension of natural language (an additional grammatical device) is suggested which is to mark tenselessness, for example "two plus two [equal] four" or "two plus two tenselessly equals four".

There seem to be three possible replies to this contention: (1) One can agree that two plus two does not presently equal four, and argue that it equals four timelessly, i.e. two plus two equals four altogether outside of time (not now, not in the past or in the future). (2) One can agree that two plus two does not presently equal four, and argue that it is false that it *only* presently equals four. Rather it *always* (in the present as well as in the past and the future) equals four. Such a sentence is usually called eternal or omnitemporal.[6] (3) One can disagree, and argue that two plus two *does* presently equal four. But it also has always equalled and will always equal four in the past and future. Thus the sentence captures only one aspect of the eternal relation. (2) and (3) bear certain similarities of course. Both agree that two plus two omnitemporally equals four. But they disagree over the interpretation of the original sentence. According to (2), (S) is false because misleading, whereas according to (3) it is true but does not give the whole picture. It can be suggested that the disagreement arises over different ideas not about what is actually expressed by such a sentence, but about what is implicated (to use a Gricean term[7]). According to (2), the sentence implicates that two and two *only* presently equals four (which is false), whereas according to (3), the sentence implicates that two plus twopresently and *always* equals four (which is true).

But it should be clear that implicature is not a feature of grammar (certainly not of surface-grammar), but of pragmatics. And pragmatics cannot of course tell us whether a sentence like (S) is grammatically tensed or tenseless. All of the the above responses to (S) seem to contain a confusion between grammatical tense and ontological Tense. What is said, expressed or implicated by the use of a sentence, is not simply a matter of grammar. We may for example consistently say that (S) is grammatically tensed, but ontologically tenseless.

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[6] Often positions (1) and (2) are not distinguished. But this confuses important ontological differences, see also 2.5.1 below.

[7] See Grice (1989) part 1 no.2 on conversational implicature; and Smith (1990a) p. 284 who mentions this point.

1.2 Ontological Tense

The debate concerning the past, present and future is mostly concerned with ontological Tense. But often theorists do not properly distinguish between grammatical tense and ontological Tense. Part of this confusion is due to terminological difficulties. To avoid them as far as possible, I will concentrate on the *ontological* Tenses which I will call "A-determinations".[8] But what are they?

Employing McTaggart's famous distinction between the A- and B-series[9], Mellor—the most prominent B-theorist in the current debate about Tense—says that *Tenses are positions in the A-series*.[10] He calls them "A-times". A-sentences ascribe A-times to something or imply that something has such positions.[11] What are the A- and the B-series? According to McTaggart, they reflect different ways of talking about time, or two ways in which things can be temporally ordered. For McTaggart, the things in question are events or times, but in the literature which employs his distinction, they can be other things as well.[12] For the moment, I will follow the standard line and talk about events having A- and B-series positions. Consequently events are ordered in two different ways. The first, reflected in the A-series, is an ordering in terms of events as being present, past and future. It seems that events change their A-series positions continuously. An event which used to be future, eventually becomes present and then past (and possibly still "more past", if A-times come in degrees). In this, A-series positions differ significantly from B-series positions. The B-series positions of events are unchanging and absolute. Events in the B-series are ordered in terms of being earlier or later than or simultaneous with each other. An event e1 which is earlier than an event e2, is so always and from

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[8] Mellor only recently seems to have despaired of reminding his commentators of this distinction (Mellor 1998a, p. xi). He now calls philosophical Tenses "A-times" and the according tensed sentences "A-sentences", while using "tensed" for grammatical purposes only. I will stick to "A-determinations" (instead of the confusing "A-times").

[9] See McTaggart (1927).

[10] Mellor (1998a) pp. 8 ff.

[11] Mellor (1986) p. 167.

[12] McTaggart says that the positions in the series are times and that their contents are events, McTaggart (1927) p. 24. For further discussion, see 2.1 and 2.4 below.

any perspective. Events in the B-series are dated, they have unchanging dates of when they take place.

The past, the present and the future are A-determinations which are possessed by things. A-sentences ascribe A-determinations to things. But not all A-sentences have the same grammatical structure. In particular not all of them are of the form "x is past" or "x is present" (see 1.1 above). But it can be argued that *logically* they can be so represented.[13] All A-sentences are grammatically tensed, but not all grammatically tensed sentences ascribe A-determinations and hence are A-sentences. B-sentences on the other hand do not ascribe A-determinations to anything. B-sentences can be grammatically tensed or tenseless.[14]

Here are examples of prima-facie A-sentences:

1) Match A began very early.

2) I will go to France in August next year.

3) Fred's laughing is present.

Here are some examples of prima-facie B-sentences:

4) Two plus two equals four.

5) The first world-war is before the second.

6) The meeting is at 6 pm on August 26 1999.

Sentences (1)–(3) ascribe the A-determinations of being past, future or present to the following events: the beginning of a match, my going to France, and Fred's laughing. In (1) the past-tense verb-form expresses the A-determination of being past. In (2), the future-tense verb-form is accompanied by the indexical "in August next year". The indexical is used

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[13] Prior, the most famous A-theorist, on the other hand argues that A-sentences should be interpreted in an different style, see 1.4 below.

[14] Note that there are other ways of specifying A- and B-sentences. For example, Künne claims that it is a constitutive feature of non-tautological A-sentences that their truth-values vary over time (see 2.5.1 below). I will not adopt this line in order to be able to incorporate views such as Tooley's (see 2.5.1 and 3.5 below).

adverbially.[15] In (3), the predicate ascribes the A-determination of being present to the event of Fred's laughing. The B-sentences (4)–(6) do not (explicitly or implicitly) ascribe any A-determinations to events, but only B-relations. (4) is difficult to describe in terms of *events*. It can be interpreted as speaking about the *state of affair* of equalling four. No A-determinations are ascribed to it. In what B-relations does it stand? Most plausibly, the state of affair does not stand in any temporal relations at all. (5) says of two events (World War I and II) that they stand in a B-relation to each other: the one is earlier than the other. Here the "is" is to be read tenselessly. (6) ascribes a B-relation to the event "the meeting". It is contemporary with 6 pm on August 26 1999. Nothing about this event's being present, past or future is thereby implied.

Of course, giving examples of A- and B-sentences is one thing. But it is quite another thing to ask whether A-determinations are real. Ever since McTaggart introduced the distinction between the A- and the B-series, it has been debated which of the two is more fundamental, or whether one can be reduced to the other.[16] McTaggart himself argues that the A-series is incoherent, and he concludes that Tense is therefore unreal (see 3.4 below). And since he thinks that Tense is crucial for the explanation of change and thus for time itself, he in the end concludes that *time* is unreal. B-theorists agree with McTaggart that (for some reason or other) the past, present and future are all unreal. But most of them do not follow him in concluding that this leads to a denial of the reality of time.[17]

1.3 Tenses as Properties

A-sentences ascribe A-determinations to things. But what exactly is an A-determination? What kind of thing or object? To say that a sentence ascribes a determination to something, and to say that something possesses such determination, suggests that these determinations are *properties* of

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[15] Note that (2) contains another indexical element: the first-person pronoun "I" is a personal indexical.

[16] See also 3.1 below.

[17] See for example Mellor (1998a) chapter 7.2, who offers a B-theoretic explanation of change; see also 3.2 below.

things. I will assume that A-determinations are indeed properties.[18] But what are properties? A modest conception of properties takes them to be whatever is signified by consistent logical predicates.[19] A logical predicate is one which, in first-order predicate-logic, is formalised by a predicate letter.[20] On the modest conception, almost anything can be a property (one famous exception maybe being "existence", see 2.3 below). More substantial accounts of properties restrict what is to count as a property in various ways. They employ notions of "real" properties, naturalistic properties, essential properties and so on. Here I will try to get as far as possible with the modest conception of "property". The most important distinction in our case is whether something has a property permanently or non-permanently. Accordingly I will distinguish between stable and variable properties of things. Prima facie, A-determinations are variable properties of things. Something that is present, was not always present, but used to be future and will be past. But it is this seemingly trivial contention, which, as we will see in 3.4 below, is McTaggart's starting-point for his argument to the unreality of Tense and time.

McTaggart furthermore wonders whether A-determinations are "qualities" or "relations" (McTaggart 1927, p. 31). I interpret this as the question whether A-determinations are monadic properties or relational properties. Monadic properties are signified by one-place predicates like "is blue" or "works hard". Roughly speaking, relational properties can be signified by many-place predicates, for example by the two-place predicate

[18] Some A-theorists (like Smith) explicitly claim that A-determinations are properties, other A-theorists apparently deny this. See Smith (1986b) p. 180 who even says that most A-theorists believe that reality contains the past, present and future, but that they are not properties. But it is unclear what they take A-determinations to be instead. See also Smith (1993) chapter 5.8, where he criticises this "no-property" view. See also 1.4 and 3.1 below.

[19] See Künne (2003) chapter 1 and chapter 2.2; and Horwich (1990) p. 37 and pp. 141 f. who calls this the "liberal" conception.

[20] Prior's tense-logic (see 1.4 below) does not treat grammatical tenses as logical predicates but as operators. Thus according to Prior's tense-logic, A-determinations are not properties even in the modest sense. But this does not prove that they really are not properties. Tense-logic is clearly an *extension* of classical predicate-logic. And it is of course debatable if this extension is (ontologically) adequate.

"works harder than Tom" or "laughs at Garfield".[21] Now what kinds of properties are A-determinations? Are they signified by one-place predicates or by two-place predicates? At first sight it looks like A-determinations are signified by one-place predicates like "is past" or "is present". But it can be argued that they should properly be analysed as two-place predicates with the second relatum missing. McTaggart says:

> **"**Past, present, and future are characteristics which we ascribe to events, and also to moments of time, if these are taken as separate realities. What do we mean by past, present, and future? In the first place, are they relations or qualities? It seems quite clear to me that they are not qualities but relations, though, of course, like other relations, they will generate relational qualities in each of their terms. [...] If, then, anything is to be rightly called past, present, or future, it must be because it is in relation to something else. And this something else to which it is in relation must be something outside the time-series. For the relations of the A-series are changing relations, and no relations which are exclusively between members of the time-series can ever change." (McTaggart 1927, p. 31)

McTaggart does not give an argument as to why A-determinations should be relations. He also does not say what the relata in question are, he only says what they are not, namely members of the time-series (times or events). It is crucial that A-determinations are changing relations. Suppose that event e is past. Immediately the question arises: relative to what is e past? A sensible response would be that e is past relative to some time t. But McTaggart would not allow for this response, because t is a member of the time-series just like e. And while relations between members of the time-series are stable, we are looking for a changing relation. If e is past relative to t, it is always past relative to t. So what can be other candidates for the second relatum, so that the outcome is a changing relation?[22] McTaggart concedes that "to find such a term would not be easy, and yet

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[21] According to Künne, a relational property is one which is "signified by a monadic predicate which contains a polyadic predicate or which can be correctly explained in terms of such a predicate" (Künne (2003) chapter 1).

[22] How about something like the present moment or *now*? If e is past now, this is not always the case. See also 2.5.1.

such a term must be found, if the A series is to be real" (McTaggart 1927, p. 32).

To me it seems that we should drop McTaggart's claim that A-determinations are relational properties and instead claim that they are monadic properties. This makes it much easier to sustain the claim that they are changable properties. When we say that e is past, we can say that e is not always past, but only relative to certain times. Relative to other times, e may be present or future. McTaggart concedes that it may turn out that A-determinations are monadic properties after all; his argument against the A-series then turns on a different difficulty, see 3.4 below.

There are more questions concerning the nature of A-properties, be they relational or monadic. This is what McTaggart says:

> "Past, present, and future, then, are relations in which events stand to something outside the time-series. Are these relations simple, or can they be defined? I think that they are clearly simple and indefinable. But, on the other hand, I do not think that they are isolated and independent. It does not seem that we can know, for example, the meaning of pastness, if we do not know the meaning of presentness or of futurity." (McTaggart 1927, p. 31)

The question as to the definability of A-determinations will come up later, see 3.2 below. Some theorists who hold that the past, present and future are not real, claim that A-determinations can be reduced to B-relations. Some claim that all A-sentences can be translated by B-sentences. This claim seems to imply that A-determinations can be defined (by means of B-relations), see also 2.5.1 below. It is interesting to note that McTaggart believes that the past, present and future are not real, but at the same time holds that they are undefinable. His strategy for proving their unreality I will discuss in 3.4 below.

1.3.1 Tense as a Disjunctive Property

In one sense, the past, present and future are distinct A-determinations. But on the other hand they are closely related. McTaggart's observation which leads to his famous paradox (see 3.4 below) is: everything that has one of

these A-determinations, has all of them.[23] Of course nothing has them simultaneously. Since A-determintions are exclusive (see 1.3 above), they can only be posessed one at a time. Nevertheless the *disjunction* of the A-determinations should at all times be true of anything that has any A-determination:

"e is past, present or future"

is true of any e which has an A-determination.[24]

But there is a problem: This disjunctive A-property is true of any e at all times, it is a stable property of things. The consequence is that there is no change in A-determinations: suppose that e takes place at t2. Then it is true of e at t1, t2 and t3 that it is past, present or future (where t1 is earlier than t2, and t3 is later than t2). So how are we to account for change then? Those who believe in the reality of Tense usually believe in a dynamic world in which temporal change occurs (see 3.1 below). For them it would present a problem to account for such change by appealing to disjunctive A-determinations only.

So how can we capture both the intuition that there is change in A-determinations and that A-determinations are disjunctive properties? How can we capture the intuition that each event which has one A-determination has all of them, but not simultaneously? Smith suggests the following account, where the ascriptions of A-determinations are themselves tensed:

"E will be past, is now present, and was future; or E is now past and was present and was (still earlier) future; or E is now future and will be present and will (still later) be past" (Smith 1989, p. 204)

Smith concedes that tensed ascriptions of A-determinations imply an infinite regress of such ascriptions, but he claims that it is not vicious but benign (Smith 1989, p. 204, see below 2.6 and 3.4). But stated like this, the

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[23] Exceptions: if there is a first event, it was never future, and if there is a last event, it will never be past.

[24] The question remains: how are we to read the "is"? Is it tensed or tenseless? See 2.6 below.

disjunction is still true of each event at all times. Hence there is no change and such A-determinations are not variable properties of things.

1.4 No-Property View of Tense

Not all A-theorists believe that A-determinations are properties (see 1.3 above). Prior for example believes that even though the present is real, there is no such property as being present. Prior says what Tenses are not (namely properties), but he does not say what they are.[25] This is why he develops his so-called tense-logic where A-determinations are represented with the help of operators.[26] The thought is that while predicates designate properties, operators do not.

> ",Is present', 'is past', etc., are only quasi-predicates, and events only quasi-subjects. 'X's starting to be Y is past' just means 'It has been that X is starting to be Y', and the subject here is not X's starting to be Y but X. [...] It is X which comes to have started to be Y, and it is of X that it comes to be always the case that it once started to be Y; the other entities are superfluous, and we see how to do without them, how to stop treating them as subjects, when we see how to stop treating their temporal qualifications (,past', etc.) as predicates, by rephrasings which replace them with propositional prefixes (,It has been that' etc.) analogous to negation." (Prior 1967, p. 18)

Prior not only disbelieves in A-determinations, he also disbelieves in some of their possible bearers. As we can see from the above quote, he believes that talk about events is at bottom talk about things. Furthermore he opposes any "Platonism" about instants or times (Prior 1967, p. 132; see also 2.4 and 4.4.1 below).

Tense logic uses predicate-logic as a basis, and it adds some operators and axioms. The operators are one-place sentence-forming operators which

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[25] Smith for example criticises Prior's lack of ontological commitment, see Smith in Oaklander & Smith (1994) pp. 11 ff.; and also Smith (1993) pp. 166 ff.

[26] See Prior (1967) pp. 18 ff. and (1968a) pp. 40 ff.

apply to sentences[27]. They are: the future-tense operator F: it will be the case that, and the past-tense operator P: it was the case that. These operators can be iterated[28]. Since the core-sentences are present-tensed, there is no need for a present-tense operator N: it is (presently) the case that. Prior's metric tense-logic also provides ways of indicating temporal durations where necessary. For example "The meeting took place ten hours ago" can be represented as "Ten time-units (hours) ago it was the case that the meeting takes place".

Unlike predicates like "is future" or "is present", operator like "it was the case that" or "it will be the case that" do not suggest that there are properties of being past or being future[29]. But on the other hand, employing these tense-operators does not *exclude* the possibility that there are really properties of being present, past and future. Tense-logical syntax is used by both A- and B-theorists. We will see that it is useful for example for stating McTaggart's paradox (see 3.4 below) as well as the temporal truth-value links (see 4.4 below).

Traditional tense logic also incorporates a three-valued semantics, with a third truth-value "undecided" (or something similar). This is a departure from classical logic. Many theorists welcome this feature because it allows to accomodate the thought that the future is not real (see 3.5 below), or that only the present is real (which is Prior's view, see 3.1 below). B-theorists traditionally claim that all Tenses are equally (un)real, and they do not accept the three-valued semantics of tense-logic (see 3.2 below).[30]

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[27] In this they are similar to the operators of modal logic, "it is necessary that" and "it is possible that".

[28] That they can be syntactically iterated does not mean that there is something corresponding to each complex tense in natural language. Some iterations are only syntactically complex, but semantically redundant, see for example Ludlow:

"Prior's logic of nesting temporal operators seems to wildly overgenerate the set of possible tenses" (Ludlow 1999, p. 103).

[29] One advantage is supposed to be that this might avoid McTaggart's paradox, see 3.4 below. I am not going to discuss this matter here. As I said, the no-property-view is largely negative, and a positive account of what Tenses are supposed to be is hard to be found.

[30] For criticism of tense-logic, see also Evans (1985).

1.5 Conclusion

In this chapter I stressed that while grammatical tenses are features of languages, philosophical Tense is an ontological category. The past, present and future are Tenses, which I call "A-determinations". I said that they are variable properties of things. Logically, A-sentences ascribe A-determinations to things. The question whether Tense is real can be analysed as the question whether A-determinations are satisfied. They are satisfied if they are indeed possessed by something. Hence the next question is what the possible bearers of Tenses may be.

2. Bearers of Tenses

If A-determinations are properties, then what are their bearers? When it comes to the reality of A-determinations, the question is not whether A-determinations exist but whether they are satisfied, i.e. whether anything possesses them. Often it is not specified which their bearers are, or the candidates vary. But different kinds of bearers may have different implications for an overall ontology (or semantics). Most but not all theorists take events to be the bearers of A-determinations. Very importantly in the ontological debate, facts are proposed as candidates for bearers of A-determinations. Other theorists wonder if material objects like chairs, tables or persons can have A-determinations. Times are also proposed as bearers of A-determinations. Finally, semantics is concerned with the question if propositions (i.e. what is expressed by sentences) can be said to be past, present or future. This is not a question about grammar, but about sense or thought. It is important for the ontological debate, because every ontological account of Tense needs to specify what A-sentences express, as various arguments depend on this question.

2.1 Events

What are events and do they have A-determinations? Events are singular objects which exist in space and time.[31] They differ from other singular objects like chairs and tables in that they may be temporally extended. Singular events can be signified by singular terms like "the second world war" or "the race". General events on the other hand can be signified using general terms like "a race" or "a party". Non-instantaneous events have

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[31] See for example Davidson (1969); Barwise and Perry (1983). Of course I can only give the roughest characterisation of events here. What is important for my purposes is how events differ from facts on the one hand, and from material objects on the other, with respect to their temporal characteristics, see 2.2 and 2.3 below.

both a position in time and are extended in time (they have both a date and a duration). We can for example say that the second world-war took place in the 20th century, and we can say that it lasted nearly six years. In "The race is on Monday", "the race" stands for an event, and "is on Monday" is a predicate which ascribes a temporal location to this event.

Secondly, events may be temporal objects in the sense that they have A-determinations. For example, we may say that the second world-war is past, that it has the property of being past. The writing of these words is present. A-sentences can be interpreted as ascribing A-determinations to events. Logically they are of the form "e is past", "e is present" or "e is future" (see 1.2 above). Prima facie, A-determinations are properties which events seem to gain and loose: the second world-war was not always past. There were times when it was future, and terrible times when it was present. Also, by the time you read this, my writing of these words is of course past. This suggests that A-determinations are *variable* properties of events, see 1.3 above.

All B-theorists deny that events really have A-determinations (see 3.2 below). Most A-theorists claim that they do (see 3.1 below). Few A-theorists agree with the B-theorists that A-determinations are not properties at all, and a fortiori that they are not properties of events (see 1.4 above). Prior for example developed his tense-logic (among other things) in order to account for these intuitions. On top of that, Prior denies that events are real:

> "What I am suggesting is that what looks like talk about events is really at bottom talk about things." (Prior 1967, p. 10)

Prior believes that talk about events can be reduced to talk about material objects. If this is true, talk of events may be superfluous, but that does not show that events do not exist. I will not discuss this point here, but I will come back to the issue of reduction, when I introduce the various strategies used by the A- and B-theorists (see 3.1 and 3.2 below).

2.2 Facts

What are facts? The ontology of facts is subject to much controversy[32]. Some deny their existence altogether. Most deny that facts are objects in space and time. Instead they claim that facts are abstract objects, and that abstract objects are not located in space or time. A variant of this view is Frege's, who identifies facts with true Thoughts[33]: they are the senses (meanings) of complete sentences. They are abstract entities, which exist in a so-called Third Realm. It is important to note that for Frege, facts are located at the level of sense, not at the level of reference[34]. For him, the referents of complete sentences are truth-values (the True, the False)[35]. This view has been attacked even by some neo-Fregeans. They try to adjust (and "improve") his theory exactly by shifting facts to the level of reference[36]. A very different ontology of facts can be found in Wittgen nstein's Tractatus. According to it, the world consists *primarily* of facts, which are ordered in terms of their complexity[37]. Mellor's ontology also calls for a substantial and hierarchical account of facts. But for him, facts are objects in (space and) time which are the truth-makers of (true) sentences[38].

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[32] Of course I cannot rehearse this controversy here, but I will briefly lay out the different positions on this matter. Facts will play a role in the debate between A- and B-theorists, so I will mainly discuss those issues which are prominent there (see 3.1 and 3.2 below).

[33] See Frege (1918). Against this it may be argued that propositions cannot be identical with facts because the former are more fine-grained that the latter. I will not go into this discussion here. As we will see, it depends on the identity-criteria for propositions, see 2.5 below.

[34] But of course facts could lie at the level of reference and still be abstract objects. On Frege's view, numbers for example are abstract objects which are the referents of count-terms.

[35] See Frege (1892). Interestingly (as pointed out by Künne (2003) and Soames (1999)) this idea does not occur in Frege (1918).

[36] Yourgrau (1990) p. 121, for example claims that if we see facts as the referents of true sentences, all other things being equal, Frege's theory can accomodate its prima-facie difficulties with reference. See 2.5 below.

[37] See Wittgenstein (1922), opening paragraphs.

[38] See Mellor (1995) and (1998a) p. 25. See also 3.2 and 4.1 below.

How are facts to be individuated? Prima facie, facts are obtaining states of affairs. They can be signified by that-clauses[39]. Concerning events, I said earlier that there are singular events and general events (see 2.1 above). Does this distinction apply to facts as well? The standard account of facts has it that facts are singular: Most importantly here, this means that they are temporally determinate. For example it is a fact *that Peter won the race on 2 November 2001*. This fact contains a time-determination (2 November 2001). Prima facie, singular facts are facts at all times[40]. If Peter wins two races on two consecutive days, there are two singular facts (of the same general kind maybe): *that Peter won on 14 June 2001*, and *that Peter won on 15 June 2001*.

Mellor on the other hand claims that facts are temporally *located*[41]. His facts are temporally indeterminate, i.e. general facts[42]. When Mellor says that facts have temporal locations, this seems to imply that one and the same fact can be located at different times. For example the general fact *that Peter won the race* may be located at some time t1, but it may also be located at t2. If Peter wins two races on two consecutive days, there is just one fact (*that Peter wins the race*) which is located at two different times, say on *14 June 2001* and on *15 June 2001*. Mellor is aware of the fact that his account is non-standard. He concedes that one may have reason to interpret facts as containing time-determinations (private communication).[43] But his reason for instead holding a so-called "non-relational" account of facts, is that he needs it for his theory of causation.[44]

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[39] Facts can also be signified by singular terms, as for example in "the Holocaust is a fact".

[40] Alternatively it may be claimed that singular facts are timeless, in that they are facts at no time. Compare the difference between what is omnitemporal and what is atemporal, see 1.2 above and 2.5.1 below.

[41] See Mellor (1995) and (1998a) p. 91.

[42] Compare: there are two similarly different sorts of propositions, see 2.5 below.

[43] Mellor distinguishes his (general) facts from what he calls "facta", see Mellor (1995) and (1998a) p. 26. The latter are singular facts which contain a time-determination and which are very similar to the standard conception of facts.

[44] See Mellor (1995) and (1998a) chapter 9. I will not discuss here the different conceptions of change, since they do not directly enter into the debate between A- and B-theorists.

Now, can facts have A-determinations? Do we want to say of facts that they are past, present or future?[45] This again depends on what we take facts to be. To me it seems that only general facts can have A-determinations, while singular facts cannot. Hence on the standard account of facts, facts cannot be the bearers of A-determinations, while on a non-standard account like Mellor's, they can.[46] First take the singular fact *that Peter wins the race on 14 June 2001*. Can we say that it is past, present or future?[47] I have said above that singular facts are facts at all times. But if the fact *that Peter wins the race on 14 June 2001* is a fact at all times, it cannot be past, present or future. So maybe we should say instead that this singular fact has *all* A-determinations, that it is past, present and future? This would be incompatible with the observation that A-determinations are exclusive properties (see 1.3 above).[48]

What about general facts? (Again, the talk of general facts being non-standard.) I said that general facts have temporal locations. But do they have A-determinations as well? We may for example say that the general fact *that Peter wins the race* is past. Here, the A-determination "is past" is ascribed to the general fact *that Peter wins the race*. It should be noted that if that fact is past at all, it is not *always* past. The same fact, at other times, has different A-determinations: *That Peter wins the race* is future at all times before Peter wins the race, and it is past at all times after Peter wins the race. Hence A-determinations (if they are possessed by facts at all) are variable properties of general facts.

Finally, how do facts relate to events? There seems to be a close connection between the two. Events take place at certain times. And that they do, seems to constitute singular facts. For example, Peter's race is an event which takes place at t. Hence *that Peter's race takes place at t* is a singular fact. Now we may wonder: do we need an ontology which contains both

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[45] For discussion see for example Swinburne (1990); and Tooley (1997) part III.

[46] But ironically Mellor, being a B-theorist, of course *denies* that facts have A-determinations, see 3.2 below.

[47] Note the difference between saying a) that the fact is past, and b) that it is a fact about a past event. While a) ascribes the A-determination to the fact, b) ascribes the A-determination to the event.

[48] Also it would lead directly into McTaggart's paradox, see 3.4 below.

facts and events? And are they ontologically on a par? According to the standard view, events are things in space and time, while facts are not. In any case, singular facts are abstract objects which are not located in time or space. General facts on the other hand, if they exist at all, do have temporal locations. In this they are similar to events. Some theorists argue that we do not need an ontology *both* of events and of facts.[49] we can either reduce events to facts, or we can reduce facts to events.[50] In the end it seems like a question of different ontological levels: if we allow for both events and facts, then facts are categorially different things from events. In the end, the choice of ontology depends on the *use* one wants to make of it. As we will see, the debate about Tense employs both events and facts: some (like Mellor) claim that events are the bearers of A-determinations, and facts are the truth-makers of the corresponding A-sentences.[51]

2.3 Material objects

Do material objects like persons, tables, or chairs have A-determinations? Material objects are not temporally extended in the way that events are. Do they have temporal properties at all? Material objects do not seem to be located at some time and to have some duration in the same way as events do. We do not say for example that John is located at 12 October 2000. Instead we say that John *is alive* at 12 October 2000. Also we do not say for example that John lasts 80 years. Instead we say that John's *life* lasts 80 years.[52] What do we say in the case of non-animate objects? Some physicists claim that all (non-abstract) objects occupy certain (space-)times. But what does this mean? Usually when talking about non-animate things, we say for example that the *destruction* of a certain table takes place at some time, or that *its being used as a dining-table* lasted ten years. Again

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[49] See also Dummett and Anscombe on this point (4.1 below).

[50] Others argue that we do not need either, because the world only consists of material objects (compare Prior, 2.1 above).

[51] See 3.1 and 3.2 below.

[52] Events on the other hand are located at or *take place* at some time, and they *themselves* last for some duration, see 2.1 above.

we seem to ascribe the temporal properties not to the objects, but to events or states of affairs in which they feature.

So what about A-determinations? Does John for example have the property of being present? Again it seems to me that we would not say that John is present, but that his *being alive* is present. In the case of non-animate objects, things are similar: we do not say for example that a certain table is past, but we might say that *its being John*'s *dining-table* is past. Again, we do not ascribe A-determinations directly to the objects, but to events or states of affairs in which they feature.

Often ascriptions of temporal properties to material objects are confused with ascriptions of *temporal existence*. Some claim that to ascribe a temporal location t to an object, is to say that this object exists at t. And to say that an object is present, means that this object presently exists. But many theorists deny that "to exist" is a logical predicate which signifies a real property.[53] As a verb, it may receive grammatical tenses, but logically, it is tenseless (see 1.1. and 1.2 above). Existence can best be signified by means of the existential quantifier, which does not signify any property.[54] The existential quantifier is itself tenseless.[55] It is standardly interpreted as ranging over everything that exists atemporally or timelessly, over everything that has ever existed, exists now or will ever exist. For example we can equally quantify over Socrates, John's dining-table, and the number four. In a way, they all exist in the same sense. Existence, interpreted like this, is not temporally qualified.

2.3.1 Appendix: Future Individuals

When we ask whether anything possesses A-determinations, this question is especially difficult to answer in the case of the A-determination futurity[56]. Despite the general difficulties attached to assigning A-determinations to material objects (see 2.3 above), there is an interesting

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[53] See for example Gale (1966); Dummett (1981) pp. 386 ff.; Künne (2003) chapter 2.2.

[54] Compare: Prior's use of temporal operators, 1.4. above. Unlike predicates, operators do not signify properties.

[55] See 2.3.1 below.

[56] On the unreality of the future and some of its implications, see 3.5 below.

debate concerning the question whether there are any future individuals.[57] To get the debate off the ground, we do not have to claim that future individuals are individuals which have the A-property of being future. We can instead say that future individuals are individuals who are not yet conceived but who will be alive at some time in the future.[58] It is clear that we sometimes talk about future individuals. And often we say something true about them. But how do we achieve this? It may be questioned whether successful reference to future individuals is possible. I will argue that it is not. In order to make sense of our talk about them, I will employ Donnellan's concept of an attributive use of definite descriptions[59], showing that this is our only means for sensibly talking about future individuals.

When it comes to the question whether or not we can successfully refer to future individuals, we need to ask which are the expressions with which we might be able to refer to them. I will argue that if there are any expressions which refer to future individuals, they will have to be definite descriptions. Then the question will be whether any definite descriptions can in fact be *used referentially* to indentify future individuals.

First, I want to argue that no *demonstrative* can be used to refer to a future individual. We certainly cannot point to a future individual, not even to a representation (a picture or the like) of one. The only individuals we can properly refer to with a demonstrative, are present individuals. The only way we can ostensively identify a past individual, is by pointing to a representation of it.[60] One might object that we can point at a monitor or an image of an unborn foetus in a doctor's test. But it should be clear that what we then point at is not a future child, but a present foetus[61].

But what about *names*? Can we refer to a future individual by using a name? What tells against this suggestion is that future individuals do not

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[57] See for example Gale (1968b); Teichmann (1991); Benn (1998); Arrhenius (2000).

[58] When we say that *their being alive* is future, we ascribe the property of futurity not to the individuals, but to the states of affairs in which they feature, see 2.3 above.

[59] See Donnellan (1966).

[60] Quine calls this "deferred ostension", see Quine (1969b) p. 40.

[61] That is why I said above that "future individual" is taken to apply to yet unconceived individuals, i.e. individuals of whom no present traces exist.

now *have* names. This is something that distinguishes future from past or present individuals. While we can refer to past and present individuals by using their names, this is impossible for future individuals. This is obviously clear for anyone who believes in a causal theory of names[62]: Nothing can be named (baptised) before it is present.[63] And the causal order cannot be reversed.[64]

One might object that some people indeed do name future individuals even though they are not yet alive. Some people pick names for children which are not even conceived. A couple may decide to name their future first-born son "Random", and then start talking about Random, making all sorts of plans for him etc. Is this not proper reference to a future individual? I do not think so. They may pick a name *for* their future son (if they will ever have one), but this does not mean that there is presently an individual who is the bearer *of* that name.[65] Only when their son is conceived or born does "Random" become the name *of* their child. When making plans for their future son, they do not talk "about Random", as little as they refer to anyone.

But what *does* the couple talk about? Surely we do not want to say that they talk utter nonsense[66]. Should we say that "Random" in their talk functions rather like a definite description, for example like "our fist-born son"? This seems to suggest the applicability of the description-theory of names. But it still leaves open the question whether definite descritions can be used to refer to future individuals at all. Is referential use of definite

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[62] See for example Kripke (1980). Of course I cannot here discuss which theory of names is correct. It is not important in the present case, because both the causal theory and its main rival, the description theory of names, cannot be used to back up the claim that names can be used to refer to future individuals.

[63] Here we need to distinguish between genuine names and quasi-names like titles, which function rather like definite descriptions, see below.

[64] But see Dummett (1954).

[65] See the distinction made by Gale (1968b) p. 177, as well as Geach (1972) pp. 54 f. Gale compares the change from being a name *for* a child to being a name *of* a child to the change from being a handle *for* a door to being a handle *of* a door, once the handle is attached to the door it was designed for. This is to illustrate that there is nothing mysterious about such a change (Gale 1968b, p. 178).

[66] Gale claims that such talk resembles a "fictional narration", i.e. nonsense (Gale 1968b, p. 185).

descritions possible when it comes to future individuals, or can they only be used attributively? I want to argue that they can only be used attributively; and since this is the last candidate on our list, this will leave no room for any reference to future individuals at all.

Let us suppose that "Random" is the name which Panjvani choses for his (not yet conceived) first-born son. According to the description theory of names, "Random" can be analysed as a *definite description*, for example "Panjvani's future first-born son". Now consider the following sentence:

P: Panjvani's first-born son will be clever.

Along Russellian lines[67], a description can be analysed as a quantificational expression. How do we analyse (P)? There seem to be at least three different ways to analyse this sentence, depending on how the existential quantifier is to be read and how we interpret the future-tense[68]:

P1: There *is* exactly one person who is Panjvani's first-born son, and he will be clever.

P2: There is exactly one person who is Panjvani's first-born son, and he will be clever.

P3: There *will be* exactly one person who is Panjvani's first-born son, and he is clever.

In (P1), the existential quantifier is taken in the present-tense way, whereas in (P3), it is modified by the future-tense operator. In (P1), the quantifier ranges over presently existing objects, whereas in (P3), the quantifier ranges over future objects[69]. In (P2), the existential quantifier is to be understood in the standard way.[70] It ranges over all objects which exist at any time or at no time.

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[67] Russell (1905). Strawson famously criticises this view in his (1950a).

[68] I will not try to fully analyse (P) here. I will only show that there are various options, and that there seems to be only one sort of way in which successful reference to a future individual is possible.

[69] See for example Prior (1960) p. 80 or Geach (1972) p. 55 on how the existential quantifier should be read.

[70] See 2.3 above.

Presented like this, it should be clear that (P1) is nonsense, because Panjvani's first-born son, being a future individual, does not presently exist. There is no way in which we can say anything true with (P1). In (P2), we say that at some (or no) time there is a person who will be Panjvani's first-born son. This seems to be analysable in different ways: either it means something like (P1), but then it also has the same problems. Or it can be analysed along the lines of (P3), and in this case it shares the problems and prospects of that interpretation. So, what about (P3)? It says that there will be a person who is both Panjvani's son and clever. By quantifying over future persons, we quantify over what does not yet exist. How can we do that? Theorists who do not believe in the reality of the future claim that we thereby quantify over an empty domain.[71] In any case, we certainly do not *know* which individuals make up the domain of our discourse. Nevertheless it seems that we can say something sensible with (P3). We can say that (P3) is true if, *whoever* Panjvani's first-born son will turn out to be, that person is clever. In doing this, we use the description "Panjvani's first-born son" attributively, saying that *whoever* will be Panjvani's son, that person is clever.

Finally I want to argue that this attributive use is the *only* use we can make of a description of a future individual, that is, we cannot use it referentially. The referential use of a definite description would allow us to refer to an individual whether or not he or she in fact satisfies the description (Donnellan 1966). But this does not work in the case of future individuals. With "Panjvani's first-born son" we cannot refer to a particular individual who may *or may not* in fact be Panjvani's first son. We cannot say anything true with (P), by referring to a particular individual who will be clever, whether or not that person is in fact Panjvani's first-born son. Which individual would we have to have in mind? There is no such individual which we could take ourselves to refer to. Consequently no referential use of a definite description for a future individual is possible; and since this is the last candidate on our list, there are no expressions which can be used to refer to future individuals at all.

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[71] They would also claim that we cannot say anything true with (P), because it does not have a definite truth-value yet, see 1.4 above and 3.5 below.

2.4 Times

It can be claimed that A-determinations are properties of times.[72] For
example it can be claimed that dates like 12 noon on 3 April 1999 have the
properties of being past, present or future. Now there are several ways to
interpret this. If A-determinations are properties of times, then what are
times? Some theorists (especially some A-theorists, see 3.1 and 4.4.1
below) do not believe in the existence of times. Prior for example criticises
any form of "Platonism" about instants[73]. Instead he identifies an instant
with a conjuction of all those propositions which would ordinarily be said
to be true at that instant:

> "This sounds a highly artificial procedure, but remember that what
> lies behind it is the belief that 'instants' are artificial entities
> anyhow, i.e. that all talk which appears to be about them, and
> about the 'time-series' which they are supposed to constitute, is
> just disguised talk about what is and has been and will be the
> case." (Prior 1967, p. 123)

But identifying times or instants with propositions in any case commits one
to the existence of propositions. Hence an ontological economy is not
necessarily the result of a step like Prior's. Also it is not so clear what is
meant by a "proposition being true at an instant", when instants are
themselves propositions.[74]

Let us suppose that times or dates are indeed real and that they have A-
determinations as properties. Are these stable or variable properties of
times? It seems that A-determinations are variable properties of times: one
and the same time can have different A-determinations, but only relative to
different times. For example, 16 October 2002 is past at all times later than
16 October 2002. And it is future at all times earlier than 16 October 2002.
Anyone who believes that there *are* times and that they are the bearers of

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[72] See for example Tooley (1997). As will become apparent in chapter 3.1 below, the
discussion of McTaggart's paradox involves both events and times as bearers of A-
determinations.

[73] Prior (1967) p. 132; see also 1.4 above.

[74] I will not discuss this matter here. Concerning different conceptions of propositions, see
2.5 below.

A-determinations, should hold that A-determinations are variable properties of times.[75]

Note that in this account, times come up twice: namely when we say that times have A-determinations relative to *times*[76]. Alternatively one could say that times have A-determinations relative to other A-determinations: for example, that a time t is present in the past, or that t's being present is past. But in this case, A-determinations come up twice: First we ascribe an A-determination to a time, and then we seem to ascribe an A-determination to a state of affair[77]. But now a problem arises. Because we may ask: *when* is it past that t is present? If we again answer by adding another A-determination, we seem to get an infinite regress.[78]

2.5 Propositions

Besides being properties of things "in the world", A-determinations can also be posited as properties of semantic entities. Above I said that A-sentences ascribe A-determinations to something "in the world". How do sentences achieve this? Arguably there is an intermediate step: a level of thought[79]. Sentences express thoughts or propositions. They are abstract objects, objects on the level of sense rather than reference. The question is whether propositions can be bearers of A-determinations (or something corresponding to them on the level of thought). This depends on assumptions about the nature of thoughts. It is a matter of controversy what propositions are and how they are to be individuated. What kind of

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[75] Note that the matter is not so clear-cut in the cases of events or facts as possible bearers of A-determinations (see 2.1 and 2.2 above). There it depends on whether events or facts are singular or general.

[76] For discussion see 3.4 below.

[77] Compare 2.6 below.

[78] Smith, who follows this line, does not think that this is problematic, Smith 1986b; see also 2.6 and 3.4 below.

[79] Some theorists deny that propositions are real. Quine for example famously argues that propositions should be abandoned from our ontology, see Quine (1960) and (1969c). I will not discuss this point here. In any case, propositions (and different kinds of propositions) do play a significant role in the debate concerning Tense, see below.

proposition does an A-sentence express? What does such a proposition consist of? Here are some prima facie claims concerning the difference between A- and B-propositions: A proposition which itself contains a temporally indexical element[80], is an A-proposition, while a proposition which does not contain any indexical element, is a B-proposition. While all B-propositions have stable truth-values[81], A-propositions may have variable truth-values. A-propositions can only be expressed by A-sentences. But the question remains whether A-sentences in fact do express A- or B-propositions.[82]

An A-proposition can be one of two things:[83] a) either it is a complete proposition, or b) it is incomplete in that it does not contain a time-determination.[84] Take for example the A-sentence, uttered on 2 January 2002 at noon:

S: "It is raining now"

According to (a), (S) expresses a complete proposition which contains a time-determination corresponding to noon on 2 January 2002. It also contains an A-element, one corresponding to "now". (Otherwise it would be a B-proposition.) Every time (S) is uttered, it expresses a different complete proposition. According to (b), (S) expresses an incomplete proposition which does not contain a time-determination. It does contain an indexical element corresponding to "now" though. Every time (S) is uttered, the same incomplete proposition is expressed. It may sometimes be true and sometimes false.

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[80] Here I only consider temporal indexicals and leave aside personal or local indexicals.

[81] Note that some theorists claim that B-propositions can have shifting truth-values too. Tooley (1997) for example holds that sentences about the future express B-propositions which change from indeterminate to true/ false. He claims that propositions only receive definite truth-values once their subject-matter becomes "actual" (Tooley 1997, pp. 127 f.) I will neglect this point in this chapter, but will come back to it in 3.2 below.

[82] For discussion see Carruthers (1984); Cartwright (1962) and (1968); Smith (1990a) and (1990b); Higginbotham (1995); Sosa (1996).

[83] Compare Künne (2003) chapter 5.3, where he distinguishes between temporally determinate and temporally indeterminate propositions.

[84] Let us suppose that the sentence in question does not contain any other indexical elements besides temporal ones.

Complete A-propositions have stable truth-values, whereas incomplete A-propositions may have shifting truth-values. Hence it is not enough to say that A-sentences express A-propositions. This alone does not settle the matter between temporalism and eternalism (see 2.5.1 below). As we will see, temporalism is committed to A-propositions of type (b), i.e. to incomplete propositions. Eternalists who believe in A-propositions on the other hand need to posit A-propositions of type (a). Eternalists have furthermore the choice to deny that A-sentences express A-propositions at all. They may claim that all sentences (A- as well as B-sentences) express B-propositions which contain no A-elements whatsoever and whose truth-values are stable (see 2.5.1 below).

2.5.1 Eternalism vs Temporalism

Is truth a stable property of propositions, or is it a variable property of proposition?[85] Eternalists hold that truth is a stable property of propositions, while temporalists hold that truth can be a variable property of propositions. Their differing views are tied to different conceptions of the make-up of propositions. Temporalists believe that A-sentences express incomplete, i.e. temporally indeterminate propositions. They do not contain any time-determination, and they can receive shifting truth-values. Eternalists on the other hand claim that all sentences express complete propositions whose truth-values do not change. But as Künne[86] convincingly argues, eternalists come in two sorts: Eliminativist eternalists claim that A-sentences express complete B-propositions, while non-eliminativist eternalists hold that A-sentences express complete A-propositions.

Both eliminativist and non-eliminativist eternalists hold that truth is a stable property of propositions. There is no difference in their interpretation of (non-ambiguous) B-sentences. It is only concerning the interpretation of *A*-sentences where the two diverge: *Eliminativist eternalists* claim that A-sentences have the same meanings and express the same propositions as B-

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[85] See also Künne (2003) "Conceptions of Truth" (which I will henceforth call "CT") chapter 5.1.

[86] See CT chapters 5.2 and 5.3.

sentences.[87] They claim that A-sentences can be translated into B-sentences. Everything that can be said with A-sentences can be said using B-sentences only; according to eliminativist eternalists, there is no need for an A-language.[88]

This view has been criticised so forcefully that nobody nowadays holds it anymore (see also 3.2 below).[89] The argument from the so-called essential indexical relies on examples like the following: Suppose that at t (10 am on 29 June 2001) I consent to the A-sentence

> M: My breakfast this morning is past.

And suppose that (M) is true at t. At the same time t, I consent to the B-sentence

> N: It is not the case that my breakfast this morning is earlier than 10 am on 29 June 2001.

Rather I (falsely) believe that—as always—I had my breakfast at 11 am this morning and that it is now noon. Now, by consenting to (M) and (N) at t, do I consent to a contradiction of the type "p and not p"[90]? Am I that irrational? I suppose that most people would agree that my mistake lies somewhere else: I do not consent to contradictory sentences, I have simply lost track of time[91]. (Accidently I got up much too early this morning, which caused my confusion concerning the time of my breakfast.) This shows that "e ist past" at t does not mean the same as "e is earlier than t". Since I can consistently consent to the one without consenting to the other (while understanding both), the two cannot have the same meaning or

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[87] Compare CT chapter 5.2.1.

[88] Famously, Russell and Quine are eliminativist eternalists. See Russell (1918) and (1906); Quine (1960).

[89] For discussion see Evans (1982) and (1985a); Kaplan (1977), (1978), (1979) and (1989); Perry (1977), (1979), (1980), (1997a) and (1997b); Yourgrau (1990).

[90] If "e is past" at t and "e is earlier than t" did have the same meaning, I would consent to two contradictory sentences of the form "p" and "not p".

[91] On this notion, see also 5.4 below.

express the same thought. Hence A- and B-sentences do not have the same meanings and cannot be translated into another.[92]

Non-eliminativist eternalists give distinct interpretations of A- and of B-sentences.[93] They hold that A-sentences cannot be translated by B-sentences, because they do not express the same kinds of propositions. A-sentences express A-propositions, while B-sentences express B-propositions. Nevertheless—according to non-eliminativist eternalists—both kinds of propositions have stable truth-values. But for A-sentences to express A-propositions which have stable truth-values, a sophisticated conception of the make-up of propositions is needed. They have to be complete, yet contain some A-element.[94] These types of propositions may be a key to an understanding of how A-language works.[95] Künne suggests that Frege's theory of indexicals for example seems to allow for non-eliminativist eternalism (Künne 1997, and CT chapter 5.2.2), see below.

As I said above, A-sentences express A-propositions which contain some indexical A-element. Now the crucial question is, what is this A-element which makes these propositions A-propositions in the first place? What is their A-ingredient which distinguishes them from B-propositions? Consider again the following A-sentence, uttered on 2 January 2002 at noon:

S: "It is raining now"

Along Fregean lines, we can distinguish two things: first there is what Frege calls the *thought-expression,* and second there is what he calls the *thought expressed*. The thought-expression consists of the sentence-token

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[92] This type of argument relies on the following criteria of propositional identity (or difference): two sentences do not express the same proposition if someone, who understands both, may consistently consent to the one but dissents from the other. Compare CT chapter 2.1 on Frege's criterion of cognitive equivalence.

[93] They are convinced by arguments from the essential indexical. See CT chapter 5.2.2.

[94] For discussion see also Higginbotham (1995) and Peacocke (1981).

[95] But surprisingly they are not considered in the debate between A-theorists and B-theorists. As I will argue below, they could be of great use for the new B-theorists, see 3.2. and 3.4.1 below.

together with the time of utterance.[96] What is the thought (proposition) which it expresses? According to the view under consideration, (S) on 2 Januar 2002 expresses a complete A-proposition, consisting of the sense of (S) (which contains some A-element) and its time-determination. The time-determination is that part of a thought which determines the time of utterance.

What is the time-determination in the case of (S)? We are looking for a component of a proposition which determines noon on 2 January 2002. Fregean propositions consist entirely of senses, that is, every component of a Fregean proposition has to be a sense.[97] Thus the time-determination we are looking for should have to be a sense as well. It is that sense which uniquely determines noon on 2 January 2002. Here is one obvious candidate: the sense of the expression "noon on 2 January 2002". The sense of this expression uniquely determines noon on 2 January 2002, regardless of the time of its utterance. But is it really part of the proposition expressed by (S) on at noon on 2 January 2002?[98] Where does it come from? Obviously (S) does not contain the *expression* "noon on 2 January 2002", so how can its sense enter the proposition expressed? This must somehow work via the time of utterance which is part of the thought-expression. Below I will discuss different proposals as to how this might be achieved.

It is crucial to remember that—on the view considered here—the proposition expressed by (S) on January 2002 at noon is an A-proposition. There needs to be some A-element which is part of the proposition expressed. If it were not for this indexical element, the whole proposition would not be an A-proposition, but a B-proposition. It would be identical with the proposition which is expressed by the B-sentence

T: It rains in London at noon on 2 January 2002.

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[96] See Künne (1997) and CT chapter 5.2.2, where he calls such thought-expressions "hybrid".

[97] See Frege (1892); Dummett (1981) pp. 378 f.; see also 2.5.2 below.

[98] There could be other senses which also uniquely determine noon on 2 January 2002. Generally, different senses can determine the same referent. But one and the same sense can only determine one referent. See Frege (1892).

(T) expresses the same B-propositions at all times of utterance. As the argument from the essential indexical shows (see above), B-sentences do not express the same kinds of propositions as A-sentences. This means that (T) cannot express the same proposition as (S) on 2 January 2002 at noon. While (T) expresses a B-proposition, (S) expresses at all times A-propositions. In any case we are committed to some A-element in the propositions expressed by (S). This element is tied to the sense of "now". How this sense can be characterised, I will discuss later on, see 2.5.2 below.

Künne distinguishes between two further sorts of eternalism (CT chapter 5.2.4). *Atemporalism* is the view that the truth-predicate is to be read tenselessly, as making no reference to time at all. According to this view, what is true is true "outside of time" or without temporal qualification (see also 1.2). *Sempiternalism* on the other hand is the view that what is true is *always* true. But not all sempiternalists agree on the interpretation of "always". This is why sempiternalism is further divided into the *bilateral* (omnitemporal) camp and the *unilateral* camp: while the first holds that truth can neither be acquired nor lost ("always" means "at *all* times"), the latter holds that it can be acquired but not lost ("always" means "at all times from a certain moment on"). The latter view is held by those who claim that there are no true (or false) propositions about the future.[99] This claim is often accompanied by (and sometimes confused with, as Künne points out, CT chapter 5.2.4) the idea that the future is not determined (see 3.5 below).

Temporalism is opposed to any kind of eternalism. Temporalism is the doctrine that (non-tautological) A-sentences express incomplete A-propositions which have shifting truth-values. Temporalists like Arthur Prior, David Kaplan and Pavel Tichy claim that tensed truth-ascriptions in natural language are to be taken at face-value. But it is far from obvious that natural language can supply conclusive evidence for temporalism or for eternalism.[100] Temporalists of course agree with non-eliminativist eternalists that the past, present and future tenses are semantically

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[99] See Tooley (1997) who holds such a view.

[100] I will not discuss this matter here. But see for example Künne CT chapter 5.3.2; and my 1.2 above.

irreducible, i.e. that A-sentences and B-sentences never express the same kinds of propositions. But temporalists have a different conception of the make-up of A-propositions and of propositional identity. Temporalists hold that for example "It is raining now" expresses the *same* incomplete proposition on Monday as on Tuesday or as on any other day. This is because the proposition it expresses does not contain any time-determination[101]. This proposition can accordingly change its truth-value over time.[102] It is true whenever it is raining, and false otherwise.

2.5.2 Structured Propositions

I said that according to a *Fregean account,* propositions are structured entities which consist entirely of senses, see 2.5.1 above . Take again the A-sentence

    S: It is raining now.

On the Fregean view, (S) expresses a proposition which consists of: the sense of "It is raining" and the sense of the indexical "now". According to temporalism, (S) expresses the same proposition at all times. This means that the sense of "now" is the same at all times, too. Non-eliminativist eternalists too claim that "now" has a stable sense. But unlike temporalists, they claim that A-sentences express different A-propositions relative to different times. On their account, the time of utterance, which is part of the thought-expression, is responsible for this difference. Only eliminativist eternalists claim that "now" expresses different senses at different times. On their view, the sense of "now" is identical with the sense of the definite description which designates the time of utterance. But as we saw above, their position is ruled out by the argument from the essential indexical.[103]

    So what is the sense of "now"? Whatever its sense may be, it should be clear that—by itself—it cannot serve to uniquely determine any specific

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[101] Incomplete A-propositions consist of the same components as complete A-propositions, except that they lack a time determination.

[102] Note that one and the same incomplete proposition can be both true and false, but only relative to different times, never at one and the same time.

[103] The same seems to hold of the direct reference account, see below.

time. The sense of "now" is not identical with the sense of a definite description like "noon on 2 January 2002", even when uttered at that time.[104] It can be argued that the sense of "now" is a function, namlely a function from the time of utterance (which is part of the thought-expression) to the sense which determines this time. Does this mean that the sense of "now" is stable or variable? As a function, its sense is stable, because there is just one function. But since it is a function which delivers different values for different arguments, the function is variable.[105] And since it is not the values of the function, but the function itself which is the sense of "now", we can say that "now" expresses a stable sense which is a variable function.

Künne (1997, pp. 64 f.) sets out to define the sense of "now" in a Bolzano-fashion[106]. This is his definition of a "nunc-mode of presentation" (= the sense of "now"):

NMP: α is a now-mode of presentation = def.

α is simple & nec (∀t) (∀t') (t is presented by α & t' is presented by α → t = t')

What does this definition tell us? As I read it, (NMP) is designed to give a criterion for what it takes to count as an instance of the kind: now-mode of presentation. "α" stands for any such instance. As I understand it, the criterion is: an instance of a now-mode of presentation is simple and it picks out a single time. Let us look at the first conjunct first: simplicity is to be defined as follows: a sense is simple if it is not expressible by indexical or non-indexical definite descriptions (see Künne 1997, p. 54). What about the second conjunct? It says that α presents a single time (not more than one). But is that surprising? In a Fregean framework, one and the same sense cannot determine different referents. Therefore, since "α" stands for a

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[104] It may be suggested that "now" should be analysed as "the time of this utterance". This is problematic for at leatst two reasons: first the latter is token-reflexive and hence also indexical; and second not all uses of "now" are parts of utterances. See also Mellor on token-reflexives, 3.4.1 below.

[105] Compare Mellor on variable functions, Mellor (1998a) chapter 6; and 3.2 and 3.4 below.

[106] It is modelled after the sense of "I". As I will presently show it is not modelled closely enough.

single sense (a single member of the kind: now-mode of presentation), the second conjunct is redundant on a Fregean account. We are left with the first conjunct. Now all (NMP) really tells us, is that α is simple. But then it is unclear how a now-mode of presentation is distinguished from other simple senses (like the sense of "I", or maybe "yesterday" for example). Interpreted like this, (NMP) obviously does not say enough. It does not uniquely characterize what it takes to be an instance of a now-mode of presentation. It just gives a necessary, but not a sufficient condition.[107] In fact, every simple sense satisfies the definition of a now-mode of presentation.

There is something missing in Künne's definition[108], something which gives sufficient conditions for being a now-mode of presentation. I want to suggest that his definition can be fixed by explicit reference to the *time of presentation*. If we talk about the mode of presentation of a time *at a time*, this introduces a relational conception of a mode of presentation. Moreover, the now-mode of presentation has it that the time of presentation is *identical* with the time which is presented. This reflexivity should be brought out in the definition of a now-mode of presentation, so that no other sense besides the sense of "now" can be a now-mode of presentation.

Another problem with the definition has been pointed out by Wright (personal communication): If α does not present a time at all, the second conjunct, consisting of a conditional (a material implication) with a false antecedent, becomes vacuously true. To avoid this, we need to add another conjunct which says that α does in fact present a time. Now this is the definition of such a relational now-mode of presentation which I want to suggest:[109]

NMP*: α is a now-mode of presentation = def.

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[107] I suppose that the "= def." is to be read as a biconditional, which indicates that the definition is designed to give neccessary *and* sufficient conditions for what it takes to be a species of a now-mode of presentation.

[108] Künne concedes this in his CT chapter 5.2.4.

[109] In his CT chapter 5.2.4, Künne offers a corrected version of his definition which is very similar to my (NMP*): "For each instant there is a *nunc*-mode of presentation, where α is a *nunc*-mode of presentation iff α is simple & ∃t (α is a mode of presentation of t) & nec ∀t, t* (t is presented at t* by α → t = t*)".

α is simple & $(\forall t')$ $(\exists t)$ (t is presented at t' by α) & $(\forall t)$ $(\forall t')$ (t is presented at t' by α → t = t')

(NMP*) says that the following is a necessary and sufficient criterion for being a species of the kind *now-mode of presentation*: it is simple, and it picks out a single time which is identical (contemporary) with the time of presentation. Here, the last conjunct is obviously not redundant.

As I said above, this definition may be very useful for the non-eliminativist eternalist. It may help to understand how we should conceive of temporally determinate A-propositions. But this conception is not without problems. For example, it seems impossible that two differently tensed A-sentences should express the same complete A-proposition.[110] What is expressed by (S) on one day cannot (strictly speaking) be expressed for example by an utterance on the following day of

R: It was raining yesterday.

We would like to say that (R) expresses the same proposition as (S). But while (R) expresses a past-proposition and contains the sense of "yesterday", (S) expresses a present-proposition which contains the sense of "now". And it is not very likely that these two senses coincide[111].

Of course Frege's view of propositions is not the only one available.[112] Its most famous rival is a *Russellian account* of propositions.[113] A Russellian (or singular) proposition is an abstract object—a set—which does not consist solely of senses (like a Fregean proposition), but of concrete objects as well. The key-idea is that the referents of directly

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[110] This may also be a problem for the temporal truth-value links, see 4.4 below. It can be argued that it is difficult on this account to ever express the same complete A-proposition at different times. This raises problems for diachronic inconsistency, see 4.6 below.

[111] The sense of "yesterday" and other temporal indexicals can be characterised in a fashion similar to (NMP). I will not here spell them out, because for my purposes it is enough to mention that it can be done and what the consequences would be.

[112] Also there is the view that propositions are sets of possible worlds: the sentence "Tom is winning a race" expresses a proposition which consists of all possible worlds in which it is true. I will not discuss here whether propositions alias sets of possible worlds can have A-determinations.

[113] For discussion see Castaneda (1989); Recanati (1993).

referential terms feature in the propositions themselves. Names for examples can be treated as directly referential[114]. Indexicals are also candidates for directly referential expressions. On this view, temporal indexicals like "now" directly refer to times, without the mediation of a sense. For example,

S: It is raining now.

uttered at noon October 12, 2000, expresses the Russellian proposition consisting of the concept of the falling of rain and a time t, namely noon October 12, 2000. But here is the problem: this proposition is *not* an A-proposition. It does not contain any indexical element. Exactly the same proposition can be expressed by a sentence which does not ascribe any A-determination at all. To wit, the B-sentence

T: It rains at noon October 12, 2000

can be interpreted as expressesing the same Russellian proposition as (S) at noon on October 12, 2000. This means that theorists who take A-sentences to express Russellian propositions and who believe that temporal indexicals are directly referential, seem to be eliminativist eternalists. But as I said above, the argument from the essential indexical shows that A-sentences and B-sentences do not express the same kinds of propositions. Hence the Russellian account of propositions should be rejected in the case of A-sentences.

But not all theorists are ready to give up Russellian propositions. Perry and Kaplan for example want to combine a Russellian view of propositions with non-eliminativist eternalism.[115] They claim that on the one hand, A-sentences express Russellian propositions (Kaplan: "content", Perry: "thought") which are indeed B-propositions. But on the other hand they also express temporally indeterminate A-propositions, namely "characters" (Kaplan) or "senses" or "roles" (Perry). For Perry, the B-proposition is "apprehended in a certain way", that is, "under a certain sense", in a certain A-way. This requires giving up Frege's identification of sense and

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[114] The idea is that terms are directly referential if they do not refer to their referents via a sense, but directly. See Kripke (1980); and Recanati (1993).

[115] Kaplan (1979); Perry (1977).

proposition, which Perry in fact does. Meaning (character, or Perry's role (sense)) plays a role for psychological states and action.[116].

I will not here discuss Perry's and Kaplan's theories, but I want to briefly illustrate what especially Perry is after: Suppose on 3 October 1999 at 4 pm I believe that the exams are beginning now. The content of this belief (the thought) is the (Russellian) B-proposition (P), consisting of 4 pm on 3 October 1999, the exams and the property of beginning. Suppose further that at the same time, my fellow student Tom also believes that the exams begin at 4 pm on 3 October 1999. The content of his belief is exactly the same as mine, (P): it consists of 4 pm on 3 October 1999, the exams and the property of beginning. But here is the difference: While at 4 pm on 3 October 1999 I take out my pen and get sweaty hands, Tom (who falsely thinks it is only 2 pm on 3 October 1999) is still busy studying. Same thought, different actions. This difference in action, according to Perry, can be explained by the difference in sense: while I believe (P) under a "present" sense, Tom does not believe it under a present sense. (In fact, for Tom, (P) coincides with the sense (character) of his belief, since for all B-beliefs (sentences), there is no difference between their content and character.)

Alternatively, Tom and I could believe different things, yet act in the same way because we apprehend our different thoughts under the same character: suppose I believe at 4 pm on 3 October 1999 that the exams are beginning now (P), while Tom (falsely) believes at 2 pm on 3 October 1999 that the exams are beginning now. His belief has the content (Q), consisting of 2 pm on 3 October 1999, the exams and the property of beginning. We both take out our pens and get sweaty hands, me at 4 pm and Tom at 2 pm on 3 October 1999. This coincidence is due to the fact that we both believe what we believe in a *present* way, despite the fact that his thought and my thought differ (different thought, same sense, same action).

Smith offers a suggestion how to combine Fregean and Russellian insights in a useful way (Smith 1990b). But I will argue that his proposal is not successful, because it is unfaithful to both the ideas of Frege and Russell. Now Smith's contention is that A-sentences express propositions

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[116] Compare Mellor, who acknowledges that A-determinations play a role in A-beliefs, where A-beliefs are needed for timely action (Mellor 1998a pp. 64 f.). See 3.2 and 3.4.1 below.

which contain both the sense AND the direct referent of the temporal indexical, as temporal indexicals express senses AND directly refer to times:[117]

> "The theory of temporal indexicals that I am advocating asserts that uses of these indexicals directly and rigidly refer to moments of time and express senses that (a) characterize these moments as present or as past or as future to some degree and (in the case of adverbial uses) that (b) relate the moments to the events designated by the rest of the sentence via the relations of simultaneity, earlier than, or later than." (Smith 1990b, pp. 149 f.)

According to Smith, "now", when uttered at t, directly refers to t and also expresses a sense. What is the sense of "now"? Smith claims that "now" ascribes the monadic property of presentness to a date or event (Smith 1990b, p. 143). Take for example the A-sentence

S: It is raining now.

According to Smith, the proposition expressed by (S) at noon 12 October 2000, consists of: the concept of rain falling, noon 12 October 2000, and the concept of presentness. The proposition contains *both* the direct referent and the sense of the indexial "now". If we take seriously Smith's contention that the role of the sense of the indexical is to *characterise* the direct referent (see the above quote), this introduces a certain structure into the proposition: Here, noon 12 October 2000 is characterised by the concept of presentness. But what does this mean? For Smith, this seems to mean that noon 12 October 2000 has the monadic *property* of being present (Smith 1990b, p. 143).

I will not discuss Smith's account in detail here. I only want to point out that it strikes me as rather odd. It seems to subvert the whole idea of direct reference. To say that a term directly refers to an object, is to say that it refers to the object without a mediating sense. Now why would we want to reintroduce senses into this picture? At the same time, Smith's proposal

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[117] Smith also mentions another mixed account, namely Plantinga's (in Plantinga 1978), which combines sense with direct reference in a different way (Smith 1990b, p. 150). Note that Plantinga develops it with respect to an argument in the philosophy of religion, see 3.5.1. below.

subverts the idea of senses. Traditionally conceived, it is the role of a sense to determine a referent. On Smith's account, it merely "characterises" the referent. But it is questionable whether senses can in fact do this.

Smith clearly sympathises with the so-called new theory of reference which claims that indexicals are directly referential (Smith 1990b, p. 136). But as I pointed out above, this theory has difficulties to account for the argument from the essential indexical. The "traditional" Fregean theory of indirect reference on the other hand can account for the argument from the essential indexical, but it has some difficulties of its own. I said above that on a Fregean account there may be problems to express the same complete A-proposition at different times. Clearly a synthesis would be desirable (but maybe unachievable): a position which combines the good parts of each theory and fixes the less favourable ones. Is Smith's such a perfect synthesis? My impression is that it is not, because it is not faithful in spirit to Frege's nor to Russell's account of propositions.

2.6 Ascriptions of Tenses

Finally, A-theorists and B-theorists may disagree over the question whether ascriptions of A-determinations are significantly tensed. Not all A-theorists claim that they are, but all B-theorists deny it. What are the consequences of the claim that ascriptions of A-determinations are tensed? Do tensed ascriptions of A-determinations themselves ascribe A-determinations to something? But to what? Take the following example: "My 28th birthday is past", said by me on 4 October 2002. The quoted A-sentence ascribes an A-determination (being past) to my 28th birthday. Now the question is: is this ascription itself tensed?[118] The A-theorist may claim that the "is" in the quoted sentence is present-tensed, which means that my 28th birthday *presently* has the property of being past. But does this again ascribe some A-determination? And to what? To this the A-theorist may reply: *my 28th birthday*'s *being past* has the property of being present. Or alternatively: *that my 28th birthday is past* has the property of being present. But what

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[118] I do not think that this is taken to imply that the ascription has the property of being present. How could an ascription have an A-determination?

kind of object is this?[119] We may say it is a state of affair or (if it obtains) a fact. And: to say that ascriptions of A-determinations are significantly tensed, comes to the claim that certain states of affairs have A-determinations. Namely states of affairs of the type: *event e*'s *being past, present or future*, or alternatively: *that event e is past, present or future.*

But: ascribing A-determinations to such A-states-of-affairs seems to lead into an infinite regress. When we say that ascriptions of A-determinations are tensed, we have to say the same at each level. When I say that my 28th birthday's being past *is present*, I again make an ascription of an A-determination which is tensed. Again I can ask what kind of A-determinations is thereby ascribed. And so on. Smith, who is an A-theorist, for example concedes this regress[120], but he says that it is benign. Other A-theorists agree with the B-theorists that ascriptions of A-determinations are tenseless. They claim that the "is" for example in "is past" serves merely the purpose of predication and does not ascribe any A-determination to anything, see 3.2 and 3.4 below.

2.7 Conclusion

The above discussion shows that the most suitable candidates for bearers of A-determinations are events and times. Whether or not facts can have A-determinations, depends on what we take facts to be. I said that only on a non-standard account, which takes facts to be temporally indeterminate, can we say that facts can have A-determinations. To say of material objects that they have A-determinations, I argued, seems to require a non-standard reading of the existential quantifier. I further said that if A-determinations are properties of things, they are variable properties, that is properties which their bearers can gain or lose. But, as we will see in the next chapter, this leads to McTaggart's famous paradox which is designed to show that ascriptions of A-determinations involve a contradiction. Finally, when it comes to the question whether propositions can be the bearers of A-

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[119] Note that we cannot simply iterate ascriptions of A-determinations. They are predicates and therefor cannot be iterated. Compare: Dummett and Mellor do seem to think that they can be iterated, which to me is a category-mistake. See 3.4 below.

[120] Smith (1986b), see also 2.4 above and 3.4 below.

determinations, the answer depends on the preferred semantic theory of what we take propositions to consist of. And this topic is at least as hotly debated as the reality of A-determinations. We will see that the preferred semantics of temporal indexicals is cruicial, not only for the dispute between temporalists and eternalists, but also for the overall debate between A- and B-theorists.

3. Ontological Realism

In the ontological debate about Tense, the opponents are A-theorists and B-theorists. While A-theorists believe in a dynamic world, B-theorists believe in a static world. A-theorists claim that reality contains A-determinations (that A-determinations are satisfied), whereas B-theorists claim that reality does not contain A-determinations (that A-determinations are empty). All B-theorists claim that the future, the past and the present are equally unreal. A-theorists hold that at least one A-determination is real. Most A-theorists hold that only the past and the present are real while the future is not. Presentists are A-theorists who hold that only the present is real. The ontological debate concerning the past, present and future employs different sorts of arguments. Both A-theorists and B-theorists may put forward different kinds of reductionist claims. Most prominently in the ongoing debate, B-theorists try to show the unreality of A-determinations by reducing A-facts to B-facts. But, as I will argue, there is a general problem with arguments which employ reductionist claims. One of the most famous arguments against the A-theory of time originates in the writings of McTaggart. McTaggart's paradox aims to show that A-determinations are unreal because ascriptions of them involve a contradiction. If it were successful, it would be the strongest kind of argument against the A-theory. But few theorists are persuaded by it in its original form.

3.1 A-theorists

A-theorists hold an A-theory of time.[121] They believe that the A-series, which—following McTaggart—consists of an ordering of events (or

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[121] Prior, Smith, Ludlow, Tooley are A-theorists, but they hold different kinds of A-theories. I will not discuss all of the various A-theories here, but I will only present some of their main contentions.

something else) as past, present and future, is real. Since these A-determinations are variable, A-theorists claim that temporal reality is dynamic. But believing in the reality of the A-series can take various forms. A-theorists hold that reality contains the past, the future and the present. For most, this means that events (or other entities) really possess properties of being past, present and future.[122] But not all A-theorists believe that all A-determinations are equally real. Most A-theorists believe that while the present and past are real, the future is not.[123] This "neutralism" is often referred to as the common-sense view. It comes through in phrases like "the past is fixed, the future is not", "we cannot change the past, but only the future" etc. It is this asymmetry of the past and the future which the A-theorists, and only the A-theorists[124], can account for (see 3.5 below).

A prominent (symmetric) position amongst A-theorists is presentism, according to which only the present is real, and the past and future are not. There are two other symmetric views, quite unlike the presentist's[125]: First of all, the presentist's position is distinguished from the A-theorist's

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[122] I will not here consider again Prior's view according to which neither A-properties, nor events or times exist, see 1.4 above. I said above that it is difficult to make out what he takes the reality of the A-series to consist in.

[123] I do not know of anyone who would want to hold the converse: that only the future is real, but the past and present are not. Another not very promising asymmetric view (to conclude the list) is to hold that only the past is real, but the present and future are not.

[124] That the B-theorist cannot account for it, is often used as an argument against the B-theory of time. Tooley (1997) holds a very unique view on these matters. He claims that the world is dynamic because the future is unreal and hence undetermined. For him, this suffices to call himself an A-theorist. But interestingly, all the rest of his theory employs B-theory considerations. For example, he claims that A-facts can be reduced to B-facts (Tooley 1997, p. 378). He claims that A-determinations are empty. He claims that whatever happens happens at some time in the B-series. He argues that events get their dates (or come into existence) *when they take place* or *when they become actual*, but that they do not have them beforehand. If consistent, this view could also be adopted by B-theorists who want to claim that the future is unreal. See also 3.3 and 3.5 below.

[125] There is another symmetric view (converse presentism), but I do not know if anyone would endorse it: to say that only the past and the future are real, but the present is not. Maybe it could be argued that the present is somehow "too small" to be real: the present is just the boarderline between the past and the future, it is simply a *point* in time. But since a point does not have an extension, the present moment is too short for anything to take place at. Hence no (non-instantaneous) event etc. could have the property of taking place "now".

position according to which all A-determinations are equally real. And it is distinguished from the B-theorist's position according to which all A-determinations are equally unreal. The presentist thinks that the A-series is real (which makes him or her an A-theorist), but that only one of the A-determinations is satisfied, namely being present.[126] Presentism is a famous position because it is held by one of the most prominent A-theorists, Arthur Prior[127]. Quentin Smith and Peter Ludlow are also presentists, but their positions differ significantly from each other as well as from Prior's[128]. Smith for example claims (unlike Prior, see 1.3 above) that A-determinations are genuine properties. As a presentist, he thinks that there is only one genuine A-determination, namely presentness (Smith 1993, chapter 5.1).[129]

A-theorists also differ with respect to the question how fundamental the A-series is with respect to the B-series. I want to distinguish three general kinds of A-theorists. *Radical* A-theorists claim that the B-series cannot be real and that there cannot be any B-relations. *Reductionist* A-theorists claim that A-determinations are more fundamental than B-relations and thus "more real". They claim that the B-series can be reduced to the A-series. There are different kinds of reductionist views. One can also be expressed by a supervenience-claim: that the B-series supervenes on the A-series. *Moderate* A-theorists hold that both the A- and the B-series are real: events really have A-determinations, and they also satisfy B-relations. Their arguments are designed to show that the B-theory, according to which there are no A-determinations, is false because it has unwelcome consequences (see below).

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[126] On different kinds of presentism, see for example Tooley (1997) chapter 8.6. See also Ludlow (1999) pp. 148 f., who discusses a semantic (or verificationist) kind of presentism (see 4.2 and 4.4 below).

[127] See for example his (1970), where explicitly he says: "Indeed on my view [...] the present simply is the real considered in relation to two particular species of unreality, namely the past and the future" (Prior 1970, p. 245), citation by Peacocke (1999) p. 114.

[128] Smith (1993) part II; Ludlow (1999) p. xv and p. 100.

[129] He gives the following characterisation of his position: "Presentism is the theory that every possibly true sentence has presentness for a logical subject and that every state of affairs has presentness for a metaphysical subject" (Smith 1993, p. 133). This means that every A-sentence ascribes something to presentness, and that presentness is somehow part of every obtaining state of affair. I will not here discuss the details of this unusual approach.

Radical A-theorists claim that the B-series cannot be real, and that B-relations cannot be satisfied. Their argument is a conceptual or logical one. One such strategy would be to show that the B-series is incoherent. Radical A-theorists may try to establish for example that ascriptions of B-relations involve a contradiction. I know of no such attempt, and I doubt that it could be successful.[130] Alternatively, radical A-theorists may try to argue that there are no B-relations, because natural language does not contain expressions which are apt to signify them. They claim that there are no genuine tenseless sentences.[131] But as I said above, these kinds of arguments seem to involve a confusion between grammatical tense and ontological Tense, see 1.2 above.

Reductionist A-theorists claim that the B-series can be reduced to the A-series.[132] They do not in fact claim that the B-series is unreal, but that it is superfluous. Reductions can be achieved in different ways. Ontological reductions procede by showing that entities of type x are really entities of type y. Semantic reductions procede by showing that sentences about x can be translated by sentences about y. Reductionist A-theorists either try to reduce B-relations to A-determinations, or they try to show that B-sentences can be translated by A-sentences. Take for example the B-sentence:

F: Peter's wedding is earlier than his 20th birthday-bash.

Reductionist A-theorists of the ontological kind claim that the B-relation that holds between Peter's wedding and his 20th birthday can be reduced to A-determinations which apply to these events. One way to show this, is to claim that this B-sentence has A-truth-conditions. In our case for example: (F) is true if and only if Peter's wedding being earlier than his 20th birthday-bash is past, present or future. This strategy is not without problems, as we will see below.[133]

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[130] But compare the radical B-theorists' claim that ascriptions of A-determinations involve a contradiction, see 3.2 above and 3.4 below.

[131] Teichmann (1998), and see 1.1 above.

[132] See for example Priest (1986) and (1987).

[133] Compare Mellor's new B-theory, 3.2 below. See also 3.1 above on disjunctive A-properties.

Reductionist A-theorists of the semantic kind on the other hand claim that reality can be completely described using A-language only. The B-sentence (F) for example can be translated by the A-sentence (G).[134]

G: Peter's wedding is past and his 20th birthday-bash is present, or

Peter's wedding is present and his 20th birthday-bash is future, or

Peter's wedding is more past than his 20th birthday-bash, or

Peter's wedding is less future than his 20th birthday-bash.

This reduction is not satisfactory though. First of all, (G) is an awfully complex sentence. But what speaks against the reductive claim is that parts of it look like B-sentences after all: The B-theorist may claim that for example "Peter's wedding is more past than his 20th birthday-bash" means no more than the B-sentence "Peter's wedding is earlier that his 20th birthday-bash". That such semantic reduction is generally problematic as a strategy, I will discuss below.[135]

A-theorists who hold a *supervenience*-claim maintain that B-relations exist only in a derivative kind of way. They hold that B-relations depend in their existence on certain A-determinations. According to the standard account of supervenience[136], to say that B-relations supervene on A-determinations, is to say that any difference in A-determinations implies difference in B-relations, but not vice versa. Two events may share the same B-properties without having the same A-determinations, but not vice versa.[137] This claim is similar to the ontological reductionists' one, see above. But to me it seems that the notion of supervenience is not much

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[134] As with all semantic reductions (translations), they are symmetric and hence can be used in both directions. See also 3.2 below.

[135] Compare eliminativist eternalists, 2.5 above; and traditional B-theorists, 3.2 below.

[136] See for example Blackburn (1985); McFetridge (1985).

[137] For example, both e1 and e2 are earlier than e3. But while e1 is past, e2 is present. But it is not so clear how the supervenience-claim is to be understood. Compare the B-theorist version of the supervenience-claim, which concerns A- and B-truth-conditions, see 3.2 below.

clearer than the notion of ontological reduction. I will come back to this point below, see 3.2.

Finally *moderate* A-theorists claim that both A-determinations and B-relations are real. But they maintain that the B-theory (which holds that A-determinations are not real) is false because it has unwelcome consequences.[138] For example it may be claimed that the B-theory does not allow for a coherent account of change, causation and the direction of time.[139] Or it may be claimed that the B-theory, since it treat all Tenses as equally real (see above), entails determinism. And since determinism may be taken to imply fatalism, the B-theory is false (see 3.5 below). Still others argue that the B-theory is incompatible with modern physics and should therefore rejected (see 3.6 below). As it will become clearer in the following chapters, most A-theorists are moderate A-theorists. But often their positions are not so clear-cut. The same, as we will shortly see, applies to the B-theorists.

3.2 B-theorists

B-theorists[140] subscribe to a B-theory of time. They give priority to the B-series, the ordering of events as earlier or later. Since B-relations are stable, B-theorists claim that temporal reality is static in nature. They claim that the A-series is a myth, and that nothing really possesses A-determinations. To B-theorists, the past, present and future are equally unreal.[141] But B-theorists may hold differently strong views concerning the question how fundamental the B-series is with respect to the A-series. Similar to the distinctions among A-theorists, I make out three general kinds of B-

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[138] I will not here discuss all of their arguments, but only hint at what these theorists have in mind.

[139] For discussion see Tooley (1997) chapter 8.1; Teichmann (1995) chapter 6; Shoemaker (1969); or Mellor (1998a) chapter 8.

[140] Russell, Mellor, Oaklander, and LePoidevin are B-theorists, but they hold different kinds of B-theories. I will not discuss each of their positions in detail, but I will only present some of their main tenets.

[141] This means that B-theorists cannot account for the alleged asymmetry between the past and the future, see 3.1 above and 3.5 below.

theorists. *Radical* B-theorists claim that the A-series cannot be real and that all A-determinations have to be empty. *Reductionist* B-theorists claim that A-determinations can be reduced to B-relations. Again, there are different kinds of reductionist claims. They can also be expressed by claiming that A-determinations supervene on B-relations. *Moderate* B-theorists finally claim that the A-theory, according to which A-determinations are satisfied, is false because it has unwelcome consequences.

Radical B-theorists claim that the A-series cannot be real. Their argument is a logical or conceptual one. McTaggart famously argues that the A-series is unreal, because ascriptions of A-determinations involve a contradiction.[142] Since his argument is the starting-point of the contemporary debate concerning the reality of Tense, I will discuss it in detail below, see 3.4.

Reductionist B-theorists try to reduce the A-series to the B-series, or A-determinations to B-relations. They do not in fact claim that the A-series is unreal, but only that it is superfluous[143]. This reduction can be ontological or semantic. Semantic reductionism involves the claim that A-sentences can be translated by B-sentences, and that reality can be completely described using B-language only. Take for example the A-sentence

H: Peter's 20th birthday-bash is past.

The semantic reduction suggests that (H) can be translated by the B-sentence

G: Peter's 20th birthday-bash is earlier than time t.

where t is the time of utterance of (H). This semantic reductionist claim is held by early B-theorists like Russell[144]. But it is rejected by new B-theorists like Mellor and others[145], who instead subscribe to the "new B-theory of time".

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[142] See McTaggart (1927).

[143] But not all reductionist B-theorists seem to notice that reduction does not mean elimination. See for example Mellor, 3.4.1 and 3.4.2 below.

[144] Russell (1903) and (1906); see also Quine on "eternal sentences" (1960).

[145] Mellor (1982) and (1998a); Oaklander (1992) and (1994); Le Poidevin (1991a).

New B-theorists are convinced by the argument from the essential indexical (see 2.5 above) which shows that A-sentences cannot be translated by B-sentences. According to the new B-theory, there can be an ontological reduction without a semantic one.[146] Here the reduction procedes via facts alias truth-makers of A-sentences: it is claimed that true A-sentences are made true by B-facts (see 3.4.1 below). Take again the A-sentence

    H: Peter's 20th birthday is past.

If (H) is true, it is made true by the B-fact that Peter's 20th birthday is earlier than t, where t is the time of (H)'s utterance. This means that the A-sentence (H) has the same truth-conditions as the B-sentence

    G: Peter's 20th birthday is earlier than time t.

where t is the time of utterance of (H). And if they are true, (H) and (G) are made true by the same B-fact. I will discuss this position in more detail below, when I turn to Mellor's interpretation of McTaggart's argument, see 3.4.1 and 3.4.2.

Some B-theorists suggest that A-determinations do not exist mind-independently, but that they are only "psychologically" real[147]. They concede that A-determinations do *somehow* exist, but that they are not, so to speak "in the world", but rather only "in our heads". These B-theorists may be classified as making a *supervenience*-claim: namely that A-facts supervene on B-facts. This is explicitly claimed by some B-theorists who also characterise the entire debate in these terms.[148] To say that A-facts supervene on B-facts, is to say that change in B-relations implies change in A-determinations, but not vice versa. Two sentences may have the same B-truth-conditions without having the same A-truth-conditions, but not vice versa. I will argue below (3.4.2) that this claim depends on what we take to

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[146] Concerning the different types of reduction and whether one is tenable without the other, see 3.4 below. For general discussion see also Hogan (1996) and Healey (1981).

[147] Mellor (1998a), Bennett (2000). See also 5.4 and 5.5 below.

[148] Tooley (1997); and LePoidevin (1991a) introduction; Mellor on the other hand nowhere characterises his view like this, even though it might make good sense.

be the truth-conditions of A-sentences, and particularly, whether we consider sentence-types or sentence-tokens.

Finally, moderate B-theorists claim that the A-theory is false because it has unwelcome consequences. For example it can be claimed that the A-theory is incompatible with modern physics. Surprisingly, moderate A-theorists may make the reverse claim, namely that modern physics is incompatible with the B-theory, see 3.1 above. Below I will argue that for several reasons, such arguments from physics are seldom conclusive, see 3.6 below.

3.3 A-Theory vs B-Theory, and Eternalism vs Temporalism

How does the distinction between eternalism and temporalism bear on the debate between A-theorists and B-theorists? Above I said that eternalists and temporalists have different views about the meanings of A-sentences (see 2.5 above). These views are tied to certain conceptions concerning the make-up of (A-) propositions (see 2.5.2 above). A- and B-theorists too need some account of what kinds of propositions (A-)sentences express. As we saw above, different kinds of reductionist A- and B-theorists explicitly use arguments which involve meanings and truth-conditions of A- and B-sentences (see 3.1 and 3.2). But how does this bear on the question whether truth is a stable or variable property of propositions? As I will argue, the relation between eternalism vs temporalism on the one hand, and A-theorists vs B-theorists on the other, is not one to one. The following is an attempt to sort it out.

There is only one point where the two kinds of theoretical distinctions clearly overlap. As should be clear from what I said above, *eliminativist eternalism* is an ingredient of what, in the ontological debate about Tense, is put forward by the *traditional B-theorists*, who hold a semantic reductionist claim (see 3.2 above). They claim that all B-sentences can be translated by A-sentences (see 2.5.1).[149] It is not surprising that in both debates, this position is notoriously attributed to the same philosopher

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[149] Again note that such semantic reductions are problematic, because translation is a symmetric relation, see 3.2 above. If B-sentences can be translated by A-sentences, A-sentences can also be translated by B-sentences.

(namely Bertrand Russell).[150] As I said above, it is now a commonplace in both debates, that this position is not tenable. It is refuted mainly by the argument from the "essential indexical" as set out by Perry and others (see 2.5 above).

How does *non-eliminativist eternalism* relate to the issue between A-theorists and B-theorists? As mentioned above, eliminativist eternalists and traditional B-theorists coincide. But not all eternalists are eliminativists, and not all B-theorists are traditional. The so-called "new theory of time"[151] is held by *new B-theorists* (like Mellor, Oaklander, or LePoidevin) who—persuaded by the argument from the "essential indexical"—concede that A-sentences do *not* express the same propositions as B-sentences. At the same time they argue that the *semantic* irreducibility of temporal indexicals does *not* imply that *reality* contains any irreducible A-determinations, or that A-determinations are really satisfied. The new B-theorists are "ontological" reductionists but not semantic reductionists about the past, present and future (see 3.2 above). They claim that A-sentences express A-propositions, but that they (if true) are nevertheless made true by B-facts. That is, even though A-sentences do not have the same meanings as B-sentences, they nevertheless have the same kinds of B-truth-conditions. It is interesting to note that here, meanings and truth-conditions clearly come apart. This means that this view precludes a truth-conditional semantics. But at the same time it seems to depend on substantial ontological assumptions about what—in the world—*makes* sentences true, see 4.1 and 5.3.3 below.

Clearly new B-theorists and non-eliminativist eternalists have something in common. They both accept the semantic irreducibility of temporal indexicals, i.e they both reject a semantic reduction from A-sentences to B-sentences. Both claim that A-sentences express A-propositions. But what is the new B-theorists' stand on the truth of such A-propositions? Do they claim that A-propositions have stable or variable truth-values? That is, do they claim that these A-propositions are complete or incomplete (see 2.5.1 above)? Are new B-theorists temporalists or non-

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[150] Smith (in Oaklander & Smith (1994) p. 18) also mentions J. J. Smart, Hans Reichenbach and Nelson Goodman; Künne (CT) mentions Quine.

[151] Which according to Smith (in Oaklander & Smith 1994, ip. 18) was developed as a consequence from the insights of new theories of reference, especially the direct reference account of indexicals, see 2.5.1 above.

eliminativist eternalists? While non-eliminativist eternalists (qua being eternalists) claim that A-propositions are complete, temporalists claim that they are incomplete. New B-theorists seem to have an option here. My impression is that they can be both temporalists or eternalists. The new B-theorists in the literature do not seem to take an explicit stand on this matter.

We should not forget that A-theorists and B-theorists are engaged in an *ontological* debate, hence they first of all disagree over the ontological question of what in the world makes A-sentences true. For Mellor[152], it seems unproblematic to agree completely with the A-theorists about the *semantics* of A-sentences insofar as A-sentences express A-propositions (RT2 chapter 6.1). Moreover Mellor seems to suppose that all A-propositions are incomplete and have variable truth-values. This means that Mellor is a new B-theorist who opts for temporalism. But Mellor simply seems to overlook the possibility of being a non-eliminativist eternalist. He thinks that to claim that A-sentences express complete propositions begs the question against the A-theorist, because Mellor assumes that all A-theorists have to believe that A-sentences express incomplete A-propositions (RT2 chapter 3.1).[153] Also Mellor thinks that taking A-sentences to express complete propositions, implies that understanding an A-sentence requires that one always knows what time it is (TR2 p. 59). This of course is false if we take A-sentences to express complete A-propositions. But Mellor seems to assume that all complete propositions are B-propositions. But this, as we know, is false as well. As I said above, new B-theorists, by opting for non-eliminativist eternalism, can claim that A-sentences express complete A-propositions with stable truth-values. That the same applies to the A-theorists, I will argue below.

Now how does *temporalism* relate to the debate between A-theorists and B-theorists? *A-theorists* generally hold that reality contains irreducible A-determinations, or that A-determinations are satisfied. This is more than just the semantic claim from the essential indexical. I said above that this semantic irreducibility of A-language is now agreed on all sides. A-

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[152] Mellor's "Real Time II" (1998a) is the updated version of his classic "Real Time" (1981a). I will henceforth call it "RT2".

[153] But as I will argue below, this assumption is not correct.

theorists make an ontological claim: A-determinations, they claim, are indeed properties which are possessed by events, persons, facts, times or whatever (see 3.1 above). Interestingly, the most prominent A-theorist coincides with one of the most famous temporalists: Arthur Prior, the inventor of tense-logic.[154] But I will argue that the relation between temporalists and A-theorists is not one to one. One can easily be a temporalist without being an A-theorist, and vice versa. Some temporalists may not be A-theorists because they do not want to make any ontological claims about the reality of A-determinations at all. Other temporalists may accept a B-theory of time. As I said above, some new B-theorists (like Mellor) seem to be temporalists.

But are all A-theorists temporalists? As I said above, Mellor believes that all A-theorists are temporalists because they hold that A-sentences express A-propositions which have shifting truth-values. The A-sentence "It is raining in London" for example expresses the same incomplete A-proposition at all times. It may be true at some times and false at others. Now as I said above, both the A-theorists and B-theorists can agree with the temporalists about the semantics of A-sentences. They can both agree that A-sentences express such incomplete A-propositions. But they may equally both agree with the non-eliminativist eternalists who claim that A-sentences express complete A-propositions with stable truth-values. Where A- and B-theorists disagree is when it comes to ontological claims concerning the truth-makers of true A-sentences. B-theorists say that true A-sentences are not made true by A-facts, but by B-facts. Here the truth-makers of true A-sentences and the A-propositions which they express, clearly come apart. Similarly with the A-theorists. According to them, there are genuine A-facts which are the truth-makers of true A-sentences. For example, if "It is raining in London" is true, it is made true by the A-fact *that it is raining in London*. But this does not necessarily mean that this A-fact is closely related to the A-proposition which the sentence expresses. While the A-fact is temporally indeterminate, the A-proposition may be temporally determinate or it may be temporally indeterminate. In the first case, the A-theorist is a non-eliminativist eternalist, and in the second case, she is a temporalist.

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[154] As I noted earlier, Prior's holds a non-standard A-theory, because he does not claim that there are genuine A-properties, see 1.4 above.

I have compared two pairs of dichotomies: Temporalism vs eternalism and A-theory vs B-theory of time. I said that the relation is not one to one. The only strict connection is between traditional B-theorists and eliminative eternalists. New B-theorists can be both temporalists and non-eliminative eternalism. The latter is seldom considered by them, and I argued that it requires a sophisticated account of the make-up of A-propositions. (Against Mellor) I argued that A-theorists too, can be both temporalists and non-eliminativist eternalists. The reason why there is no one to one relation, is because both A- and new B-theorists hold ontological claims about the truth-makers of true A-sentences. And in both cases, I said, the truth-conditions of A-sentences and their meanings can come apart.

3.4 McTaggart's Paradox

McTaggart's famous argument for the unreality of Tense (or time) is designed to prove that the past, present and future cannot be real.[155] McTaggart argues that reality cannot contain A-determinations, because ascriptions of them involve a contradiction.[156]

> "Past, present and future are incompatible determinations. Every event must be one or the other, but no event can be more than one. [...] But every event has them all. If M is past, it has been present and future. If it is future, it will be present and past. If it is present, it has been future and will be past. Thus all the three characteristics belong to each event. How is this consistent with their being incompatible?" (McTaggart 1927, p. 32)

McTaggart distinguishes the A-series from the B-series. A-determinations are positions in the A-series, an ordering of events as past, present and future. McTaggart sets out to show that the A-series involves a contradiction. Roughly the proof goes like this: According to the A-theory, events have A-determinations: they are present, past or future. These properties are incompatible: an event which is present cannot be past, and an event which is past, cannot be future, etc. But nevertheless, each event

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[155] McTaggart (1927).

[156] According to what I said above, McTaggart is a radical B-theorist, see 3.2 above.

has all A-determinations: as time passes, each event is future, present and past. Hence it has incompatible properties. But since nothing can have incompatible properties, A-determinations cannot be satisfied.

McTaggart then goes on to conclude that since the A-series is necessary for explaining change, and since change is crucial for time, time itself must be unreal.

> "The reality of the A-series, then, leads to a contradiction, and must be rejected. And, since we have seen that change and time require the A series, the reality of change and time must be rejected." (McTaggart 1927, p. 34)

This further argument for the unreality of time can be separated from the argument for the unreality of Tense. Few B-theorists follow McTaggart in this further conclusion. Mellor for example develops a "B-theory of change" which does not depend on the reality of A-determinations (RT2 chapter 8). Here I will not discuss the matter of change and its relation to time and Tense. I will concentrate on Taggart's argument for the unreality of A-determinations as stated above.

There are numerous ways of stating McTaggart's paradox, and there is a vast amount of literature on it which defends or attacks its general ideas.[157] Naturally I cannot rehearse all of this here. I will only discuss one obvious sort of response to the puzzle (which McTaggart addresses himself, p. 32) as well as its treatment by other B-theorists. The obvious response is: Ascriptions of A-determinatios are not incompatible at all, because when we say that an event cannot have different A-determinations, we mean that it cannot be past, present and future *at the same time*. But this is perfectly compatible with saying that each event has all A-determinations. Namely, it has all A-determinations *successively*: an event is first future, then present, and then past. And since there is no incoherence involved in this, A-determinations may very well be real.

This response is endorsed, modified or attacked by different theorists. McTaggart himself argues that it leads into an infinite regress: Granted, there is no incoherence in saying that an event e is present at time t, past at

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[157] For discussion see Broad (1938a); Dummett (1963); D.H. Mellor (1998a) chapter 7; Quentin Smith (1986b) and (1989); see also the debate between Lowe and Le Poidevin & Mellor in Mind 96 and Mind 102.

t2 and future at t3. But to say that e is present at time t, means that t itself may be present, past and future. Now the incoherence is on the level of times. Each time t has all A-determinations, and they are incompatible.[158] One can of course play the game again and say that e is present at t and that t is past at t3, and so on. But here we again have to concede that t3 is past, present and future. And this leads into an infinite regress.

Dummett[159] agrees with McTaggart that the obvious response cannot resolve the incoherence because it only pushes it up one level. But he gives an alternative account of the regress: he observes that ascriptions of A-determinations may themselves be tensed (see 2.6 above). That an event e *is now* present, is of course compatible with the facts that it *was* future and that it *will be* past. But it is *not* compatible for example with the facts that e *is now* future and that e *is now* past. But these A-determinations are also properties of e, since each event has all A-determinations. This shows that there are in any case some A-determinations of events which are incompatible with each other.

Dummett claims that predicates like "was future" can be analysed as complex predicates like "future in the past".[160] Dummett here treats ascriptions of A-determinations as predicates which can be iterated. This is quite strange because predicates are not the sorts of things which can be iterated. In this they differ for example from operators.[161] He says that each event has three "first order", nine "second order" A-determinations, etc.[162] But his version of McTaggart's argument shows that it does not help to ascend to more complex A-determinations: There are at each level some A-

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[158] See 2.1 and 2.4 above, where both events and times are discussed as possible bearers of A-determinations.

[159] Dummett (1963).

[160] Two things need to be noticed here: first, Dummett claims that this is McTaggart's way of stating the case. This is not quite true, since McTaggart analyses "was future" as "is future at some past time", which involves reference to *times*. Secondly, it is interesting that Dummett supresses the copula: "future" by itself is no predicate and neither is "past in the future". Hence the question remains whether the ascription of these A-determinations is really tensed or tenseless. See also 2.6. above.

[161] The tense-operators in tense-logic can synatctically be iterated to form complex tenses, see 1.4 above.

[162] Dummett (1963) p. 498.

properties of events which are incompatible with each other. And this proves that the A-series is incoherent. Dummett's analysis shows that syntactic ascent does not imply semantic ascent. Many of the higher-level A-determinations are logically and semantically equivalent with certain first-order A-determinations. "Now in the past" for example comes to the same as "in the past". It follows that if there is a contradiction on the first level, the same contradiction reappears on the higher levels.

Not all theorists are persuaded by McTaggart's argument and by the responses to the obvious response. Some argue that there is no incoherence in the first place and thus no infinite regress. The idea is that tensed predicates do not ascribe A-determinations at all. They are at best "grammatical predicates" which can be eliminated by the use of tensed verb-forms or tense-operators. Famously Prior argues that all A-sentences can be analysed by means of present-tense sentences, preceeded by tense operators (see 1.4 above). Unlike predicates, operators do not signify properties. Hence A-sentences do not commit us to an ontology of A-determinations. And if there are no A-determinations, there obviously can be no incoherence and no infinite regress of ascriptions of them.[163]

Smith (1986b) on the other hand argues that there is no incoherence, but he nevertheless concedes that there is an infinite regress of ascriptions of A-determinations. But, he argues, since there is no incoherence in the first place, the regress is not vicious but "benign"[164]. There is no incoherence if A-determinations are ascribed like this (where the ascriptions are themselves tensed):

> Either an event e is future, will be present and will be future; or e is present, was future and will be past; or e is past, was present and was future.

None of these triads contains a contradiction, and neither does the disjunction. Against this it might be argued that one could always ask: *when* is e present, etc.? If we at this point invoke times, we get an infinite regress (see above): To say that e is present *at t* does not help because t

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[163] See Smith (1986b, p. 188) who criticises this view.

[164] For the latter view, see Quentin Smith (1986b) pp. 191 f. He compares A-determinations with other so-called reflexive properties, like identity and difference, which involve a similar infinite regress.

may have incompatible A-properties. If we on the other hand invoke tensed ascriptions of A-determinations, this leads to an infinite regress: If we say that e's being present is present, we can again be asked to specify *when* this is so, ad infinitum. But Smith does not see a problem with this regress or with saying that that e is present implies that e's being present is present, and that the being present of e's being present is present, and so on. He says that "e is present" means:[165]

> "Presentness presently inheres in e and in its own inherence in e and in its inherence in e [...] ad finitum." (Smith 1986b, p. 185)

> "The correct explication of 'e is past' is: e is past, and the being past of e is present, and the being present of the being past of e is present, and so on, infinitely. An analogous complete explication is given to 'e is future.'" (Smith 1986b, p. 187)

Smith concedes that there is an infinite regress of ascriptions of A-determinations, but since there is no incoherence at any level, the regress is not vicious. Smith says: "A contradiction is produced only if one stops somewhere in this regress" (Smith 1994, p. 178). Of course Smith recommends that one should never stop. But what does it mean never to stop? As we will shortly see, for Mellor[166], this "is tantamount to admitting that the original sentence-type has *no* tensed truth condition, that is, cannot be made true or false by any tensed fact such as that e is past, e is now past, e is now now past, and so on" (UT p. 56).

3.4.1 Mellor on McTaggart's Proof 1

Mellor is convinced that McTaggart succeeds in proving that the A-series is incoherent and hence that Tense is unreal. Mellor believes that ascriptions of A-determinations involve an infinite regress which is vicious: as soon as one stops anywhere in this regress, one has to admit that the event in

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[165] To talk of sameness of meaning here is dangerous, because the two sentences are hardly synonymous. Later Smith concedes that the latter is implied by the former (Smith 1994, p. 178).

[166] Mellor (1981c), which I henceforth call "UT", is a revised version of chapter 6 from his classic "Real Time" (Mellor 1981a).

question has incompatible A-determinations (UT p. 56). But unlike Smith (see above), Mellor does not think that it is a good solution never to stop.

Mellor's account of McTaggart's proof and of its defence against the obvious reply is similar to Dummett's (and differs from McTaggart's in the same way): Mellor represents "e is past" as "Pe", "e is future" as "Fe" and "e is present" as "Ne" (UT p. 51). He says that "e" is to stand for an individual event. "P", "F" and "N" are predicates which stand for properties. Ascriptions of them to events can be iterated. "E was future" for example becomes "Pfe", and so on. Here Mellor commits the same syntactic error as Dummett, because, as I said above, predicates are not the kinds of things which can be iterated. Note: these predicates are not to be confused with the operators which are used in tense-logic. In tense-logic, "Fp" for example means "it will be the case that p", where "p" is to be replaced by a present-tensed sentence. But Mellor does not think that this difference is important. He says that in tense-logic, this is "tantamount to regarding P, N and F as properties, not of events, but of tensed facts" (UT p. 53). This will certainly be disputed by tense-logicians like Prior who claims that one of tense-logic's merits is that it does not invoke A-properties at all (see 1.4 above).[167]

According to Mellor, McTaggart's argument is this: even though P, N and F are mutually incompatible, each event has all of these properties. The obvious reply has it that no event has P, N and F *at once*. The incompatibility disappears once it is stated *when* e has these properties. For example, if e is present (Ne), it was future (PFe) and will be past (FPe): And N, PF and FP are perfectly compatible (UT p.52). The defence of McTaggart's argument against the obvious reply goes like this: it does not help to ascend to the level of more complex A-determinations, because each event has all of those too. And many of them are mutually incompatible, for example PP and FF, etc. Hence the A-series is incoherent and A-determinations cannot be real.

Mellor briefly deals with the complaint that his symbolism supresses the grammatical tense of the verb "is", for example in "e is past", and thus begs the question against the A-theorist (UT pp. 54 f.). The crucial question is: are ascriptions of A-determinations tensed or tenseless (see 2.6 above)? It

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[167] Also Mellor's account of (tensed) facts can be disputed (see 2.2 above).

can be argued that there is an incoherence only if these ascriptions are interpreted as tenseless. But can we simply presuppose that such predication is logically tenseless and that we can safely ignore the relevant verbal tenses? Mellor argues that verbal tenses are often redundant (UT p. 55).[168] They are made redundant by certain adverbs, phrases like "yesterday", "last year" etc. as well as by his "P", "N", and "F". Hence he thinks we do not need to bother with the grammatical tense of "is". Instead we should see it as serving merely the purpose of predication. Mellor furthermore claims that *tensed* ascriptions of A-determinations involve an infinite regress: To say that e is past would mean that e is now past. But this would again mean that e is now now past, etc. (UT p. 55). Unlike Smith, Mellor thinks that this regress is vicious and not benign, see above.

Mellor believes that McTaggart succeeds in conclusively proving the unreality of Tense once and for all. But since there are still A-theorists who are not convinced by McTaggart's argument, he gives yet another version of it. It makes use of "the now standard account of the tenseless token-reflexive truth-conditions of tensed thoughts and sentences" (UT p. 50).[169] The idea is that we can state in B-terms what makes A-sentences true. And since we do not need to invoke A-facts or A-determinations when we say what makes A-sentences true, the A-series is unreal. I will argue that this argument—unlike McTaggart's original version—cannot prove that A-determinations cannot be real. At most, it can show that A-determinations are superfluous.[170]

Take an A-sentence like "e is past", where "e" stands for a particular event. What are its truth-conditions? For Mellor, truth-conditions are truth-

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[168] But redundancy of course does not imply that tensed ascriptions of A-determinations involve a contradiction. My impression is that here, Mellor does not properly distinguish between grammatical tense and ontological Tense (even though he always ascribes this mistakes to his opponents, see 1.2 above).

[169] Note that Mellor wrote this in 1981 and revised it in 1993. I am not so sure that Mellor's token-reflexive account was then or at any time the "standard" one. Instead Davidson's account of stating the truth-conditions of indexical sentences has been standard since the late 1960s (see Davidson 1967). Interestingly, Mellor's later "date analysis" (Mellor 1998a) is very similar to it, see 3.4.2 below. But suprisingly, Mellor nowhere mentions Davidson.

[170] According to my differentiation, this makes Mellor a reductionist B-theorist, see 3.2 above. But Mellor of course sees himself as a radical B-theorist.

makers; they are the facts which make sentences true (RT2 p. 3).[171] Note that Mellor does not distinguish between truth-conditions and truth-makers. This is problematic, because it should be clear that while all declarative sentences have truth-conditions, only the true ones have truth-makers. Maybe we can say that all truth-conditions are states of affairs, and that only those which obtain are facts. According to Mellor, we can distinguish truth-conditions in two ways: first there are token-reflexive and non-token-reflexive truth-conditions[172]; and second there are A- and B-truth-conditions. These two pairs are systematically connetcted. Ultimately Mellor tries to show that A-sentences have B-truth-conditions which are token-reflexive.

First we need to distinguish between sentence-types and sentence-tokens. "E is past" is a sentence-type which—when uttered at different times—has various tokens. Prima facie, both sentence-types and sentence-tokens can have truth-conditions, and it is crucial to make explicit which of the two one is talking about[173]. What is the relation between the truth-conditions of a sentence-type and those of its tokens? This is relatively easy to say in the case of indexical-free B-sentences. Here the truth-conditions of a sentence-type coincide with those of its tokens. But the relation is more complicated in the case of sentences which contain indexical elements, in our case, A-sentences, see below.

What are token-reflexive truth-conditions? As we know from Reichenbach, it is unusual suppose that something like truth-conditions (which for Mellor are facts in the world) can be token-reflexive. It makes

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[171] In any case it is clear that on Mellor's account, truth-conditions are distinct from meanings. I will say more about this point below. Also: in supposing that true sentences are *made true* by certain facts, Mellor accepts a substantial correspondence-theory of truth. For discussion see 4.1 and 5.3.3 below.

[172] The term "token-reflexive" might be a bit misleading here. Reichenbach who introduces this term, uses "token-reflexive" for expressions, never for something like truth-conditions (Reichenbach 1947). He claims that all indexical expressions are ultimately eliminable by "this" which refers to the utterance of which it is a part. "Peter has now tooth-ache" for example can be interpreted as "The time of this utterance is when Peter has tooth-ache". Reichenbach specifies truth-conditions of indexical sentences like this: for all tokens x of "Peter has now tooth-ache": x is true iff (if and only if) there is a time t, such that x is produced at t, and Peter has tooth-ache at t.

[173] This is something which Mellor himself sometimes neglects.

better sense to say that certain expressions or *descriptions* of truth-conditions are token-reflexive, because expressions, unlike facts, are linguistic entities. We can say that token-reflexive truth-conditions are truth-conditions whose descriptions contain expressions which stand for tokens of the sentences in question. More specifically, the right-hand side of the biconditional which states these truth-conditions, quantifies over sentence tokens. Finally, note that only sentence-tokens can have token-reflexive truth-conditions.[174] For example

> for all tokens x of "I am rich", x is true iff x is produced by someone who is rich

The right hand side of the biconditional contains a bound variable "x" which is a placeholder for a token of that sentence which is quoted on the left hand side.

What are non-token-reflexive truth-conditions? They are truth-conditions whose descriptions do not contain any expressions which stand for tokens of the sentences in question. The right-hand sides of the biconditionals which state those truth-conditions, do not quantify over tokens. Both sentence-types and -tokens can have non-token-reflexive truth-conditions. For example, the sentence-type as well as any token of "Snow is white" is true iff snow is white.

Prima facie, sentences which do not contain any indexical expressions (for example "Snow is white") have non-token-reflexive truth-conditions. The question is whether sentences which do contain indexical expressions (for example "I am rich") can have non-token-reflexive truth-conditions.[175] Here we are interested in A-sentences, that is, sentences which contain temporally indexical expressions which signify A-determinations. Their token-reflexive truth-conditions naturally involve quantification over *times*, more specifically the time at which the token in question is produced. But can they have non-token-reflexive truth-conditions as well?

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[174] This point is nowhere explicitly mentioned by Mellor.

[175] One and the same sentence-token can have *both* token-reflexive and non-token-reflexive truth-conditions.

A-theorists argue that A-sentences have A-truth-conditions, and B-theorists deny this. What are A-truth-conditions? As Mellor nowhere really defines them, this is my attempt:[176]

> (DEF) A-truth-conditions are truth-conditions which can only be stated by using A-sentences, that is, sentences which ascribe A-determinations to something.

For example "e is past"—as a sentence-type—has the following A-truth-conditions:

> "e is past" is true iff e is past.

What about the A-truth-conditions of sentence-tokens? Mellor claims that, according to the A-theory, all tokens of an A-sentence-type have the same A-truth-conditions[177]:

> "All tokens of the same tensed type are supposed to have the same *tensed* truth-conditions, however much their tenseless truth-conditions may vary from token to token." (UT p. 56)[178]

 For example

> at t1 a token f of "e is past" is true iff e is past

and

> at t2 a token g of "e is past" is true iff e is past

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[176] As I said above, Mellor identifies truth-conditions with facts (or states of affairs). This means that for him, A-truth-conditions are A-facts, and B-truth-conditions are B-facts. But note that this presupposes a non-standard account of facts, which Mellor indeed holds, see 2.2 above.

[177] This is something which I will dispute below. Compare: Mellor also believes that all A-propositions are incomplete and have variable truth-values. This I disputed above, 3.3. But of course, on Mellor's account, truth-conditions alias facts are not identical with meanings (propositions) anyway, see above. He nevertheless seems to confuse them now and then, see below.

[178] Here Mellor still uses "tensed type" for "A-sentence type", and "tensed truth-conditions" for "A-truth-conditions", and "tenseless truth-conditions" for "B-truth-conditions".

etc. Here both tokens have the same A-truth-condition as the original sentence-type. That they are produced at different times, does not mean that their truth-conditions differ. How are we to understand the right hand side of the biconditionals? Is the "is" tensed or tenseless? Mellor would say that it is tenseless (see above). But clearly most A-theorists would hold a different view on this matter (see 3.1 above).[179] According to Mellor's reconstruction of the A-theory, there is only a single A-fact (that e is past) which makes all (true) tokens of "e is past" true. It is the same fact which makes the sentence-type true. How plausible is this? It does not seem very plausible at all, and one should wonder if any A-theorist would actually subscribe to such a view. Below I will try to show that they need not do so.

Mellor has no difficulty showing that of course it is *not always* a fact that e is past (UT pp. 56 f.). There are also times at which e is present and times at which it is future. Thus there are tokens of "e is past" which are false. These are the tokens which are located before or at the occurrence of e. Mellor says that the truth-value of tokens of "e is past" depends on their temporal location.[180] Hence there can be no single A-fact which makes all tokens of "e is past" true. Now the A-theorist is allegedly faced with the following two incompatible claims: On the one hand she claims that all tokens of an A-sentence-type have the same A-truth-conditions. But on the other hand, she has to acknowledge that some tokens are true while others are false. -What about the sentence-type then? It seems that the sentence-type would have to be both true and false, and hence have incompatible truth-values. Mellor concludes that giving A-sentences (types or tokens) A-truth-conditions involves a contradiction (UT p. 57). Now this is supposed to be Mellor's alternative version of McTaggart's proof of the incoherence of the A-series and the unreality or A-determinations.

The above account of A-truth-conditions involves only non-token-reflexive truth-conditions. What about *token-reflexive A-truth-conditions*? Can they help the A-theorist? Mellor thinks that they cannot. He claims that all token-reflexive truth-conditions are ultimately B-truth-conditions (UT p.

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[179] See for example Smith (1986b).

[180] This is why he thinks that the proper truth-conditions of A-sentences should be token-reflexive.

58). Take for example the token-reflexive truth-conditions of the following A-sentence:

> for all tokens x of "e is past" x is true iff there is a time t such that
> x occurs at t, and e is past at t

Does the right-hand side of this biconditional state A-truth-conditions or B-truth-conditions? Is it an A-sentence or a B-sentence?[181] Mellor says that "e is past at t" is not an A-sentence but a B-sentence. He claims that "e is past at t" can be analysed as "e is earlier than t", and the latter is of course a B-sentence. Also, both sentences have stable truth-values. Hence the right hand side really states the *B*-truth-condition that the token x is produced *later than* the occurrence of e (UT p. 58).[182] Mellor concludes: "As McTaggart saw, the truth-conditions of tensed sentences are either tenseless or self-contradictory." (UT p. 58).[183]

Tooley disagrees with Mellor at this point (Tooley 1997, pp. 194 f.). He argues that "e is past at t" is indeed an A-sentence, namely a "non-indexical" A-sentence, and that it cannot be analysed as "e is earlier than t". He claims that the former implies something which the latter does not. While the former implies that the universe is dynamic, the latter does not.

> "While the proposition that E lies (tenselessly) in the present at
> time t does entail the proposition that E exists (tenselessly) at time
> t, and that E is simultaneous with time t, it is not entailed by either
> of those propositions, since it appears to entail something that
> they do not—namely, that the world is dynamic, rather than
> static." (Tooley 1997, p. 195)

For Tooley, it is not a defining feature of A-sentences that their truth-values may change. His non-indexical A-sentences in any case have stable truth-

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[181] According to my definition (see above) A-truth-conditions can only be expressed by A-sentences.

[182] But I want to maintain that—contra Mellor—this can not be taken to show that A-determinations cannot be real. At best it shows that they are superfluous, see below.

[183] This conclusion is somewhat surprising, as there is nothing about truth-conditions in McTaggart's writings.

values. This is a non-standard view, as he is well aware of (Tooley 1997, pp. 194 f.).[184]

But as I will argue, Mellor's reconstruction fails for other reasons too. It fails because the A-theorist may very well give A-truth-conditions of A-sentences which are token-reflexive and which do not involve a contradiction. She may do so in a way which allows for an A-sentence to have different A-truth-conditions relative to different times. This means that different tokens of the same sentence-type may have different A-truth-conditions. Unlike Mellor (see above) I can see no reason why the A-theorist should have to claim that all tokens of an A-sentence-type have the same truth-conditions, as this is obviously a false claim. Here is an example of how the A-theorist may state the A-truth-conditions of an A-sentence-token in a token-reflexive way:[185]

"e is past" is true iff ← this token is produced when e is past

Why is this a statement of an A-truth-condition? It can be argued that we might interpret the right hand side as follows:

"e is past" is true iff ← this token is produced later than the occurrence of e

In that case, the ascription of A-determinations is reduced to an ascrition of a B-relation (see above). But I want to maintain, that we are still dealing with an (indexical) A-truth-condition, because it does contain an indexical element, "this". This demonstrative is used to refer to the token in question. Consequently, each token of "e is past" has different A-truth-conditions. Some may be true and others false, depending on their temporal location. And that is exactly what we wanted to prove. This shows that Mellor is wrong that all token-reflexive truth-conditions are B-truth-conditions. He is also wrong that the A-truth-conditions of A-sentences always lead to contradictions or can always be reduced to B-truth-conditions.

Mellor not only puts forward arguments against the A-theory of Tense, he also develops a positive B-theory of Tense. Like other new B-theorists he argues that A-sentences have B-truth-conditions. So what are the B-

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[184] Compare my 1.2 and 2.5.2 above.

[185] Here I have modified a suggestion of Künne's (personal communication).

truth-conditions of "e is past"? Mellor says that all B-truth-conditions of A-sentences are token-reflexive. (A claim which he later takes back, see 3.4.2 below.) And since only sentence-tokens have token-reflexive truth-conditions, we only need to look at sentence-tokens for now:[186]

> for all tokens x of "e is past": x is true iff x occurs later than e

In one sense *any* token of "e is past" is true iff it occurs later than e. But this does not mean that all tokens of "e is past" have the same truth-conditions. This can be spelled out more precisely by giving tokens names (f, g...):

> the token f of "e is past" is true iff f occurs later than e

and

> the token g of "e is past" is true iff g occurs later than e

etc. We can easily see that f and g have different truth-conditions. Different tokens of the same A-sentence-type have *different* token-reflexive B-truth-conditions and hence they can have different truth-values. The truth-value of an A-sentence-token depends on the time at which it occurs.

What about the sentence-*type* "e is past"? As we have seen, different tokens of A-sentence-types may have different B-truth-conditions. Some tokens may be true and some false, depending on their temporal location. Thus it makes no sense to speak of *the* B-truth-condition (or truth-value) of an A-sentence-type.[187] There is no single B-fact which makes all true tokens of "e is past" true. Mellor says that B-theorists do not need to postulate a single B-truth-maker for all tokens of any A-sentence. According to Mellor, in this they differ from A-theorists who do have to postulate a single A-truth-maker for all tokens of any A-sentence. This claim I have just shown to be false.

For those who are still not persuaded, Mellor gives yet another quick argument in favour of the B-theory of time (UT p. 59). He claims that there is *no need* to postulate the existence of A-facts or of A-determinations,

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[186] Mellor nowhere explicitly states any such B-truth-conditions.

[187] Unfortunately Mellor does not always respect this.

because we can say in B-terms what makes A-sentences true. He claims that the A-series can in effect be reduced to the B-series. Nothing is really past, present or future. Ultimately there are only B-relations in which events and times (and sentence-tokens) stand in relation to another. But again I want to maintain that this kind of reduction can at best establish that the A-series is superfluous. And proving the A-series to be *superfluous* is of course something quite different from proving it to be *unreal* (see 3.2 above). The former is a much stronger thesis than the second, and therefore the second cannot imply the first. While McTaggart sets out to prove the unreality of Tense by showing the A-series to be contradictory, Mellor's arguments at best show that the A-series is superfluous.

3.4.2 Mellor on McTaggart's Proof 2

In his "Real Time II" (1998a), Mellor gives up his claim that all B-truth-conditions of A-sentences are token-reflexive.[188] His former token-reflexive account is replaced by the so-called "date-analysis". This change is due to an attack which Quentin Smith[189] launched against the token-reflexive account. Smith argues that the token-reflexive theory gives some A-sentences the wrong truth-value. There are A-sentence-types which may be true even though they can have no true tokens. "There are no tokens now" is an example of such a sentence. Why is this a problem for the token-reflexive account? Mellor concedes that it is a problem because we want sentence-tokens to be true if and only if the respective sentence-type is true, and "in particular" to be true "when, of whom and where" it is true (RT2 p. 33).

This is Mellor's new positive B-account: he says that A-sentences have non-token-reflexive B-truth-conditions which contain no quantification over sentence-tokens but instead quantification over times and the temporal location of the event in question (RT2 p. xii). Note that this account deals with the truth-conditions of sentence-*types*. But since it makes no sense to

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[188] See 3.4.1 above.

[189] Smith (1986a) and (1993) chapter 3. It may be doubted that this argument is indeed fatal to all token-reflexive accounts. Compare Kaplan on a similar argument in his (1977). Interestingly Smith does not mention Kaplan. I will not discuss these types of argument here. Instead I concentrate on Mellor's way out, see below.

speak of *the* truth-condition of an A-sentence[190], its truth is here indexed to times.[191] For example:

> for all times t: "e is past" is true at t iff e is earlier than t.

Relative to different times, "e is past" has different B-truth-conditions. For example:

> "e is past" is true at t1 iff e is earlier than t1

or

> "e is past" is true at t2 iff e is earlier than t2.

On the right hand side of the biconditional, e's temporal location stands in a B-relation (earlier than) to the time at which "e is past" is said to be true. This time need not be the temporal location of any token, it can be the time of evaluation of the sentence-type. This way Smith's challenge for token-reflexive accounts (see above) is to be evaded. But we do have to note that this kind of account presupposes the existence of times, because it employs quantification over times. But Mellor does not think that this is a problem (RT2 p. 34). The ontology of times is not undisputed though (see 2.4 above and 4.4.1 below). Also this account employs a qualified truth-predicate. A-sentences are not true simpliciter, but only relative to times. Theorists who prefer an unqualified truth-predicate, often claim that not sentences, but propositions are the fundamental bearers of truth and falsity. They may argue that A-sentences express complete A-propositions which are true or false simpliciter (see 2.5 above).

Mellor also presents a new form of negative argument against the A-theory of Tense. In his revised chapter on McTaggart (RT2 chapter 7),

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[190] See 3.4.1 above. Mellor says: "[...] by a sentence's 'truth conditions' I meant the set of all the truth conditions this type has at different times (and places), indexed to those times (and places)" (personal communication 2000). Also no single B-fact can make an A-sentence-type true. Mabe we should say accordingly that it is made true by a *set* of B-facts.

[191] Mellor consequently calls this account an "indexical theory" of what makes A-sentences true (RT2 p. 34). Again, Mellor does not mention that this account is very similar to Davidson's (Davidson (1967); see 3.4.1 above).

Mellor gives an example to illustrate why A-theorists cannot successfully give A-truth-conditions for A-sentences:

> "Now consider two tokens, a and b, of 'e is past', one earlier than e and one later. Suppose for example that e is Jim's race on 2 June, which unknown to me has been postponed from 2:30 to 4:30; that a is my saying 'e is past' prematurely at 3:30; and that b is my saying it again at 5:30. Then if a and b are both made true by the A-fact that e is past, they must both be true when this is a fact and false when it is not. So at 4 p.m., when e is still future, a and b must both be false; and at 5 p.m., when it is past, they must both be true. [...] Yet they are obviously wrong. To say before Jim's race that it is past is to produce a token of 'e is past' that is and always will be false. Similarly, to say after his race that it is past is to produce a token that is and always was true." (RT2 p. 78)

This version of McTaggart's proof rests on the observation that temporally indexical sentence-types do not always have the same truth-value as all of their tokens. Mellor says: "Once we distinguish propositions from their tokens, it is obvious that tokens of an A-proposition, unlike the proposition itself, do not change their truth-values over time." (RT2 p. 78).[192]

So what is the relation between the truth-value of a sentence-type and that of its tokens? In particular, what is this relation in the case of A-sentences? Mellor distinguishes two claims, (A) and (B) (RT2 p. 79):

> (A) The truth-value of any token u of any proposition "P" is the truth value which "P" has for whomever produces u when and where they do so.

> (B) At any time, the truth-value of any token u of any proposition "P" is the truth-value which "P" has at that time.

Mellor believes that while (A) is "obviously true", (B) "must be false, simply because the A-propositions that concern us are true at some times and not at others. So any token of such a proposition that had to share its truth-value at all times would have to be both true and false. This is

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[192] Mellor uses "propositions" to denote sentence-types (RT2 p. 30). Sentence-tokens he sometimes calls "statements".

McTaggart's contradiction, expressed in a way that allows no regress and hence no riposte" (RT2 p. 79).[193]

I am not so sure that this is still *McTaggart*'s contradiction. But nevertheless it is an interesting argument. We may agree with Mellor that (A) is true and (B) is false. Sentence-tokens do not change truth-values over time, but sentence-types may do so. (A) is not about the truth-value of an A-sentence-type (or "proposition") *simpliciter*. Its truth-value is indexed to a time. Again, it makes no sense to speak of *the* truth-value (or truth-condition) of any non-tautological indexical sentence-type (see above). As (A) tells us, we can only speak of the truth-value an indexical sentence-type has *relative to* the circumstances in which a token of it is produced. In particular, temporally indexical sentence-types only have truth-values relative to times. Now it is Mellor's point that A-theorists cannot endorse (A). He says that according to the A-theory, any A-sentence-type has a single truth-maker and all tokens of a sentence-type have the same truth-value at any one time (see 3.4.1 above). Consequently A-theorists have to endorse (B), which—as we have seen—is a false thesis. But as I argued above (3.4.1), Mellor's assumptions are mistaken. I showed how the A-theorist can give A-truth-conditions of A-sentences in a way which allows for a true A-sentence to have different truth-makers at different times. Consequently the A-theorist does not have to endorse the false claim (B), but can likewise endorse the correct (A).

Mellor not only develops an ontological theory concerning the truth-conditions of A-sentences, he also says something about their meanings. He claims that B-theorists can say in B-terms what A-sentences *mean* (RT2 p. 3). In any case, meanings are not truth-conditions.[194] But they stand in a certain relation to truth-conditions. In what follows I will discuss this relation, as Mellor describes it in his Real Time II, chapter 6. Again it will

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[193] Here Mellor says that it is the tokens which have incompatible truth-values. This is different from saying that the sentence-type has incompatible truth-values. That A-sentence-types may have incompatible truth-values, is something which B-theorists explicitly hold. But it is only relative to *different* times that a sentence-type has different truth-values. Sentence-tokens on the other hand never change their truth-values over time.

[194] Hence Mellor cannot hold a truth-conditional semantics, see 3.4.1 above.

be crucial to distinguish between the meanings of sentence-types and those of their tokens.[195]

To recall: According to the B-theory, we can state in B-terms what makes A-sentence-types true. For example:

for all t: "e is past" is true at t iff e is earlier than t.

The right hand side of the biconditional states the truth-condition which the quoted sentence-type on the left hand side has relative to a time t. Compare the truth-conditions of the following B-sentence:

for all t: "e is earlier than t" is true iff e is earlier than t.

Now we can see that the A-sentence "e is past" relative to t has the same truth-condition as the B-sentence "e is earlier than t". But this is not to say that "e is past" (relative to t) has the same *meaning* as "e is earlier than t". That A-sentences and B-sentences do not have the same meanings, is shown by the argument from the essential indexical, see 2.5 above. And Mellor, who is a *new* B-theorist, of course concedes this point, see 3.2 above.

But what *is* the meaning of an A-sentence-type? Mellor says:

"We B-theorists need not then make the hopeless claim that A-statements are translatable by B-statements. Yet despite this we can still say in B-theory terms what A-statements mean. [...] what the A-sentence 'e is past' means is a function from any B-time t to its B-truthmaker at t, namely that t is later than e; and similarly for 'e is present' and 'e is future'." (RT2 pp. 3 f.)

Mellor says that the meaning of an A-sentence like "e is past" is related to the truth-condition (truth-maker) it has relative to a time. But while a sentence's truth-condition is indexed to a time, its meaning is not. Mellor says that the meaning of a type-sentence does not change over time, it is stable[196]. "e is past" always means the same, even though it has different truth-conditions at different times. Mellor says:

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[195] Especially since Mellor does not always do so.

[196] Of course this claim does not concern social changes of meanings.

> "We cannot identify these A-sentences' B-truth-conditions with
> their meanings, since the former vary across space and time, and
> the latter I think do not" (RT2 p. 59).

The meaning of a type-sentence, according to Mellor, is a *function*[197]. It is a
function from times to truth-conditions. More specifically, it is a function
from times to the B-truth-conditions which the sentence has relative to
those times. But how are we to state these functions? Mellor says they are
stated by B-sentences which *give* or *state* the meanings in question:

> "[...] should not the B-sentences which state the tc-functions of 'C
> is here' and 'M is now' mean what those A-sentences mean? Yet
> clearly they do not, since, as we have just seen, their own truth-
> conditions, unlike the truth-conditions [[198]] they state, do *not* vary
> across space or time." (RT2 p. 61)

The meaning of "e is past" for example is a function which may be
expressed by a B-sentence (F). But (F) is not synonymous with "e is past".
After all (F) is a B-sentence, while "e is past" is an A-sentence. And -as we
know- no A-sentence-type can have the same meaning as a B-sentence-type
(see 2.5. above).

   We also need to distinguish between a function and its values. (F) states
the function F. Its arguments are times, and its values are truth-conditions.
F produces different values for different arguments, because each A-
sentence has different truth-conditions relative to different times. But,
Mellor stresses, each A-sentence has a stable meaning, as long as we
identify its meaning with the function and not with its values. Nevertheless
we have to admit that the function is a *variable* function. So why not say
that the meaning is variable too?[199] I will come back to this question below.

   Mellor suggests a similar theory of the meanings of sentences which do
not contain any indexical elements:

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[197] Mellor calls these functions "truth-condition functions" or "tc-functions" for short (RT2
p. 59). Unfortunately he never states one. He only says that they are stated by B-sentences
(RT2 p. 61).

[198] They (the B-sentences) do not state truth-conditions but meanings. Maybe Mellor here
means "truth-conditions of the sentences whose meanings they state"?

[199] Above I suggested that the meaning of the indexical "now" may be a variable function.
See 2.5.2 above.

"Similarly even for B-sentences [...] Only the tc-functions of B-sentences are what are called *constant* functions, i.e. they have the same values (B-truth-conditions) for all their arguments (places, times and people). This gives us a single B-theory of the meanings of both A- and B-sentences." (RT2 pp. 59 f.)

B-sentences also mean functions from times to truth-conditions. But here, the function produces the *same* value for all of its arguments. B-sentences have the same truth-conditions relative to all times. While A-sentences mean *variable* functions, B-sentences mean *stable* functions.[200] This can be seen as Mellor's version of the argument from the essential indexical which show that A- and B-sentences do not have the same meanings. Mellor concludes:

"On our B-theory this follows at once from the fact that the tc-functions of B-sentences are constant and those of A-sentences are not. That, I say, is what makes A-beliefs irreducible to B-beliefs." (RT2 pp. 63 f.)

Finally I want to comment on Mellor's sometimes confusing use of the terms "variant" and "constant". As discussed above, Mellor claims that A- and B-sentences have different meanings. Nevertheless he insists that both A- and B-sentences have B-truth-conditions. He also claims that A- and B-sentences differ in truth-conditions. While A-sentences have variable truth-conditions, B-sentences have stable truth-conditions. Hence he claims that even though the truth-conditions of A- and B-sentences differ, they are of the same *kind*. But I will ague he has difficulties to maintain this, because he does not distinguish well enough between sentence-types and -tokens.

I want to argue that this difference in truth-conditions of A- and of B-sentence-types is a difference which only arises when their truth-ascriptions are *not* indexed to times. Mellor claims that while A-sentence-types have variable truth-conditions, B-sentence-types have constant truth-conditions.

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[200] Of course this presupposes that the sentences in question are free of lexical and grammatical ambiguities.

But this is compatible with the fact that *relative to certain times*, the truth-conditions of A- and of B-sentence-types can coincide.[201] For example:

   (l) "e is past" is true at t1 iff e is earlier than t1

   (m) "e is earlier than t1" is true iff e is earlier than t1

While (l) states the truth-conditions of the A-sentence realtive to t1, (m) states the truth-conditions of the B-sentence. And we can easily see: these truth-conditions are identical, the right hand sides of both biconditionals coincide. And of course particular A- and B-sentences may have the same truth-conditions. The only difference is: While B-sentences have B-truth-conditions simpliciter, A-sentences have B-truth-conditions relative to times.

    To conclude: the thesis that A- and B-sentences differ in truth-conditons applies only to sentence-types whose truth-ascriptions are not indexed to times. But what *are* the truth-conditions of A-sentence-types whose truth-ascriptions are not indexed to times? I have pointed out before that it does not make any sense to speak of *the* truth-conditions of such A-sentence-types. In personal communication (and only there) Mellor says they are the *set* of all truth-conditions which the sentence-type has relative to different times (see above). Agreed, this set for "e is past" is different from that of "e is earlier than t". While the former has numerous (infinitely many?) members, the latter has only one.[202]. But it should be clear that—specified as sets—the truth-conditions of sentences are *stable*. The *set* itself does *not* change over time. Hence when taken as sets, A-sentence-types have stable truth-conditions. But when their truth-ascriptions are indexed to times, they have variable truth-conditions. This means that (contra Mellor) this difference in truth-conditions between A- and B-sentences has nothing to

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[201] Alternatively we can say that some *tokens* of A-sentences have the same truth-conditions as tokens of B-sentences. The truth-conditions of A-sentence-tokens are as stable as those of B-sentence-tokens.

[202] B-sentences have only one truth-condition relative to all times. Hence there is no difference between truth-conditions for B-sentences whose truth-ascriptions are indexed to times and those whose are not.

do with variability over time. Rather it is a difference in diversity or size (number of members of the set).[203]

3.5 Determinism

According to the A-theory, the present, past and future may not be equally real (see 3.1 above). Most A-theorists believe that while the past and present are real, the future is not. In fact denying the reality of the future can be seen as one of the major motivations for subscribing to an A-theory of time. It may also be one of the main motivations for subscribing to a many-valued logic like traditional tense logic.[204] But why should we want to deny the reality of the future? Roughly the idea behind this denial is that the reality of the future seems to imply determinism. And since determinism seems to imply a lack of freedom (of human agency), determinism should be rejected. Some A-theorists claim that the B-theory should be rejected because—since it treats all Tenses alike (see 3.2 above)—is wedded to determinism.[205] Now the B-theorist is faced with the problem to show that the B-theory does not imply determinism, or that determinism is compatible with free agency.

Unfortunately, "determinism" does not designate a single doctrine. We need to distinguish between various doctrines which go under this name. First, there is the claim that

1) all events are rendered unavoidable by their causes,[206]

which I will call "causal determinism". Then there is the claim that

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[203] There is a similar confusion concerning meanings: here Mellor insists that the meaning of a sentence-type is a function. Meanings are supposed to be stable, even when the function in question is a variable function (see above).

[204] See Prior (1953) p. 322, citation according to Bradley (1959) p. 236. See also Dummett (1981) 400 and (1982) pp. 256 f.

[205] According to my distinctions above, A-theorists who claim this are moderate A-theorists, see 3.1 above.

[206] Richard Taylor (1974) p. 59 takes (1) to capture the essential idea of determinism. But I will not consider his view here, see below.

2) everything is determinate in the sense that it is what it is and logically cannot be otherwise,[207]

which I will call "logical determinism". Finally there is the claim that

3) whatever happens is unavoidable,[208]

which I call "fatalism". I will not deal with (1) here, since it does not directly concern the debate between A- and B-theorists. Above I said that some A-theorists deny the reality of the future because they want to preserve free human agency. They clearly want to avoid what I called "fatalism". But it is not so clear that rejecting (3) forces one to reject (2) as well. There is much debate over the question whether logical determinism implies fatalism.[209] Without wanting to go into this debate in detail, I will present a short but decisive argument from Bradley's to the conclusion that (2) does not imply (3):[210] He says that while (2) is a tautology, (3) is not. And since it is not possible to derive non-tautological claims from tautological ones, fatalism cannot follow from logical determinism. If this is correct, this argument can be helpful for the B-theorist too.[211] The B-theory may imply logical determinism, but since this does not imply fatalism, there is not need to reject the B-theory along these lines.

If logical determinism is really a tautology, this in turn may present a problem for the A-theorist who denies the existence of the future. Logical determinism is usually interpreted as implying the principle of bivalence, namely that all declarative sentences are either true or false. But A-theorists

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[207] See Bradley (1959) pp. 232 f. who distinguishes logical determinism from fatalism.

[208] See Taylor (1963) p. 59, who distingushes determinism from fatalism.

[209] See Cahn (1967); Lehrer (1966) and (1980); Burgess (1978); Faye (1989) and (1993); Mayo (1962); Mellor (1987); Chisholm (1964); Lucas (1989); Wierenga (1991); Stump & Kretzmann (1991).

[210] Bradley (1959) p. 250. Ted Warfield (1997) pp. 80 f. seems to take it for granted that everyone now agrees that this implication does not hold. He says that "the problem of logical fatalism has been solved". According to Warfield, this does not hold of "theological fatalism" though, which I will deal with below.

[211] For discussion concerning logical determinism of the future see Bradley (1959); Cahn (1967); Danto (1966); Ginet (1966) and (1980); von Wright (1974); Lukasiewicz (1967), and Thalberg (1980).

who deny the reality of the future (neutralists) usually hold that most sentences about the future do not have a determinate truth-value. Hence they reject a classical logical principle and in turn cannot accept logical determinism.[212] Aristotle was one of the first to raise the problem of the future and to discuss *truth* as applying to sentences about the future.[213] But commentators disagree over the question whether Aristotle really rejects the principle of bivalence as applying to sentences about the future.[214] Of course I cannot go into this historical debate here. But I want to borrow Aristotle's famous example to illustrate one kind of strategy which may help the A-theorist to accept logical determinism after all. Take the sentence

S: There will be a sea-fight tomorrow

and its negation

¬S: It is not the case that there will be a seafight tomorrow.

According to classical logic, the disjunction (S ∨ ¬S) is true, because either (S) is true, or (¬S) is. Now the neutralist claims that both (S) and (¬S) are neither true nor false. In that case, according to the classic conception of disjunction, (S ∨ ¬S) cannot be true either. But this seems to conflict with our intuitions. Now the neutralist may turn to alternative logical theories which allow for a disjunction to be true even if none of its disjuncts, taken by itself, is true. One such analysis is called "supervaluation", which is used in intuitionistic logic and most prominently for treating problems having to do with vagueness[215]. It may also help neutralist to accept logical determinism. I do not want to pursue these matters here any further. I hope that what I said so far is enough to show that neither the A-theory nor the

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[212] As I will argue later, rejecting bivalence may also be incompatible with an unrestricted acceptance of the temporal truth-value links, see 4.4 below.

[213] Aristotle "De Interpretatione" chapter 9.

[214] Frede (1985) and (1998); Normore (1982) chapter 18, Cahn (1967) chapter 3. But most commentators agree that Aristotle thinks that (concerning the future) logical determinism implies fatalism.

[215] See for example Dummett (1969); Wright (1984) p. 178 and appendix.

B-theory can easiliy be shown to be false by arguments having to do with determinism and its alleged implications.

3.5.1 Appendix: God and Tense

The ontology of Tense is not a secluded area of philosophy, but it has far-reaching consequences for other metaphysical and non-metaphysical theories as well. Some of the main arguments which are employed in the debate between A- and B-theorists, play an important role in other philosophical theories too. To illustrate, I want to take a look at the philosophy of religion. Here God's characteristics and their relations are widely disputed topics.[216] God is said to be a "perfect" being, and amongst his "perfections" are properties like omniscience, omnipotence, and immutability. Also he is said to have timeless existence, in that he exists outside of time.[217] Philosophers of religion dispute over arguments which are designed to show that some of God's alleged perfections are incompatible with each other or that they have unwelcome consequences.[218]

It is famously argued that God's omniscience implies what I called "fatalism", see 3.2 above.[219] More specifically, the question is here whether human freedom and divine foreknowledge are compatible.[220] Roughly the argument goes like this: to say that God is omniscient is to say that he knows all true propositions[221]: this is to say that all (and only the) true

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[216] See Gale (1991); Kenny (1979); Swinburne (1977) and (1993); La Croix (1973).

[217] See for example Kretzmann (1966).

[218] See Adams (1983); Ayer (1968); Naylor (1980); Sellars (1966b); Taylor (1963); Thalberg (1980).

[219] For discussion see Pike (1965) and (1970); Plantinga (1974); Taylor (1966); Warfield (1997); van Wright (1974); Yourgrau (1985); Zagzebski (1991), Menzel (1991); Ben-Menahem (1988); Flint (1991); Geach (1972).

[220] Like the debate concerning logical determinism, the theological debate has a long and honorable tradition. It is dealt with by theorists like Boethius, Molina, Augustine, Aquinas and Ockham. For a comprehensive treatment of the historical background, see Hasker (1989) chapter 1.

[221] Warfield (1997) calls this a "fairly standard account of omniscience", footnote 1. But there are others. See also Prior (1978), Geach (1972), Castaneda (1967). I will argue that the argument crucially depends on the exact account of omniscience, see below.

propositions are the contents of God's knowledge. If there are any truths about the future, then God (who is omniscient) knows them. To say that an agent's action is free is to say that the agent has the ability to act otherwise. Now it can be argued that the following set of claims is inconsistent:[222]

    1) God is omniscient.

    2) God knows at t1 that John will mow his lawn at t3.

    3) John is free to refrain from mowing his lawn at t3.

If (1) and (2) are true, (3) cannot be true. In that case, John at t3 has to mow his lawn. At t3, there is nothing John can do to make it happen that God did not know at t1 that he would mow his lawn at t3.[223]

    I just want to note that its solution may employ arguments which are also used in the debate between A- and B-theorists, in particular those that concern the semantics of indexicals (see 2.5 above). The interesting question is what exactly the content of God's knowledge at t1 is. Is it an A-proposition or a B-proposition? It turns out that the argument crucially relies on the semantic claim that the content of God's knowledge at t1 is a true A-proposition. But this assumption is not unproblematic, as we can see in the following argument.[224]

    A different but related theological argument is designed to show that God's omniscience is incompatible with his timeless existence (or immutability[225]). To say that God is timeless is taken to mean that he exists "outside of time"[226]. It does not make sense to say that he exists now, in the

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[222] There are many different forms of this argument. The following is closely related to Zagzebski's version (1991) p. 4.

[223] This assumes of course that it is impossible to affect the past. But see Dummett's (1964).

[224] Künne (2003 chapter 5.3) argues that it is generally problematic to take temporally indeterminate A-propositions (see 2.5 above) as the contents of anyone's knowledge. But this does not mean that temporally determinate A-propositions cannot be the contents of anyone's knowledge either.

[225] Initially it is argued that God's immutability is incompatible with his omniscience. But I agree with Grim (1985) p. 151 that there is an analogous incompatibility between God's timeless existence and his omniscience.

[226] See Hasker (1989) chapter 8.

year 2000 or the like. Now it can be argued that this property conflicts with God's alleged omniscience.[227] Roughly the argument shows the following set of claims to be inconsistent:

1) God knows all true propositions.

2) God exists timelessly.

3) Only beings who exist in time can know A-propositions.

To say that God is omniscient is to say that he knows all true propositions (see above). But, the argument goes, there are some true propositions which God cannot know if he has timeless existence[228]. Among these propositions are (most) true A-propositions. Because, so the argument goes, in order to know an A-proposition, one has to be in time.

I will not rehearse the argument in detail here. I only want to mention in what sense it is related to the debate between A- and B-theorists. Like the above argument concerning omniscience and free will, it crucially depends on the semantics of A-sentences. Suppose that "It is raining now" expresses a true proposition (P) on 12 October 2000 in London. What kind of proposition is this? The argument from the essential indexical shows that A-sentences express irreducible A-propositions (see 2.5 above). Suppose that (P) is a true irreducible A-proposition, and that I know that (P). But if God is outside time, he cannot know any A-propositions, and hence he cannot know that (P). This means that there is something which I know but he cannot. This clearly tells against his omniscience.

Now we might say that to each A-proposition there is a related (but distinct) B-proposition. For example, there is the B-proposition *that it rains on 12 October 2000 in London.*[229] This proposition is of course amongst the things which God knows if he is omniscient. Now it may be argued that for God to be omniscient, it suffices that he knows all true B-propositions. The

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[227] For discussion see Kretzmann & Stump (1991); Prior (1968b); Castaneda (1967); Fitzgerald (1985a); Grim (1985); Hasker (1989).

[228] See Prior (1968b) p. 29.

[229] Eliminativist eternalists or traditional B-theorists would say that for God to be omniscient, it suffices that he knows all true B-propositions, because B-propositions can be reduced to A-propositions, see 2.5.2 and 3.2 above.

idea is that each true A-proposition and its related B-proposition have the same truth-maker, they correspond to the same fact.[230] As we saw above, new B-theorists like Mellor claim that both A-sentences and B-sentences (if true) are made true by B-facts (3.2 above). From this they may conclude that for God to be omniscient, it suffices that he knows all B-facts, because these are all the facts there are. In that case, God's omniscience and his timeless existence are compatible after all. This reply depends on the question which account of omniscience is correct.[231] All I wanted to show is that this theological dispute depends on some of the same semantic and ontological considerations as the debate between B-theorists and A-theorists. And that it has the same problems too.

3.6 Physics

The philosophy of time and Tense is of course not entirely independent of physical theories of time.[232] But here—as in many other fields—it is not entirely clear what the relation between philosophical and scientific theories should be. For some, this relation is a very intimate one. Putnam for example makes the astounding claim that there are no longer any philosophical problems about time, because physics has solved them once and for all.[233] Considering the amounts of philosophical work that is still done in the philosophy of time, we might think either that Putnam is wrong, or that all the work is completely superfluous. Putnam believes that the remaining work has to be dealt with by the physicists, since "there is only the physical problem of determining the exact physical geometry of the four-dimensional continuum that we inhabit" (Putnam 1967, p. 247). Putnam claims that physics has solved philosophical problems which have loomed for more than two thousand years. These problems include the main questions dealt with in the debate between A-theorists and B-theorists (see 3.1 and 3.2 above): Is reality dynamic or static? Are A-determinations

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[230] Again, this sort of view employs a substantial correspondence-theory of truth, see 4.1 and 5.3.3 below.

[231] Also it is not entirely clear to me what it means to know *facts*.

[232] See Gödel (1949); Le Poidevin (1991); Smith (1993).

[233] Putnam (1967) p. 247.

satisfied? They also include problems which already troubled Aristotle (see 3.5 above): is the future as real as the past or the present? Is the future determined? They also include problems concerning causation, change and the direction of time. Incredible to think that physics may have solved all of these problems in one stroke.

How can physics be able to achieve this task? The physical theory which allegedly manages this task, is Einstein's Special Relativity (Putnam 1967, p. 242). Special Relativity is taken to imply that the relation of simultaneity only holds relative to a frame of reference. For example, what is future-for-me may be present-for-you and past-for-him. Hence there is no objective difference between the past, present and future. Especially, the future cannot be less real than the past.[234] Putnam concludes:

> "Aristotle was wrong. At least he was wrong if Relativity is right; and there is today better reason to believe Relativity than to believe Aristotle, on this point at least." (Putnam 1967, p. 244)

Putnam makes it look like Aristotle's mistake is that he believed in the wrong sort of physical theory.

> "It is important to see that Aristotle's view depends upon an *absolute* 'pastness' and 'futurity' just as much as Newtonian physics does, and that it is obsolete for the same reason." (Putnam 1967, p. 245).

If Putnam is right, Special Relativity is incompatible, not only with Aristotelian neutralism, but with the A-theory of time. This means that, if Special Relativity is correct, so is the B-theory of time.[235] But amongst A-theorists, this implication is not undisputed. Some A-theorists argue for the compatibility of Special Relativity and an A-theory of time.[236]

The question remains why Putnam is so confident that Special Relativity indeed is correct. After all, there are still theorists who believe in the A-

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[234] I will not discuss this implication here, because I am generally sceptical of such arguments, see below.

[235] B-theorists who claim that the A-theory is false because it is incompatible with Special Relativity, are moderate B-theorists (see 3.2 above).

[236] See Ludlow (1999) p. 3 who also mentions Sklar and others.

theory of time and who—unlike Aristotle—are familiar enough with 20th century-physics. They hold that Special Relativity—like all (physical) theories, I venture—is not the last word in physics as well as in philosophy. Physicists themselves disagree over the correctness of Special Relativity. Some claim that not Special, but General Relativity is correct and that consequently reality does contain A-determinations. Others hold that Quantum Mechanics is correct and that it too suggests the correctness of an A-theory of time.[237] In view of this ongoing debate in physics, I find it rash to rely on the correctness of one rather than another physical theory for philosophical purposes.[238] In particular, I cannot see how any one physical theory can once and for all solve any philosophical debates. On this point I prefer to be sceptical where Putnam shows (too) much confidence.

But there is another objection against too emphatically embracing physical theories for solving problems in philosophy. In supposing that physics can decide a philosophical dispute, one seems to assume that physical theories themselves are free of any philosophical assumptions. But this view is rather naive. Sklar[239] criticises this point (with reference to Putnam's paper):

> "I think that such a naive view is as wrong as can be. Just as a computer is only as good as its programmer [...], one can extract only so much metaphysics from a physical theory as one puts in. While our total world-view must, of course, be consistent with our best available scientific theories, it is a great mistake to read off a metaphysics superficially from the theory's overt appearance, and an even graver mistake to neglect the fact that metaphysical presuppositions have gone into the formation of the theory, as it is usually framed, in the first place." (Sklar 1981b, pp. 130 f.)

How can a theory with alleged philosophical implications be free from any philosophical assumptions itself? I think Sklar is right in saying that there

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[237] Consequently, these physical theories are incompatible with a B-theory of time. A-theorists who claim that the B-theory is false because it is incompatible with Quantum Mechanics or General Relativity, are moderate A-theorists, see 3.1 above. For discussion see also Le Poidevin & MacBeath (1993) part 4; Tooley (1997) chapter 10.

[238] If Popper is right, we can never know that a theory is correct, we can only know that it is incorrect, see for example his (1960).

[239] Sklar (1981b); see also Ludlow's discussion of this passage, Ludlow (1999), p. 3.

are always philosophical assumptions which go into the formation of physical theories, not to mention into their interpretation. It should be clear that it cannot be up to the physicists to decide which metaphysical assumptions are correct. This task should be taken seriously by philosophers who deal with the problems in question. Consequently I will leave aside physical theories of time and their alleged impact on the debate between A-theorists and B-theorists.

3.7 Conclusion

I have argued that the ontological debate concerning Tense is not satisfactory. McTaggart's attempt to show that the A-series is incoherent and hence unreal is a good strategy, but it cannot count as conclusive. Other B-theorists also set out to prove the unreality of the A-series, but they can at best show that the A-series is superfluous or less real than the B-series. And this is not the only problem which reductionist theories generally have to face. I argued that much of the debate between A- and B-theorists seems to depend on assumptions concerning the semantics of A-sentences. The argument from the essential indexical shows that A-sentences express A-propositions. But I argued that it is a further question whether or not these A-propositions are complete or not. I also showed that Mellor's position, which often seems to confuse ontology and semantics, depends on a non-standard conception of facts alias truth-makers. Finally I said that the A-theorists' motivation is often based on independent assumptions concerning the unreality of the future. And these are tied to thoughts concerning determinism and free will. I conclude that the strategies used by the opponents in the ontological debate fail to solve the dispute itself, because they fail to address many of the underlying concerns. Hence it makes good sense to look out for different strategies for tackeling realism-disputes quite generally, and the debate concerning Tense in particular.

4. Semantic Realism

Dummett proposes a new approach to realism-debates, namely in terms of semantics. He claims that the opponents in realism-debates really disagree about what sort of meaning the sentences of the disputed kind have. While semantic realists claim that the meaning of a sentence consists in its truth-conditions, semantic antirealists claim that its meaning consists in its verification-conditions. The antirealist claims that truth is epistemically constrained. She poses a twofold challenge to the semantic realist which is based on epistemic and semantic considerations. I will attempt to apply Dummett's framework to the ontological debate concerning Tense. It turns out that all semantic antirealists are A-theorists, but not vice versa. An important part in the semantic debate concerning Tense is played by the so-called temporal truth-value links. They are biconditional principles which identify the truth-conditions of differently tensed sentences uttered at different times. Semantic realists argue that the semantic antirealists face difficulties in accepting the temporal truth-value links. This also has consequences for our understanding of other temporal matters, namely diachronic inconsistency and memory, because they allegedly depend on the truth-value links too. But I will argue that it is far from obvious how the truth-value links are to be stated and interpreted. Hence they cannot easily be used to decide the debate between realists and antirealists about Tense. These results make it doubtful that Dummett's approach can appropriately capture the idea behind the debate between A- and B-theorists.

4.1 Mere Sophistry?

Dummett proposes a universal strategy for treating realism-debates concerning all different kinds of subject-matters. Instead of taking an ontological apporach, he suggests that realism-debates should be conducted in terms of semantics. When we wonder whether certain entities exist, we should ask what the meaning of sentences about those entities consists in.

He claims that this approach is especially useful in cases where the entities in question are difficult to make out. Dummett observes that, concerning the past, present and future, there simply are no *things*, no objects, whose existence could be advocated or denied. He concludes that no ontological dispute concerning Tense is philosophically useful:

> "In some cases—e.g. the dispute over realism concerning the future and that over realism concerning the past—there did not seem to be any objects in question; to count states of affairs as objects for this purpose would be mere sophistry, like the man imagined by Wittgenstein as saying that a ruler modifies our knowledge of length." (Dummett 1992b, p. 465)

This is a strong claim, especially in the light of the existence of the contemporary ontological debate about Tense. What exactly do A-theorists and B-theorists quarrel over? Is it the existence or non-existence of certain objects? I said that A-theorists and B-theorists disagree over the existence or non-existence of A-determinations (see 3.1 and 3.2 above), that is, certain properties (see 1.3 above). And I stressed that the question as to their reality is really a question about whether they are satisfied, that is, whether anything has them or not. While A-theorists claim that A-determinations are satisfied, B-theorists claim that they are not (see 1.3 above). They may also quarrel over the existence or non-existence of certain states of affairs, or facts, namely A-facts (see 2.2 above).[240] Mellor for example explicitly argues that there are no A-facts which make A-sentences true, because all we need to do the job are B-facts (see 3.2 and 3.4.1 above).[241] Now how does this fare with Dummett's claim above? Does Dummett's criticism apply to the debate between A- and B-theorists?

Dummett claims that it is "mere sophistry" to try to argue over the existence or non-existence of certain states of affairs. For him, this does not constitute a proper realism-debate at all. This has to do with the underlying ontological pictures, which govern all ontological debates: Which are the fundamental consituents of reality? There seem to be at least two

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[240] We may say that if a state of affair obtains (exists), it is a fact. A state of affair may be interpreted as a thing having a property, for example event e having the A-determination of being past.

[241] Mellor (1998a) p. 2.

fundamentally different candidates, each calling for a distinct ontology: First, it can be claimed that reality fundamentally consists of particulars, i.e. of things, of material objects like chairs, tables, trees, persons, etc.[242] Alternatively one can postlate an ontology of facts, claiming that the world fundamentally consists of facts, or, famously, that "the world is the totality of facts".[243] According to a metaphysics like the early Wittgenstein's, there are basic, atomic facts, and there is a hierarchy of complex facts, which are made up of atomic facts. An atomic fact corresponds to some atomic sentence. The sentence has a subject-predicate structure, which has some analogue in the world: roughly an atomic fact corresponds to some singular object which has some property. This is the kind of ontological picture which seems appropriate for the ontological realism-debate about Tense which often employs talk of facts as truth-makers of true sentences (see 3.2 and 3.4 above and 5.3.3 below). Dummett's criticism can be understood as a critique of the underlying metaphysics of such debates. An ontology of facts is not without problems, and it is even abandoned by the later Wittgenstein himself. Especially the idea of facts alias substantial truth-makers can be criticised (see 5.3.1 below).

In any case, why does Dummett call it "mere sophistry" when realism-debates revolve around the question which types of states of affairs exist? A metaphysics of facts might be naive or questionable, but I do not think it can be rightly called "sophistry". I believe there is no sophistry (but maybe bad metaphysics) involved if we treat realism-debates as concerning the existence of certain facts (psychological facts, mathematical facts, observational facts, etc.).[244] The problem seems to arise when the characterisation of the different debates involves *both* claims about the existence of things and about the existence of facts. This is what Dummett seems to have in mind: he seems to take for granted an ontology where particulars are the fundamental constituents of reality. Accordingly, most ontological realism-debates he considers are about the existence of certain types of objects. But if we now try to add to this list a debate about the

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[242] See for example Prior, 1.4, 2.1 and 2.3 above.

[243] Wittgenstein (1922), opening paragraphs.

[244] Friends of an ontology of facts may even claim that we should treat *all* realism-debates as debates about the existence of certain states of affairs.

existence of certain types of facts, this entry does not match the others. Facts are not "things" along with tables, chairs, numbers, etc. They are of a different ontological category. Debates about the existence of particulars and debates about the existence of facts do not employ the *same* underlying ontology and hence are not really debates of the same kind. It is maybe not sophistry, but a category-mistake to treat the two on a par.

In the avove quote, Dummett compares the present case with the man imagined by the later Wittgenstein[245] who says that a ruler modifies our knowledge of length:

> "Imagine someone's saying: 'All tools serve to modify something. Thus the hammer modifies the position of the nail, the saw the shape of the board, and so on.' And what is modified by the ruler, the glue-pot, the nails? 'Our knowledge of a thing's length, the temperature of the glue, and the solidity of the box.' Would anything be gained by this assimilation of expressions?" (Wittgenstein 1956, no. 14)

Here Wittgenstein discusses the notion of family-resemblance, and he wonders what all tools for example have in common. He imagines that someone might suggest that all tools modify something: the hammer modifies the position of the nail, the saw modifies the shape of the wood, etc. But what does a ruler modify? Does it make sense to say that it modifies our *knowledge* of the length of an object? Or is this where the analogy breaks down? Wittgenstein does not explicitly tell us. But I suppose he thinks that this indeed is where the analogy breaks down. Modification of position and shape are different from modification of knowledge. They are of a different kind. But it is difficult to say where the difference exactly lies. Wittgenstein points to the difficulty of saying what it is precisely that things which belong to the same sort or family have in common. The same seems to apply to the case discussed by Dummett: he wonders what all realism-debates have in common, and suggests that they all deal with the existence or non-existence of certain objects. But what does the realism-debate about Tense deal with? To say that it deals with the existence or non-existence of certain *states of affairs,* would—according to

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[245] Wittgenstein (1956) no. 14. Unfortunately Dummett himself does not mention which passage of Wittgenstein's he is referring to; I owe the bibliographical hint to Crispin Wright.

Dummett—strech the analogy too far. Facts are not of the same kind as objects like tables, chairs, numbers, etc., just like knowledge-modification is not on a par with shape- or position-modification. In the case of facts and objects, the difference is one of category: As I stressed above, facts are of a different ontological category from objects; we cannot have an ontology which treats both of them as fundamental. If the realism-debate about Tense is a debate over the existence or non-existence of certain properties (A-determinations) or facts (A-facts), this debate is categorically different from those debates which concern the existence of material objects like tables and chairs. But this only seems to be a problem, if one seeks a universal strategy for treating realism-debates, as Dummett does.

4.2 Semantic Realism and Antirealism about Tense

Dummett[246] is unhappy with the ontological types of realism-debates quite generally. From his observation that not all of them concern the existence or non-existence of certain entities, Dummett concludes:

> "For these reasons, I shall take as my preferred characterisation of a dispute between realists and anti-realists one which represents it as relating, not to a class of entities or a class of terms, but to a class of statements [...]. This class I shall, from now on, term 'the disputed class'. [...] the realist holds that the meanings of statements of the disputed class are not directly tied to the kind of evidence for them that we can have, but consist in the manner of their determination as true or false by states of affairs whose existence is not dependent on our possession of evidence for them. The anti-realist insists, on the contrary, that the meanings of these statements are tied directly to what we count as evidence for them, in such a way that a statement of the disputed class, if true at all, can be true only in virtue of something of which we could know and which we should count as evidence for its truth." (Dummett 1963, p. 146)

Dummett proposes that realism-debates should generally proceed in terms of a theory of meaning for sentences about a disputed class.[247] He claims

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[246] Dummett (1963), (1992b) and (1982).

that realists and antirealists do not really disagree about what kinds of
entities exist, but rather about the meanings which sentences about these
entities possess: While realists claim that the meanings of sentences consist
in their truth-conditions, antirealists claim that they consist in their
verification-conditions[248]. While the realist says that the obtaining of truth-
conditions may be unrecognisable, the antirealist insists that the obtaining
of verification-conditions must obtain recognisably. This of course is
related to different attitudes towards the right conception of truth[249]: The
realist claims that truth is not epistemically constrained and may be
verification-transcendent, while the antirealist claims that truth is
epistemically constrained[250]. The antirealist believes in the following
principle, while the realist rejects it:

   P: everything that is true can be known to be true.

There are different interpretations of (P). Differently strong interpretations
of (P) yield differently strong interpretations of verification and of
epistemic constraint. Relevant questions (which I will not here discuss) for
example are: verification by whom, and when, and how conclusively?
While the realist believes in truth as being subject to the principle of
bivalence, the antirealist more or less[251] identifies truth with verifiability or
warranted assertibility, which prima facie is not subject to bivalence. Also,
the realist believes that what is true is always true, while the antirealist
concedes that what is true (verifiable) may change over time.[252] Since
evidence may be destroyed, a sentence may change from being true to
being false.

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[247] Dummett on theory of meaning: Dummett (1975) and (1976).

[248] For discussion see Röska-Hardy (1992); Skorupski (1988); Tennant (1987) and (1997).

[249] For discussion see Alston (1996); Brandom (1976); Genova (1988); Horwich (1996);
Künne (1998); McDowell (1976), (1983), (1987), (1989) and (1989b).

[250] I will not here discuss the two positions in detail, but only hint at their differences. But
see also 5.2 and 5.3.2 below.

[251] There are differently strong kinds of antirealism, depending on how strongly the
verification principle is interpreted.

[252] Note that in both cases the bearers of truth-values are of the same kind. Realists and
antirealists do not differ in a way in which temporalists and eternalists differ (see 2.5.1
above).

What is an appropriate theory of meaning for A-sentences? Semantic realists generally identify the meanings of sentences with their truth-conditions. Hence they hold a truth-conditional semantics. But as I argued above, in the case of (temporally) indexical sentences, their meanings and their truth-conditions may come apart (see 2.5 and 3.3 above).[253] Take for example the A-sentence, uttered at t1:

S: It is raining now.

The realist may choose the following strategy which indexes truth to times (see 3.4.2 above):[254]

"It is raining now" is true at t1 iff it rains at t1.

Now take the following B-sentence:

T: It rains at t1.

Since (T) is a non-indexical B-sentence, its truth-conditions can be stated in a homophonic fashion:

"It rains at t1" is true iff it rains at t1.

When we look at the right-hand-side of the biconditionals, we can see that the truth-conditions of (S) (relative to t1) and (T) coincide. What about their meanings? The argument from the essential indexical shows that no A-sentence has the same meaning as any B-sentence (see 2.5.above). Hence (S) cannot have the same meaning as (T). This shows that in the case of indexical sentences, meanings are not identical with truth-conditions. Consequently, the semantic realist cannot hold a purely truth-conditional semantics for A-sentences.

What does this mean concerning Dummett's semantic approach to realism about Tense? Does it imply that Dummett's approach does not

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[253] Also I distinguished between various ways of specifying the truth-conditions of A-sentences. And I said that it is not clear what *the* truth-conditions of an A-sentence-type is. See 2.5 and 3.4.2 above.

[254] As we will see below, the semantic realist holds that truth-conditions may obtain unrecognisably. This means that he has various possibilities of stating the truth-conditions of A-sentences.

work for (temporally) indexical sentences? I hope not. Maybe we should not read the realist's claim in the strictest sense: when he identifies meanings with truth-conditions, maybe this identity is not to be taken as very strict. I will not say more about this problem here, but it will reappear in my discussion of the temporal truth-value links (see 4.4 below).

The semantic realism-debate concerning Tense proceeds on different grounds from the ontological debate. In the ontological debate, one prominent strategy concerns the question of reducibility: Are A-sentences reducible to B-sentences (see 3.2 and 3.4.1 above)? The semantic realism-debate may also employ a reductionist claim, but it is of a very different kind.[255] For example, an antirealist about the past may claim that statements about the past can be reduced to statements about presently available evidence (see 4.4 and 4.5 below).[256] Another difference is that the ontological debate nowhere employs the notion of verification-conditions. Neither the ontological realists nor the antirealists seem to hold an epistemically constrained conception of truth. They are likely to say of the same set of A-sentences that they are true (or false respectively). Both the A-theorist and the B-theorist seem to be semantic realists.

Dummett does not apply his semantic approach to the debate concerning the reality of all Tenses alike. He only discusses local semantic debates concerning just one or two Tenses. The debate which has received most attention in the literature concerns the reality of the past. Dummett merely sketches how the debate concerning the future would run.[257] It is not clear if the semantic debate concerning the present would be strictly analogous, or whether it can be sensibly held at all. Dummett does not explicitly mention the past as part of the collection of all A-determinations. Local realism here concerns just past-tense sentences, while global realism concerns all sentences, including B-sentences. There is no mention of an intermediate position concerning all types of A-sentences.

To treat all Tenses alike in a Dummettian framework seems difficult (except for a global antirealist maybe). Semantic antirealists concerning the

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[255] See also Stevenson (1988).

[256] The semantic antirealist chooses the reductive class in terms of epistemic accessibility.

[257] But it is seen as a common-sense view. Compare 3.1. and 3.5 above.

past or the future are usually semantic realists concerning the present.[258] They may hold certain reductive claims, for example by reducing future-tense statements to statements about presently observable tendencies. This shows that semantic antirealists are prone to treat the different Tenses differently. I said above that only the A-theorists can treat different A-determinations differently (3.1 and 3.5 above). Hence we get the following somewhat surprising result: Semantic antirealists concerning one or two Tenses are ontological realists concerning Tense, i.e. A-theorists (but not vice versa). Also Dummett is reluctant to compare the ontological and the semantic debates like this:

> "It is the anti-realist who takes time seriously, who thinks in the way McTaggart described as believing in the reality of time; it is the realist who takes the view McTaggart was advancing when he proclaimed the unreality of time. [...] Such a way of drawing the contrast ought to be rejected by both disputants—certainly by the anti-realist: for it describes each opinion in the light of the opposed opinion; but it does succeed in conveying something of the psychological effect of the two opinions." (Dummett 1969, 370a)

4.3 Acquisition-challenge and Manifestation-challenge

How does the debate between semantic realists and antirealists proceede? As I said, the semantic debate mostly treats the different Tenses separately. Most discussed in the literature is the semantic debate concerning the past. Dummett formulates an antirealist challenge against the seemingly common-sensical view that the past is real.[259] This challenge is in turn discussed by McDowell[260] and Wright[261]. Its underlying idea goes back to

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[258] We can say that these antirealists are in some ways presentists. But they should not be confused with those A-theorists which are presentists (see 3.1 above). See Tooley (1997) on the two kinds of presentists, chapter 8.6.; and also Ludlow (1999) p. 148.

[259] Dummett (1969).

[260] McDowell (1978).

[261] Wright (1980). See also Wright (1984) and Weiss (1996).

Wittgenstein's famous dictum that "meaning is use".[262] The meaning of sentences is grounded in the use which speakers make of them. The antirealist challenge to the realist is twofold:[263] The antirealist claims that the semantic realist about the past can neither explain how knowledge of realistic truth-conditions can be acquired (acquisition-challenge) nor manifested (manifestation-challenge)[264]. the acquisition-challenge (AC) says:[265]

> AC: grasping the meaning of sentences (about the past) can be acquired.

If knowledge of the meaning of those sentences is not innate but can be acquired, it should be possible to learn it somehow. The realist who accepts this, is pressed to explain how such knowledge can be acquired. The antirealist claims that the realist cannot offer such explanation. The semantic realist identifies the sense of a declarative sentence with its truth-conditions. According to the realist, past-tense sentences can be verification-transcendent, i.e. their truth-conditions may obtain unrecognisably. But if they obtain unrecognisably[266], it seems difficult to explain how we could possibly learn which they are, i.e. what the meaning of the respective sentences consists in.

The semantic antirealist on the other hand claims to have no problems meeting the acquisition-challenge.[267] Her conception of the meaning of past-tense-sentences differs from that of the semantic realist. Dummett's antirealist identifies the meaning of a past-tense-sentence with its verification-conditions.

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[262] This dictum is virulent in Wittgenstein's late philosophy. See for example Wittgenstein (1956) no. 1, 10 or 20.

[263] These two challenges also apply to other kinds of semantic realism-debates, that is to debates concerning other classes of sentences.

[264] I will not discuss these challenges in detail, but only show how they are used in the debate (but see my (1998) chapters 4-6). It will be interesting to note that the temporal truth-value links play a role here, too. See also 4.4, 4.5 and 4.6 below.

[265] See Dummett (1969) p. 362; McDowell (1976) p. 128; Wright (1980) p. 112.

[266] More specifically: the obtaining of the truth-conditions of past-tense sentences is not always recognisable at the time at which they are uttered.

[267] See Dummett (1969) p. 363.

> "We learn the use of the past tense by learning to recognise certain situations as justifying the assertion of certain statements expressed by means of that tense." (Dummett 1969, p. 363)

The verification-conditions of past-tense sentences always obtain recognisably. These circumstances are appropriate for learning the meaning of these sentences.

What can the realist do to meet the acquisition-challenge? Dummett says that the realist tries to answer it by appealing to the temporal truth-value links (see 4.4 below):

> "The realist has, after all, to meet the anti-realist's challenge to explain how we come by a notion of truth, as applied to statements about the past, considered as applying to such statements independently of our means of recognising these statements as true. His answer is that this conception is attained precisely via our coming to grasp the existence of the truth-value link." (Dummett 1969, 363)

How can the truth-value links help the realist to meet the acquisition-challenge? Dummett says that if one grasps the principles which underly the truth-value links, one also grasps the recognition-transcendent truth-conditions of past-tense sentences. But it is not so clear how this is supposed to work. After all, the truth-value links merely state which sets of sentences have *the same* truth-conditions. They do not say what these truth-conditions consist in.

The antirealist furthermore presses the realist to meet the manifestation challenge (MC):[268]

> MC: grasping the meaning of sentences (about the past) can be manifested.

To know a sentence's meaning is to be able to use it properly. The manifestation of this ability has to be recognisable. It may consist in a reaction to a state of affair which obtains recognisably. Ascriptions of this ability require that its performance is observable. Only observable

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[268] See Dummett (1976) pp. 70 f. and (1991) pp. 103 ff; McDowell (1976) p. 138 and Wright (1980) p. 112.

behaviour can count as a manifestation of such a capacity. When this capacity consists in being able to recognise the obtaining of certain states of affairs, it can only be manifested in situations in which these states of affairs obtain recognisably. Dummett seems to think that the understanding of past-tense sentences can ultimately only be manifested by reacting to the obtaining of certain states of affairs. This means that the realist has problems answering the manifestation-challenge. According to the realist, the meaning of past-tense sentences consists in their truth-conditions. And since these truth-conditions may be verification-transcendent, their obtaining may be unrecognisable too (see above). But when their obtaining is unrecognisable, a speaker cannot manifest her understanding of the sentences in question.

The antirealist thinks that she has no trouble answering the manifestation-challenge. According to her, the meaning of past-tense sentences consists in their verification-conditions. And the obtaining of verification-conditions is always recognisable. Hence whenever a sentences' verification-conditions obtain, a speaker can manifest her understanding of its meaning.

What can the semantic realist do to meet the manifestation-challenge? Dummett does not say much about this. But McDowell thinks that the (MC) is too strong and asks too much:

> "Underlying is the plausible principle that if a dispositional state is exhaustively manifestable in behaviour, the circumstances to which its operations are responses must belong to sorts which are always capable of eliciting those responses; that linguistic competence is such a state is exactly the thesis which distinguishes the anti-realist from our realist." (McDowell 1978, p. 138)

McDowell does not believe that understanding past-tense sentences is a capacity which is completely manifestable in behaviour. He thinks that it suffices that this capacity can *sometimes* be manifested (McDowell 1978, p. 139). The reason has to do with the fact that past-tense sentences are made up of "repeatable semantic atoms" and grammatical constructions:

> "Ascription of general competence with a construction, say the past tense, carries with it ascription of suitably described subcompetences with all the potential utterances in which the

construction figures (conditional, of course, on possession of competence with the other materials of those utterances)." (McDowell 1976, p. 139)

Suppose a past-tense sentence can be analysed as a present-tense sentence which is preceded by a past-tense operator (see 1.4 above). Then, according to McDowell, in order to understand the past-tense sentence "P:S", it suffices to understand the present-tense sentence "S" and the use of the past-tense operator. The idea is that manifestion of one's understanding of these components may often be easier than that of the complex sentence. Manifesting one's understanding of a present-tense sentence does not provide much difficulties, because its truth-conditions are likely to obtain recognisably. But how can one's understanding of a tense-operator be manifested? Does it suffice to manifest one's understanding of at least one past-tense sentence? Also there is another problem with such arguments from compositionality. Wittgenstein[269] famously argues that understanding the components of a sentence does not always result in understanding the complex sentence. For example, just because we know the meaning of "it is 12 noon" and of "on the sun", we do not thereby know what "it is 12 noon on the sun" means. In fact, the latter may be senseless, while its components are not. This shows that McDowell's argument fails to prove that the semantic realist does not have to take the manifestation-challenge very seriously.

4.4 Temporal Truth-value Links

The antirealist's challenges are quite decisive, but the semantic realist seems to have room for maneuvre. At the same time, the realist himself has the opportunity to attack the antirealist. His case mainly consists in questioning the antirealist's acceptance of the temporal truth-value links (see 4.3 above). Most theorists agree that the temporal truth-value links are fundamental for our understanding of how tensed language works. Hence the antirealist is pressed to show that she can accomodate them. But what are the truth-value links? What do they link and how? I have said above

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[269] See Wittgenstein (1956) no. 350.

that A-sentences ascribe A-determinations to events, times or other things (see 1.2 above). A-determinations are variable properties, they do not attach permanently to their bearers (see 1.3 above). The way a speaker can respond to this change is by using differently tensed sentences at different times. At different times, he ascribes different A-determinations to the same event.[270] It seems quite straightforward to suppose that these different types of A-sentences are connected in several ways. First of all, they are equivalent: if one is true, all are true. Also they all say something about the same event e. But it seems that they differ in what they say about it; one says that e is present, while the others say that it is past or future.[271] I will come back to this point below.

There is no uniform way of expressing the temporal truth-value links. They can be stated in various ways. But in each case, there are quoted sentences on each side of a biconditional, of both of which truth is predicated. Take for example the following instance of the truth-value links:

> "There was rain in London" is true iff "There is rain in London" was true

Or the more general formulation:

> "event e is going to take place at t2" uttered at t1, is true, iff "event e is taking place now" uttered at t2, is true

Or, using tense-operators:

> "Past: S" uttered at t2 is true, iff "S" uttered at t1 was true

Equivalences like these are called "truth-value links" for the obvious reason that they connect the truth-values of certain sentences in a systematic way:

> "Our grasp of tensed statements seeems to support a set of systematic linkages between the truth values of differently tensed statements made at different times. So, for instance, 'It is raining

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[270] This ability (in thought) is referred to as "cognitive dynamics", see 5.4 below.

[271] Following McTaggart we may even argue that what they say about the event is not only different but incompatible (one and the same event cannot be present as well as past and future). See 3.4 above.

today' was true yesterday if and only if 'It was raining yesterday'
is true today." (Weiss 1996, p. 579)

But there are other purposes they are claimed to serve as well. Crispin
Wright characterises them in the following way:

> "The truth-value links are specific biconditional principles which
> associate the truth-conditions of tensed utterances made on
> different occasions." (Wright 1984, p. 177)

While Weiss speaks of a linkage between truth-values, Wright is concerned
with the association of truth-conditions. But this of course is not the same.
While identity of truth-conditions implies identity of truth-values, the
reverse does not hold. The truth-value links indeed state that the truth-
conditions of the two quoted sentences are identical. Hence the links should
more appropriately be called "truth-condition links". These links say when
two sentences have the same truth-conditions, but they do not state what
these truth-conditions consist in. The truth-conditions of a sentence S can
be stated by means of a biconditional like this:

> "S" is true iff p

What is distinctive of these formulations is that on the left hand side (LHS)
of the biconditional there is a sentence which is quoted, and on the right
hand side (RHS) there is a sentence which is used. Also there is only one
ascription of a truth-value involved, and this we also find on the LHS.
When we look at the truth-value links, we see that they lack both these
distinctive features of the standard way of giving the truth-conditions of
sentences. In the formulations of the truth-value links we find quoted
sentences and ascriptions of truth-values on both sides of the biconditional.

On any kind of truth-conditional semantics, there is a close connection
between truth-conditions of sentences and their meanings or contents. What
is often meant by an association of truth-conditions is the association of
contents. There is a passage by Wright which suggest such an
interpretation. Here he says:

> "[... the truth-value links] serve to identify the respective
> statements effected by *Past*:S now and S at some appropriately
> earlier time." (Wright 1984, p. 195)

Weiss makes a similar claim when he says:

> "The link is used precisely to identify statements made by
> utterances at different times. [...] So we could think of the truth-
> value links in terms of identity rather than of truth: What [P(t,A)]
> expresses = what [A] expressed at t." (Weiss 1996, p. 585)

So do truth-value links link propositional contents? As I said above, a truth-
conditional semantics is not without problems. Especially in the case of
indexical sentences, meanings and truth-conditions can come apart (see 4.2
above).[272] Also it is not clear what *the* truth-conditions of A-sentences are.
While identity of meaning implies identity of truth-conditions, the reverse
does not hold. Hence one should carefully distinguish between these two
interpretations of the truth-value links. Stated as biconditional principles,
nothing yet warrants the assumption that we are dealing with a semantic
identity-relation. Further assumptions about the semantics of A-sentences
are called for (see 2.5 above).

   For Wright, the thesis of the timelessness of truth seems to play a role
here. He gives the following characterisation of this thesis:

> "The thesis of the timelessness of truth is here to be understood as
> the quite ordinary-seeming idea that what is ever true is always
> true. More specifically: whatever someone can truely state at a
> particular time can be truely stated by anyone, no matter when,
> where, and who." (Wright 1984, p. 177)

It seems to me that there are two distinct characterisations involved in this
explanation, rather than just one.[273] The timelessness of truth thesis deals
with the truth of propositions. That a proposition cannot change its truth-
value over time, might seem ordinary but is certainly not uncontroversial.
Temporalists for example claim that A-sentences express A-propositions
which are temporally indeterminate and whose truth-values may change
(see 2.5.1 above). But claiming that a true proposition can be expressed by

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[272] Prima facie, present-tensed sentences express present-A-propositions, and past-tensed
sentences express past-A-propositions. They may have the same truth-conditions, but they
are not identical. After all, while the one contains the sense of the present tense, the other
contains the sense of the past tense. See also 2.5.1 above.

[273] Künne (2003 chapter 5.2.4) independently makes the same observation.

anyone anywhere and anytime, seems not only to be a different claim altogether, but may be an even more controversial one.[274] For example it is famously argued by Frege that there are certain I-thoughts which can only be expressed by the person who refers to herself as "I".[275] Analogously one may claim that there are for example "now-thoughts" which can only be expressed at one time and never again (see 2.5.2 above).[276]

Further on in his paper, Wright concedes that his timelessness of truth thesis comprises two features which may also (under special circumstances) be assessed on their own (Wright 1984, pp. 191 ff.). Weiss also holds that there is a distinction here:

> "The timelessness of truth thesis holds that the truth predicate is not significantly tensed (at least as applied to statements): if a statement is true, it always is. A distinct thesis is that a statement may be expressed at any time—the timelessness of statements." (Weiss 1996, p. 584)

First let us take a look at what Weiss calls the "timelessness of statements" thesis (TST), which says that statements (or propositions) may be expressed timelessly. It should not be confused with another thesis, which says that statements *exist* timelessly.[277] For Frege, Thoughts exist timelessly in a "third realm", even if they are never actually grasped by anyone or expressed by any sentences.[278] But (as we saw above) when it comes to the question whether or not they can be expressed timelessly (by anyone at any time), Frege has a different view to offer. He claims that there are certain propositions which can only be expressed by some people or at some times. Hence it should be clear that we need to distinguish between two different sorts of timelessness of statements theses here: One claims that statements exist timelessly, while the other claims that statements can be expressed timelessly. One can adopt the former while denying the latter. Therefore I propose to rename the latter more appropriately (while unfortunately not

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[274] Wright wants it to be a metaphysical claim rather than one about the expressive powers of, say, the English language (Wright 1984, p. 177). But I am not sure that this helps.

[275] Frege (1918); see also Künne (2003 chapter 5.2.4).

[276] I will not discuss this point here, but will come back to it in 4.6.1 below.

[277] See also Carruthers (1984).

[278] See Frege (1918).

more simply) "the timelessness of expressibility of statements thesis" (TEST). Now, Wright and Weiss are concerned with the TEST. Why is it important for their account of the truth-value links though? It is important because they want to say that the linked sentences have the same meaning or content, see above. To ensure this, the TEST seems necessary.

Then what about the timelessness of truth thesis (TTT)? The TTT concerns the debate between temporalists and eternalists. First I want to comment briefly on a use of the expression "timelessness" which is quite inappropriate but nevertheless very popular. The expression "timeless" here seems to mean that ascriptions of truth should be tenseless.[279] But many authors claim that the so-called timelessness of truth-thesis implies that what is true is always true (see Wright's quote above). They suggest that ascriptions of truth are omnitensed. I suggest to rename the respective thesis more appropriately "the omnitemporality of truth thesis" (OTT).[280]

The OTT is not uncontroversial though. Depending on independent assumptions about time and truth, one can affirm or deny the OTT. Temporalists for example refrain from accepting the OTT for reasons having to do with what they take to be the fundamental bearers of truth (see 2.5.1 above). It is also possible to claim that the OTT has only limited application. This in turn means not to accept all instances of the truth-value links. Most importantly this is the position of those who deny the reality of the future, and who claim that only the present and the past are real (see 3.1 and 3.5 above). These theorists (neutralists) claim that truth is a property which can be acquired but not lost.[281] They claim that (most) statements about the future do not have a definite truth-value.[282] This implies that those instances of the truth-value links do not hold, where the truth-conditions of statements about the present are associated with the truth-conditions of statements about the future. Take for example:

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[279] See the distinction between atemporalism and omnitemporalism, 2.5.1 above.

[280] Analogously one can speak of the omnitemporality of expressibility of statements, instead of their timelessness, see above.

[281] Compare Künne's unilateral sempiternalist, 2.5.1 above.

[282] Here it does not matter whether their position is semantically or ontologically motivated. But as I argued above (4.2), generally semantic antirealism and ontological irrealism about the future are independent positions, in that one can be an irrealist without being a semantic antirealist. See also Künne (CT) chapter 5.3.1.

> "There is a sea-battle today" will be true tomorrow, iff "There will be a sea-battle tomorrow" is true today

Neutralists only accept the implication from right to left, but they deny the implication from left to right.[283] This does not mean that they cannot accept the truth-value links tout court, it only means that they limit their applicability.

Generally, the truth-value links are considered unassailable. Wright for example claims:

> "Wholesale rejection of the truth-value links [...] would be bound to leave us, it seems, with no clear conception of how tensed language was supposed to work at all." (Wright 1984, p. 179)

And also:

> "Without the truth-value links it simply is not clear what the understanding of a type-tensed sentence should be conceived as consisting in." (Wright 1984, p. 195)

Is it really true that the truth-value links are unassailable? What does our understanding of tensed language consist in? Does an account of it have to mention the truth-value links? I doubt that we need to appeal to the truth-value links in order to capture the content of tensed sentences.[284] I already argued that a truth-conditional semantics is difficult to sustain in the case of indexical sentences, see above. Also there are various possibilities to express the links in the first place. When we look at all the suggestions which are made for expressing the truth-value links, we see that no one account of the semantics of A-sentences can result (see below). But if that is true, they seem to be bad candidates for fundamentally explaining our understanding of A-discourse.

Let us take a look at the different kinds of formulations of truth-value links which can be found in the literature. First of all, there seems to be no agreement on what types of items should show on either side of the links. The most popular items seem to be sentences. Others are statements, i.e.

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[283] See also Wright (1984) pp. 177 f.; and Künne (CT) chapter 5.2.4.

[284] See 2.5.1, where there is no mention of truth-value links.

propositions, or utterances.[285] Both sides of the links consist of ascriptions of truth to these items. These ascriptions can be tensed, tenseless or temporally qualified. The first sort of truth-value links contains tensed truth-predicates, where truth is ascribed to differently tensed A-sentences:

(I) "Past: S" is true iff "S" was true

As we saw, A-sentences have different truth-conditions relative to different times (see 2.5 and 3.4.2 above). To bring this out, we do not need to employ tensed truth-predicates. We can instead use a tenseless truth-predicate, while indexing it to a time (see 3.4.2 above). Accordingly, we can formulate the truth-value links like this:

(II) "Past: S" is true at t2 iff "S" is true at t1

But not all formulations of truth-value links link sentences. Wright for example chararcterises the truth-value links as designed to "associate the truth-conditions of different utterances made on different occasions" (Wright 1984, p. 177). Here the connected items are utterances, which are made at certain times. A formulation of the truth-value links which contains utterances may run like this:

(III) "Past: S" uttered at t2 is true iff "S" uttered at t1 is true

Here the ascription of truth is to an utterance at a time. Note that the truth-predicate is tenseless, and it is not indexed to a time. Rather, the time-specification concerns the time of utterance.[286]

But in a later passage, Wright offers formulations of the truth-value links, which contain propositions (statements) instead of utterances. He says that on either side of the links, there is a "statement effected by the utterance of a tensed sentence at a particular time" (Wright 1984, p. 195). Here is an example of such a formulation:

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[285] Usually both sides contain the same sorts of items. But Weiss (1996) also introduces mixed versions of truth-value links where there are different types of candidates on either side. See also Peacocke, 4.4.1 below.

[286] Wright (1984) pp. 194 ff. also suggests a form of double-indexing. The thought is that the time of utterance and the time of evaluation may come apart. I will come back to this point below, see 4.6.1.

(IV) What "Past: S" expresses at t2 is true iff what "S" expresses at t1 is true

Here too, the truth-predicates are tenseless. Also it is not the truth which is indexed to a time, but the expression of the respective sentences. We can see that (III) and (IV) are quite similar. I will not here discuss which formulation is the most appropriate. I will say more about the different kinds of truth-value links and their relations, when I will discuss other temporal features like memory and diachronic inconsistency (see 4.5 and 4.6 below).

4.4.1 Appendix: Property Identity Links

Next I want to comment on Christopher Peacocke's view of A-discourse, as is put forward in his "Being Known" (1999).[287] In particular I will take a look at his so-called "property identity link" and its relation to the more common truth-value link (see 4.4 above). The (PIL) reflects the idea that, for example, sentences about the past are predications of properties which can also be predicated of entities which do not lie in the past (but rather, for example, in the present) (BN pp. 61 ff.). Before turning to various formulations of the (PIL), I want to bring up two questions: What kinds of properties are we dealing with? And what kind of entities are they predicated of?[288] It turns out that the entities, which are the bearers of the properties in question, are supposed to be *times*. Peacocke is aware of the fact that his account calls for an ontology of times, but he does not find this problematic. I will come back to this point below. What kinds properties are predicated of times? In a very interesting passage, Peacocke says:

> "If the present time and some past time can have the same property, that of being a time at which rain occurs, there must be some level of description of kinds at which they are things of the same kind. Similarly, its raining now and its having rained

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[287] Henceforth I will call Peacocke (1999) "BN".

[288] Above I said that sentences about the past (like all A-sentences) are ascriptions of properties, too (see 1.3 above). They ascribe A-determinations to events or other things (see 2.1 above). But here, of course, Peacocke has something very different in mind.

yesterday are, at some level of description, states of affairs of the
same kind." (BN p. 62)

Here Peacocke gives an example of a property which can be had by times:
the property of being a time at which rain occurs.[289] Peacocke concedes that
we need a specific notion of identity here, but he does not say which. He
believes that our intuitions suffice to grasp when two entities are of the
same kind in the relevant sense. But I am not so sure that appealing to
intuitions here is enough. As we will see below, this is not the last time,
Peacocke crucially relies on our intuitions.

   So what exactly is the property identity link? Peacocke offers several
formulations of the property identity link. He starts by giving an instance of
it:

> PIL/past: "A thought (or utterance) 'Yesterday it rained' is true if
> and only if yesterday had the same property as today is required to
> have for a present-tense thought (or utterance) 'It is now raining'
> to be true." (BN p. 45)

The PIL is a biconditional principle. In (PIL/past) there is a quoted past-
tense sentence on the left-hand side and a quoted present-tense sentence on
the right-hand side.[290] Their truth-ascriptions are prima facie tenseless[291].
But truth is not here indexed to a time.[292] The PIL does not directly link the
truth-values (or truth-conditions) of the two types of sentences though
(unlike the truth-value link). Rather it links the truth of the past-tense
sentence with a time's possession of a certain property. In the above
example: the truth of the past-tense sentence depends on yesterday's having
had the same property as today. We see that the PIL in facts *states* the

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[289] This is a peculiar kind of property: it contains the property of being a time. Obviously
only times can have this kind of property. Also note that the verb "occurs" probably needs to
be interpreted as tenseless. I wonder whether Peacocke can account for the fact that A-
sentences express A-propositions, see 2.5 above. He seems to assume that temporal
indexicals directly refer to times, see 2.5.2 above.

[290] Peacocke thinks that our intuitions about the truth of present-tense sentences are more
robust than those concerning the truth of past-tense sentences.

[291] The bearers of truth are "thoughts or utterances". But Peacocke's formulations are not
precise on this, see below.

[292] And neither is the utterance or proposition. That this is a problem I will show below.

truth-conditions of past-tense sentences, while the truth-value links merely say that the two quoted sentences have the same truth-conditions (see above).

For those who are sceptical of an ontology of times as bearers of properties,[293] Peacocke offers an *alternative account*, which unfortunately is rather sketchy:

> "An alternative way of meeting the need would be to expand the identities in question to include not only properties, but also the identity of the way it has to be today for 'Today ---' to be true with the way it had to be yesterday for 'Yesterday ---' to be true." (BN p. 46)

This is not very precise. To spell it out along the lines of (PIL/past) above:

> PIL/past/alt: A thought (or utterance) "Yesterday it rained" is true if and only if the way it had to be yesterday for "Yesterday it rained" to be true is identical with the way it has to be today for a present-tense thought (or utterance) "Today it is the case that A" to be true.

I have several misgivings about this alleged alternative account[294]. First of all I cannot see how it can be acceptable to anyone who does not want to be committed to an ontology of times. As Peacocke clearly states in the above quote, (PIL/past/alt) is not really an alternative account of (PI/past), but rather an "expansion" of it. Thus an ontology of times is still implied by it. Secondly it is unclear to me how there is to be "a way it has to be" for a sentence to be true (with respect to some time). What does this mean?[295] Does this imply that the alleged identity is really one between states of

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[293] Prior is famously sceptical of times, his tense-logic employs operators in order to avoid reference to times (see 1.4 and 2.4 above).

[294] I will not discuss it in detail here, but simply illustrate that Peacocke cannot get rid of this problem.

[295] And more crucially: why is this *not* a property of a time? We might as well say that some time has the property of being a time at which things are the way it has to be for "A" to be true.

affairs[296]? In any case we need to specify its temporal location, which in turn calls for an ontology of times.

Later on, Peacocke gives a formulation similar to (PIL/past), but now he finally (but silently) adds an important qualification, namely a reference to a time of evaluation (BN p. 57):[297]

> PI/past*: A thought (or utterance) "Yesterday it rained" is true if and only if yesterday had the same property as today is required to have for a present-tense thought (or utterance) "It is now raining" to be true *when evaluated with respect to today*.

Also Peacocke proposes to generalise these instances (BN p. 57). Using (PIL/past*) as a model, I construct the following general formulation:[298]

> PIL/past/gen: A thought (or utterance) "Yesterday it was the case that A" is true if and only if yesterday had the same property as any arbitrary day is required to have for a present-tense thought (or utterance) "It is now the case that A" to be true when evaluated with respect to that day.

This formulations says that two times (two days) have the same property, but it does not say which days. In fact, the present-tense sentence may be true relative to any day. (I will come back to this point below.) While Peacocke is quite happy with this proposal, I think there is defective. In my view, it still lacks a qualification (and so do all the other formulations offered by Peacocke). A reference to a time of evaluation is missing on the left-hand-side of the biconditional. It needs to be added that the thought (or utterance) "Yesterday it was the case that A" is true *when evaluated with*

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[296] But as we saw above, theorists like Prior are equally sceptical of times, events or states of affairs, see 2.1 and 2.2 above.

[297] But as I will show later on, this is still not enough, because a similar qualification is missing on the left-hand-side of the biconditional.

[298] Also, the PIL can of course be expanded to cover all kinds of A-sentences. A good part of he right-hand side remains unaltered. This would be a PIL for future-tense sentences: (PIL/fut): A thought (or utterance) "Tomorrow it will be the case that A" is true if and only if tomorrow will have the same property as any arbitrary day is required to have for a present-tense thought (or utterance) "It is now the case that A" to be true when evaluated with respect to that day.

respect to today.[299] Without this qualification, we can derive false instances fromf this link. For example

> "Yesterday it was the case that A" *when evaluated with respect to tomorow*, is true if and only if yesterday had the same property as any arbitrary day is required to have for a present-tense thought (or utterance) "It is now the case that A" to be true when evaluated with respect to that day

is a false instance, because in this case it is not yesterday but *today* which has to have the same property as as any arbitrary day is required to have for a present-tense thought (or utterance) "It is now the case that A" to be true when evaluated with respect to that day. Now this is how a corrected formulation of the property identity link should look like, on my view:[300]

> *PIL*/past1: A thought (or utterance) "Yesterday it was the case that A" is true *when evaluated with respect to today* if and only if yesterday had the same property as any arbitrary day is required to have for a present-tense thought (or utterance) "It is now the case that A" to be true when evaluated with respect to that day.

Alternatively, we can formulate the PIL in a way which gets rid of indexical terms like "yesterday" or "today", and which employs terms for times (days) instead:

> *PIL*/past2: A thought (or utterance) "Yesterday it was the case that A" is true when evaluated with respect to *d2* if and only if *d1 has* the same property as any arbitrary day is required to have for a present-tense thought (or utterance) "It is now the case that A" to be true when evaluated with respect to that day.

This way, the PIL may be most uncontroversial among A-theorists, B-theorists, eternalists and temporalists.

Despite all difficulties, Peacocke is convinced that the property identity link is crucial for our understanding of discourse about the past. He says

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[299] I suppose that Peacocke wants the truth-predicate everywhere to be read tenselessly. Maybe he was mislead by the present-tense-sound of "is true" on the left hand side of the biconditional and hence forgot to add the qualification here.

[300] Again, this may be expanded to other tensed sentences, see above.

that "almost everyone will agree that the biconditionals which are examples of the property-identity link are true biconditionals." (BN p. 58).

And even:

> "This property identity is a very substantial constraint upon the metaphysics and epistemology of the past. No account which is inconsistent with it can be acceptable." (BN p. 46).

What Peacocke here says about the property identity links resembles what other philosophers claim concerning the significance of the *truth-value links* (see 4.4 above). Peacocke concedes that his "property identity link is closely related to one of the principles which goes under the name of 'the truth value link' in the literature" (BN p. 57). By "closely related" he in fact means that the property identity link *entails* the truth-value link (BN p. 58).[301] This means that if we accept the property identity links, we also have to accept the truth-value links as well. The reason why Peacocke prefers the property identity links over the truth-value links, is, he says, a matter of focus:

> "We have very clear and robust intuitions about what properties something must have for a present-tense predication of it to be true. If the property identity principle is correct, those intuitions constrain any account of what is involved in the truth of corresponding past-tense predications." (BN p. 58).

I am not so sure that everyone shares these intuitions. To wit, Peacocke is the only theorist I know who prefers the property identity links over the truth-value links. I also still find it hard to accept that all A-sentences are ultimately ascriptions of properties to times. And I am not convinced that Peacocke can accommodate the worries of those who are sceptical of an ontology of times (see above).

Above I said that there is no uniform formulation of the truth-value links. This is the formulation which Peacocke offers as an instance of the truth-value link:

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[301] The converse only holds under the supposition of an ontology of times, he says (BN p. 58). This seems to prove that Peacocke's account does suppose such an ontology after all, see above.

> TVL: "A thought (utterance) 'Yesterday it rained' is true iff the sentence-type (thought-type) 'It is now raining' is true when evaluated with respect to yesterday." (BN p. 58)

Something is interesting here: on the left-hand side, we have got a thought or utterance, while on the right-hand side we have got a sentence-type or thought-type. All of Peacocke's formulations of the PIL instead feature thoughts on both sides. I have to admit that I do not see any rationale for this difference.[302]

Again I see the same flaw in (TVL) as in Peacocke's formulations of the (PIL) (see above). On the left hand side, we need to add a reference to a time of evaluation. We need to add that the thought (utterance) "Yesterday it rained" is evaluated with respect to *today*. Otherwise we can derive false instances from (TVL). For example, when the past-tense sentence is evaluated with respect to *tomorrow*, it may be true, while the present-tense sentence, evaluated with respect to yesterday, is false. This is how the correct link should look like, on my view:

> *TVL*1: A thought (utterance) "Yesterday it rained" is true *when evaluated with respect to today* iff the thought (utterance) "It is now raining" is true when evaluated with respect to yesterday.

Again, we may prefer to state the TVL in a most neutral way, namely by exchanging indexical terms like "yesterday" and "today" for terms for times (days), see above:

> *TVL*2: A thought (utterance) "Yesterday it rained" is true when evaluated with respect to *d2* iff the thought (utterance) "It is now raining" is true when evaluated with respect to *d1*.

The question remains how the truth-value link is supposed to be entailed by the property identity link. Peacocke simply states that it is, but he does not show it. When comparing the two links quite generally, it becomes obvious that they differ in several respects. We saw that the PIL *states* the truth-conditions of past-tense sentences, while the truth-value links merely say that the two quoted sentences have the same truth-conditions. While (PIL) links the past-tense thought with a present-tense thought which may be

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[302] Also I do not know what a "thought-type" is.

evaluated with respect to *any* time, (TVL) links the past-tense thought with *one specific* present-tense thought, namely the one evaluated with respect to yesterday. This is a very significant difference which has consequences for what these links imply. The (PIL) implies that two true thoughts of the form "Yesterday it was the case that A" and "Today it is the case that A" share the following feature: both ascribe the same property (whichever that may be). But *what* they say about this property, is completely different. While the former says that it is possessed by yesterday, the latter says that it is possessed by today. (Hence one can be true and the other false.) What (PIL) does *not* imply is that the two *thoughts* are in any way equivalent, let alone identical. If the referents of "yesterday" and "today" are non-identical (which they may very well be), the thoughts are non-identical as well and may also be non-equivalent. The (TVL) on the other hand, of course states an equivalence-relation. (This is its whole point.) According to some theorists, it also makes a claim concerning the identity of the linked thoughts (see 4.4 above). In any case, the referents of "yesterday" and "today" are identical. Therefore "Yesterday it was the case that A" and "Today it is the case that A" (relative to the appropriate times) have the same truth-conditions, and they may even express the same thought. Hence it is difficult to see how the (PIL) and the (TVL) should be taken to imply each other. All in all, I cannot see any good reason why we should conduct our debates in terms of property-identity links instead of the much more popular and straightforward truth-value links.

4.5 Realism and Memory

The temporal truth-value links play an important role in the debate between semantic realists and antirealists. As I said above, the realist claims that the antirealist cannot acknowledge them (see 4.3 and 4.4 above). This the realist tries to show in different ways. Especially the antirealist about the past is attacked by the realist along these lines. The first of these attacks has to do with the notion of memory. Realists and antirealists concerning the past disagree over the right conception of memory[303]. The realist claims that

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[303] For discussion see Ayer (1951) and (1956); Cockburn (1987); Deutscher & Martin (1966); Dummett (1992a); Hoerl (1996); Naylor (1973).

the antirealist cannot account for the "dependent character" memory (see below). Here is how the temporal truth-value links play a role in this dispute. Picture the following situation: In the night of 31 October 1999, while reading in her bed, Emma hears a loud noise and a rumbling in the living-room. Startling, she mumbles to herself,

A: "There is a thief in the living-room now."

Then—due to a strong sleeping-pill which she takes—she falls asleep. The next morning, on 1 November 1999, she remembers the noises she heard the night before, and she is convinced that they were real. She calls her friend Pia in order to tell her what happened. She says,

B: "Guess what, there was a thief in the living room last night."

Pia does not believe what Emma tells her. Emma is angry about her friend's disbelief. But on 1 November 1999, she can do nothing to convince Pia that she is right. Surprisingly, there are no traces of a burglary in Emma's living-room.

What can we say about the truth or falsity of Emma's belief? There are two straightforward (realist) ways to describe her situation. First, let us suppose that there really is a thief in Emma's living room on 31 October 1999. This means that Emma then forms and expresses a true belief (A). By keeping this belief (and not changing her mind) until the next day, she still holds a true belief on 1 November as well. Only this time, she expresses it differently (B). But so much is clear: if Emma is right on 31 October, she is right on 1 November as well. Alternatively, let us assume that there really is *no* thief in the living room, but it is Emma's cat which makes the noise in the night. In that case, Emma forms and maintains a false belief, and she expresses a false belief by uttering (A) and (B). But in any case, her utterances A and B have the same truth-value, that is, they are equivalent. Both of these (realist) accounts conform with the (temporal) truth-value links which state an equivalence-relation between certain differently tensed sentences uttered at different times (see 4.4 above). Concerning our example, this is an instantiation of the truth-value links, which says that (A) and (B) are truth-value linked:

I: "There is a thief in the living room now" uttered during the night of 31 October 1999, is true iff "There was a thief in the

living room last night" uttered in the morning of 1 November 1999, is true

The antirealist opposes the view that sentences can be unrecognisably true (see 4.2 above). For her, an utterance is true iff it can be verified. Hence, being true may not be a permanent property of utterances, but one which attaches to them at some times but maybe not at others.[304] There are different forms of antirealism, depending on how the notion of verification is interpreted (verification by whom, when and how conclusively). For our purposes, we can say that roughly the antirealist has a reductionist view of truth and holds the following principle:

Verification Principle 1: An utterance is true iff there is good evidence in its favour at the time of its production

Let us once more look at Emma's experiences during the night of 31 October 1999. She hears a loud noise and some rumbling in the living room. Based on this evidence, she forms the belief that there is presently a thief in the living-room. Let us say that this counts as good evidence; therefore we can say that her utterance (A) is justified (true) when she makes it. But what about her utterance B on the next morning? Unlike on 31 October, on 1 November, there are no objectively accessible traces which could count as warrants for Emma's belief. But why then is Emma so convinced that she is right? This is easy to tell: Emma on 1 November *remembers* her experiences of the night before. She vividly remembers hearing the noises, feeling some sort of panic, and on that basis forming the belief that there is a thief in the living-room. In other words: For Emma, her memory of this experience functions as a warrant for the belief she expresses by means of (B). It does not so function for her friend Pia however, and that is why Pia does not believe what Emma believes. For Pia, Emma's memory is not directly accessible. But nothing commits the antirealist (who accepts Verification Principle 1, see above) to claim that all warrants have to be objectively accessible by everyone at any time.

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[304] Here I use "utterances", but I could also use "propositions", because I consider the contents of these utterances. The point is that, according to the semantic antirealist, not only temporally incomplete propositions may have variable truth-values, but also complete ones. Again, this is different from the debate between temporalists and eternalists, see 2.5.1 above.

Now this is the antirealist's account of Emma's story: Emma's utterance (A) is true because of the evidence available at the time of (A)'s production (noises in the living-room). And Emma's utterance (B) is true because of the evidence available to her at the time of B's production (her memory of the noises in her living-room). Both utterances are true, and consequently, the antirealist can account for Emma's story in a way which is compatible with truth-value link (I).

John Campbell challenges the antirealist's entitlement to this account.[305] He claims that the antirealist cannot make use of memory as a warrant for utterances of past-tense sentences. In his account, the "dependent or stepwise character of memory" (PSS p. 233) plays a crucial role. He gives the following example to illustrate this point:

> "Suppose that I now have evidence about a particular past event: I remember that the butler was polishing a revolver, for example. The dependent character of memory means that this memory does not count as knowledge unless I make it in virtue of my having had some access to that polishing, otherwise than through memory. What is required is that, for example, I saw him doing it." (PSS p. 239)

According to Campbell, memory has to be founded in something other than memory, for example in perception, in order to yield knowledge:

> "In one central type of case, one forms a judgement, perhaps on the basis of perception, and the status of that original judgement as knowledge is essential to the epistemic status of one's subsequent memory judgement. The groundedness of the memory judgement depends on the groundedness of the original judgement." (PSS p. 233)

Knowledge of course is an important feature of any antirealist theory of truth and meaning.[306] Her conception of truth is epistemically contrained insofar as it links truth with verifiability: only what can be *known* to be

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[305] John Campbell (1994), which I will henceforth call it "PSS", chapter 7. The same chapter appears in Heck (1997).

[306] See principle (P), 4.2 above.

true, in her view, may count as true. (But it is important to note that the antirealist appeals to an *antirealist* account of knowledge as well.)

Campbell claims that this dependent character is a feature which memory shares with testimony[307]: "Testimony depends on there being ways other than testimony of finding out how things are" (PSS p. 233). But surely there is also an important difference between testimony and memory. Campbell says (see the quote above) that memory depends on there *having been* ways other than memory of finding out how things were. This claim, unlike the one about testimony, does not imply that there have to be other *presently* available warrants besides memory, in order for a sentence about the past to be true. That this is an crucial difference, and one which makes memory differ from testimony, we will see later on.

Then why does Campbell think that the dependent character of memory presents a problem for the antirealist's account of past-tense sentences? The antirealist he has in mind, identifies the truth of a judgement with the *present or future* availability of evidence for it (PSS p. 225):[308]

> Verification Principle 2: An utterance is true iff there is good evidence in its favour at the time of its production or later

Campbell is certainly right in making a distinction between the time of utterance and the time of evaluation (PPS p. 228). This will become clearer later (see 4.6 below). For the present purposes, the full force of this distinction is not important. What is important in our case, is the claim that the antirealist about the past cannot appeal to any evidence which was available *before* the time of utterance. On 1 November, nothing can count as evidence for the truth of Emma's utterance (B), which is *earlier* than that utterance or which depends on something which is ealier than it. Therefore, Emma's experiences on 31 October cannot feature as a warrant for her later utterance (B). Nor can anything which depends on it. This means that the antirealist is not entitled to make use of memory as a warrant for past-tense utterances, because memory always depends on features which precede their production. This leaves Emma with no warrant for her utterance (B)

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[307] See also Dummett (1992a).

[308] See also Wright's account of I/NF-antirealism, according to which sentences are true if they are in princile/ now or in the future decidable; Wright (1984) p. 182.

on 1 November. Consequently, the antirealist is forced to claim that while Emma's utterance A is true, her utterance B is false. She thereby violates the temporal truth-value link (I).

I want to argue that Campbell's critique is not adequate. If his critique were successful, it would be be far too successful. It would be too successful because it would prohibit the antirealist from appealing to *any* kind of warrant for past-tense sentences. Since Campbell rules out all warrants which depend on how things were in the past, the antirealist can neither appeal to memory nor to any other kind of warrant for past-tense sentences. This is so because *any* kind of evidence for a past-tense sentence is dependent on features which are located at some earlier time than the utterance of the sentence. This is precisely why they count as warrants. Let us suppose that on 1 November 1999, Emma's living-room *does* show traces of a burglary (cushions all over the place, broken glass etc.). Then in order for those traces to count as warrants for Emma's utterance (B), they have to depend on what happened the night before, on 31 October. But I think it should be clear that this "dependent character" of these traces by no means prevents the antirealist from being entitled to appeal to them. After all, if they did not depend on earlier events, they would not count as traces in the first place. The antirealist, who appeals to such traces, does exactly *not* appeal to events in the past, but only to what is *presently* accessible. And this, after all, is the whole idea of her position.

As far as I can see, memory-based warrants are on a par with other warrants for past-tense sentences, concerning their dependency on what happened earlier. The only difference I can make out, is that memory-based warrants are not intersubjectively accessible, while others are (see above). But this point is not related to Campbell's criticism at all, and it does not necessarily pose a problem to the antirealist.

Campbell not only claims that the antirealist cannot appeal to memory as a warrant for past-tense sentences, he also claims that the antirealist cannot give any sensible account of memory at all. Campbell argues that this is so because:

> "Memory depends on the existence of links between the truth values of differently tensed judgements made at different times. [...] Memory could not give us knowledge of the past if it were not for these truth-value links." (PSS p. 226)

When he says that memory depends on the temporal truth-value links, this should not be understood as a claim about memory as a faculty, I take it. Rather it is supposed to be a claim about how we assess memory-judgements. Campbell says that we use the truth-value links to criticise memory (PPS p. 228). Only what is in accordance with the truth-value links, can count as (genuine) memory. Thus he in effect claims that our understanding of sentences about the past is constitutive of what counts as memory. And since the antirealist may have trouble accommodating the truth-value links, she also has trouble giving a sensible account of memory.

I cannot see how the realist's claim (the claim that the truth-value links are constitutive of what counts as memory) can do any work here. In particular I cannot see how we can use the truth-value links to assess memory-judgements. The idea probably is: the left-hand side of the biconditional features a past-tense sentence which is memory-based. The right-hand side features a present-tense sentence. Since present-tense sentences are also easier to assess than past-tense-sentences, we may use the right-hand side to evaluate the left-hand side. But the problem is: the right-hand side of the biconditional does not help us in evaluating the left-hand side. In assessing memory-judgements, it is not the case that the truth-value links can tell us whether they are true or not, because in order to do so we would have to already know the truth of the present-tense sentence on the right-hand side of the biconditional.[309] Also: if we somehow *independently* knew the truth-value of the present-tense sentence, the question whether the memory-judgement is true, would be pointless. Granted, the right-hand side contains a present-tense sentence. And usually it is easier to evaluate present-tense sentences than it is to evaluate past-tense sentences. But the problem is: In order to evaluate the right-hand side, we need to assess the truth-value which the present-tense sentence has relative to *yesterday*. And this is exactly as hard as evaluating the past-tense sentence relative to today.[310]

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[309] Compare 4.3 above, where I said that the truth-value links cannot help the realist to answer the acquisition-challenge (AC).

[310] Compare: assessing the *assertibility*-conditions of past-tense sentences is much easier since they usually feature present-tense sentences which are evaluated with respect to the *present*, see 4.2 above.

So far I have tried to show that the antirealist can rebut Campbell's realist challenge. Now I want to quickly mention one strategy how the antirealist can furthermore give a positive account of memory herself. In order to do so, she may appeal to our practice of asserting sentences about the past, based on memory impressions: Relying on our memory and sometimes also turning over some of our memory-judgements when better evidence comes along, is simply what we do. When we utter a sentencet about the past on the basis of our memory, the sentence is justified by that memory-impression. At the time of utterance (and afterwards), there is no further question as to what justifies this warrant. We usually do not need "second-order" warrants. The antirealist may claim that memory is a *defeasible* warrant which *criterially* justifies some of our sentences about the past.

The notion of criteria is first introduced by Wittgenstein, and it is further developed by Wright and others.[311] According to the standard interpretation, criteria are typically multiple, they deliver necessarily good evidence (as a matter of "definition"), but evidence which is nevertheless defeasible. Recognition of their satisfaction delivers knowledge and it is publically accessible (see Wright 1982, pp. 383 ff.). I think that a case can be made for the claim that memory-impressions are good candidates for playing this role of criteria for past-tense sentences (see also Wright 1978, pp. 372 ff.). This is of course only a sketch of this account, but there is hope for the semantic antirealist that it can be worked out in greater detail. In any case, Campbell's claim that only the realist can give an adequate account of memory, cannot be sustained.

4.6 Diachronic Inconsistency 1

Whether or not it is granted that the antirealist can appeal to memory as a warrant for past-tense sentences, there is still another problem for her. We can imagine a situation when *all* the evidence for a past-tense sentence is lost, whether it is memory-based or not. Let us once more look at Emma's story (see 4.5 above), but this time assuming that instead of taking a sleeping-pill, Emma accidently takes a mysterious drug which causes her to

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[311] Wittgenstein (1956) and (1958); Wright (1978) and (1982); see also Baker (1974).

loose all memories of the night of 31 October 1999. Also there are not visible traces of a burglary in Emma's living-room. Nevertheless, she wakes up the next morning and sincerely produces the utterance (B). In this case, the antirealist has to admit that on 1 November 1999 (and supposedly at any later time), no evidence whatsoever for Emma's utterance (B) is available. This means that on her account, Emma's utterance A is true, while her utterance B is false. But by saying this, the antirealist violates the truth-value link (I), see 4.5 above.

The antirealist can make a further move though. She puts forward a slightly but significantly different Verification Principle, namely:[312]

> Verification Principle 3: An utterance is true iff there is good evidence available in its favour at the present time of evaluation (now)

Instead of saying, Emma's utterance (A) is true because of the availability of evidence at the time of A's production (31 October 1999) or afterwards, the antirealist can now claim, that (A)'s truth depends on the *present* availability of evidence, referring to what is present to whoever evaluates (A). And the same with (B): The truth of Emma's utterance (B) does not depend on the availability of evidence at the time of (B)'s production (1 November 1999) or afterwards, but likewise on the *present* availability of evidence for whoever evaluates (B). Whenever we enquire into (A)'s and (B)'s truth at one and the same time, the available evidence turns out to be the same for both utterances. That is, whatever counts as evidence for (A) now, also counts as evidence for (B) now. Consequently, relative to the same time of evaluation, A and B always turn out to have the same truth-value. This way, the antirealist can sustain the truth-value link (I).

To illustrate: suppose that our present time of evaluation is contemporary with or later than 1 November 1999. Then what is the evidence which is available to us now concerning the truth of (A) and (B)? Since there are now no traces of any burglary in Emma's living-room, and since Emma has no memory of anything she experienced during the night of 31 October 1999, nothing can now count as evidence for the truth of (A),

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[312] See also PSS p. 228. The idea is that the antirealist about the past is at the same time a sort of presentist (see 4.2 above) She may reduce the truth of past-tense statements to that of statements about *presently* available evidence. See also below.

uttered on 31 October 1999. Therefore, we may now evaluate it as false. Likewise, Emma's utterance (B) on 1 November 1999, on the same basis of presently available evidence, we may now evaluate as false. Therefore, we may now say that Emma holds false but consistent beliefs.

This step seems to save the antirealist from violating the truth-value link, but it is still open to criticism (see also PSS pp. 229 f.). Granted, relative to one and the same time of evaluation, utterances (A) and (B) have the same truth-value. This way the antirealist can maintain the truth-value links relative to a time of evaluation. But as time passes, there are different times which are successively present to us, and likewise there may be different times of evaluation. And when comparing *different* times of evaluation, these evaluations may turn out to be different. Let us suppose that 31 October 1999 is now*, that is, let us take it as our time of evaluation. Consequently the utterance (A) is now* true, because there is evidence available for it now*, namely noises in Emma's living-room. For the same reason, the utterance (B) on 1 November 1999 is true, likewise evaluated from our present time of evaluation. Relative to now*, (A) and (B) are true, which is in accordance with the truth-value links. But now, the realist may reply, the inconsistency appears on the level of *evaluation*: While the antirealist evaluates the utterances (A) and (B) as both true at one time of evaluation (now*), she evaluates them as both false at any later time of evaluation (now, for example 1 November 1999). Even though the antirealist can account for the consistency of Emma's beliefs and the validity of the truth-value links relative to any one time of evaluation, she cannot account for her own consistency in evaluating Emma's beliefs across times. Now it is the antirealist herself who is subject to diachronic inconsistency.

The antirealist may reply that it is impossible to compare evaluations at different times like this. (She may claim that there is no such "sideways on" view of time, PSS p. 247.) She holds that in order to compare evaluations made at different times, we again would have to assume one *present* time of evaluation of these evaluations. Again the realist could reply that there will be more than one "present" time of evaluation of evaluations. And the antirealist could reply in the same fashion as above. And so on ad infinitum. That is, whenever the realist appeals to different temporal perspectives of evaluation, the antirealist replies that we need *one present* perspective from which to evaluate them. It is not clear if anyone can claim

to "win" this debate at the end of the day. The realist is not able to prove that the semantic antirealist cannot account for the temporal truth-value links. But what this last bit of dialectic seems to show is that the semantic realist and antirealist differ with respect to some underlying metaphysical conception after all:

> "What the realist would like to do is to stand in thought outside the whole temporal process and describe the world from a point which has no temporal position at all, but surveys all temporal positions in a single glance. [...] The anti-realist takes more seriously the fact that we are immersed in time: being so immersed we cannot frame any description of the world as it would appear to one who was not in time, but we can only describe it as it is, i.e., as it is now." (Dummett 1969, p. 369)

As we can see, the semantic realist seems to hold a B-theory of time which takes the world to be static, while the semantic antirealist seems to prefer an A-theory, according to which it is dynamic. But Dummett of course is sceptical of framing the dispute like this, see 4.2 above.

4.6.1 Diachronic Inconsistency 2

Dummett suggests one other stragety for the antirealist to avoid the charge of diachronic inconsistency. This suggestion is then criticised by Wright (1984 pp. 192 ff.) and both in turn by Campbell (PSS pp. 242 ff). Dummet claims that the antirealist might, in order to answer this challenge, interpret the predicate "true" as being used differently (incommensurably) at different times (Dummett 1969, p .373). What she expresses by its means at one time differs from what she expresses by its means at other times. Furthermore, she cannot express the same meaning which she attaches to it at one time, at any other time:

> "But the antirealist replies that he will not in a year's time mean the same by 'absolutely true' as he now means by it: indeed, he cannot by any means at all now express the meaning which he will attach to the phrase in a year's time. [...] The antirealist need not hang on to the claim that the meaning of the expression alters: he may replace it by the explanation that he cannot now say what he will in a year's time be saying when he uses it." (Dummett 1969, p. 373)

How can this strategy enable the antirealist to accomodate the truth-value links? Dummett's suggestion contains the following thought: the truth-predicate "is true" is interpreted as "is now true". Relative to different times, it expresses something different. Even when it attaches to a B-sentence "S", the complex sentence "S is true" is an A-sentence.[313] For example, "(It is true that) the earth is made of green cheese" does not express the same proposition relative to different times, because they are made true by different populations of facts (see Dummett 1969, p. 373). At t1, it expresses the proposition [p], which may be true, and at t2, it expresses the proposition [q], which may be false, and [p] ≠ [q]. Also it is not possible at any time which is not t1, to express [p]. In this case, the antirealist cannot be accused of saying that *one and the same* proposition is true with respect to one time and false with respect to another. And thereby she cannot be accused of violating the truth-value links.[314]

Wright (1980 and 1984) is not happy with Dummett's strategy.[315] He argues that it has the consequence that the antirealist cannot account for any notion of diachronic inconsistency (nor diachronic consistency, I believe):

> "Intuitively, there is no difficulty in the idea of a contradiction between statements made at widely different times—times sufficiently far apart, in particular, to determine, according to the proposal, substantially different fact populations. But the result of construing the truth predicate as, in effect, a now-oriented indexical is that it becomes quite unclear how such a contradiction can occur. [...] what account are we now to give of the growth of human knowledge, the hard-won gradual defeat of superstition and error in which we are encouraged to believe, etc. etc.? [...] In

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[313] This supposes that all sentences express temporally determinate A-propositions (see 2.5.1 above). But Dummett here not so much argues from a semantic point of view. Rather he says that all these sentences are *made true* by different populations of facts (Dummett 1969, p. 373). Note that the idea of shifting populations of facts calls for a conception of A-facts, see 2.2 above.

[314] Of course not all sentences contain the truth predicate explicitly. Nevertheless, Dummett's strategy should be seen as applying to all sentences uttered or judged. By evaluating a sentence, we ask whether it is true or not true. With every sincere utterance of a declarative sentence we make a claim to truth.

[315] Wright does not reject semantic antirealism account on the whole. He argues that the antirealist should adopt a different strategy from the one suggested by Dummett; Wright (1984) pp. 195 f.

> short: if something can still be made of the notion of diachronic
> inconsistency, the original objection ought to be reformulable in
> terms of the revamped notion; and if nothing can now be made of
> it, that seems too high a price to pay." (Wright 1984, p. 194)

Wright argues that Dummett's antirealist cannot reconstruct a satisfactory
account of diachronic inconsistency. But what is a satisfactory account of
diachronic inconsistency? First we need to specify what diachronic
inconsistency is, and then compare this notion with the one that the
antirealist may offer: suppose in the stone-age, Peter says: "It is true that
the earth is made of green cheese"; and today, Mary says: "It is not true that
the earth is made of green cheese". We would like to say that what Mary
expresses today is precisely the opposite of what Peter expressed in the
stone-age[316]; there is a diachronic inconsistency between Peter's judgement
and Mary's judgement.

But this account of diachronic inconsistency is precisely not available
for the antirealist who adopts Dummett's strategy. According to that
strategy, "It is true that the earth is made of green cheese" does *not* express
the same proposition when uttered in the stone-age and today, because they
are made true by a different population of facts. Peter and Mary can say the
same form of words ("It is true that the earth is made of green cheese"), but
they express different propositions at different times. Moreover, as
Dummett says, each proposition can only be expressed at one time
(Dummett 1969, p. 373).[317] It is impossible for Mary to express now what
Peter expressed in the stone-age. So it is not the case that, at any one time
of evaluation, we can compare whether or not Mary and Peter have
different attitudes towards the *same* proposition. Thus we cannot ever
diagnose genuine diachronic inconsistency at all.

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[316] If we take A-sentences to express temporally determinate A-propositions, we need an
appropriate criterion of propositional identity which allows to say when two sentences
express the same proposition (or its negation) (see 2.5 above). I already mentioned above
that there may be difficulties to say when two such propositions are exactly identical. But
Dummett's proposal here seem to raise still other difficulties.

[317] Hence the OEST is not satisfied here (see 4.4 above). Since Dummett's antirealist seems
to claim that all propositions are now-propositions, and since now-propositions may only be
expressed at one time (see 2.5.1), it follows that each proposition can only be expressed at
one time (but by different people simultaneously).

Campbell, on the other hand, does not see any such problem with Dummett's proposal. He thinks that the antirealist who adopts Dummett's strategy can after all maintain a notion of diachronic inconsistency which suffices to explain what he takes Wright to have asked for:[318] to explain how we can account for a growth of knowledge, how we can now believe truths that we have not believed before:

> "The antirealist will reply that the history of knowledge, comparing hypotheses advanced at different times, must itself be given from some temporal perspective. In so doing, the scholar will use 'true' differently from how he will use it in a year's time. He will tell the story of the past differently in a year's time. But for all this, he has a notion of diachronic inconsistency, in that he can compare the (absolute) truth-values of statements made at different times. And this, he will say, is the only notion of diachronic inconsistency required to give an account of the growth of knowledge. Wright's remarks depend on his not having seen that the incommensurability move that he is criticizing already requires the distinction between the time at which a statement is made and the time at which it is being assessed for its (absolute) truth-value." (PSS p. 243)

Campbell claims that Dummett's antirealist can maintain a notion of diachronic inconsistency, namely by comparing the truth-values of sentences uttered at different times, from just one temporal perspective, the present time of evaluation (see 4.6 above). Campbell claims that at any one time of evaluation, one can compare for example what Peter and Mary previously said, and diagnose diachronic inconsistency. Relative to any one time of evaluation, Mary's and Peter's utterances are *understood and evaluated* as contradictory. This is so because what is evaluated is what the sentences in question express *at the time of evaluation*. Relative to any one time of evaluation, Mary's and Peter's utterances mean a contradiction, while across times, these can be *different* contradictions (at t3, the contradiction may be between [p] & [¬p], whereas at t4, the contradiction may be between [q] & [¬q], etc.). Hence diachronic inconsistency can be

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[318] I doubt whether this is really all that Wright has asked for, see above.

diagnosed of sentences which are understood and evaluated relative to any one time[319].

Even if Campbell is right that the antirealist can retain *some* notion of diachronic inconsistency, it should be clear that this notion is not a satisfactory one[320]. I want to argue that Campbell's antirealist cannot make sense of what seems to be the most obvious fact about evaluation of sentences: that we always seek to evaluate what a sentence expresses *at the time of its utterance*, and not what it expresses at the time of its evaluation. Usually the time of utterance and the time of understanding are identical.[321] As I will show, this has the consequence that Campbell's antirealist not only violates, but ridicules the temporal truth-value links. To illustrate, take the following instance of a truth-value link:

> L: "It was raining in London yesterday" uttered on Tuesday (8 January 2002), is true iff "It is raining in London today" uttered on Monday (7 January.2002), is true

On Wednesday 9 January.2002 (which I take to be our time of evaluation and understanding), "It is raining now" and "It rained yesterday" express two different propositions: [t] and [u]. Furthermore, relative to that day, they are not equivalent, because they are true in quite different circumstances: on Wednesday, "It is raining now" is true iff it is raining on Wednesday, while "It rained yesterday" is true iff it rained on Tuesday. Hence [t] and [u] can receive different truth-values, which violates the truth-value links. But of course the truth-value link is not *supposed* to hold between what "It is raining now" and "It rained yesterday" express relative

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[319] It may be wondered whether this is really diachronic inconsistency. Rather it may be claimed that it is an instance of *synchronic* inconsistency (as Wright suggests, personal remark).

[320] Campbell, even though he believes that this notion suffices to satisfy what Wright has asked for, agrees that this notion is flawed (personal communication). But his reason for saying this has to do with memory (PSS chapter 7); see 4.5 above. I want to give a different argument for why this strategy fails.

[321] That the time of utterance and the time of evaluation may come apart, is uncontroversial though (see 4.6 above). It is something which Wright—contra Campbell, see above—may very well take into account.

to any *one* time.[322] Rather it is supposed to hold between what these sentences express relative to two consecutive days. This shows that Campbell's account of how the antirealist can accomodate diachronic inconsistency should be rejected. Hence it cannot help to support Dummett's strategy for the antirealist above. To sum up: we have not reached a clear result as to whether or not the antirealist can account for the truth-value links, memory and/or diachronic inconsistency. It is not clear that along Dummettian lines, these debates can be resolved.

4.7 Conclusion

Dummett's semantic approach to realism-debates has proved instructive when compared with the ontological debate. Concerning Tense, the semantic and the ontological debates are related, but not one-to-one. First of all, there is a surprising connection between ontological realists and semantic antirealists: I argued that all semantic antirealists are A-theorists, but not vice versa. I said that the A-theorists' main motivation lies in their belief in the unreality of the future. This claim is indeed often influenced by epistemic considerations. But since not all A-theorists claim that truth is epistemically constrained, some of them may be semantic realists. This shows that Dummett's framework does not cover everything that is at stake in the debate between A- and B-theorists. I also showed that the moves employed in the semantic debate fail to decide which side may win. Especially the the temporal truth-value links, which play an important role here, are not as unassailable as most theorists think they are. Also they fail to be the decisive stepping-stone for semantic antirealists. Hence there is room for employing futher approaches to realism-debates generally and to the debate concerning Tense in particular, which may be more promising.

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[322] Anybody who thought that the two sentences were truth-value linked relative to any *one* time, would not understand how temporal indexicals work.

5. Wright's Realism

In his "Truth and Objectivity", Wright argues that neither the traditional ontological nor Dummett's semantic approach to realism can cover everything that is at issue between realists and antirealists generally. He suggests a new way of distinguishing realists from antirealists which is supposed to do justice to all kinds of realims-debates. He claims that realists and antirealists mainly disagree about the appropriate notion of truth for statements of a given subject-matter. But truth is not the exclusive property of realism. Wright suggests a minimal conception of truth which is to serve as neutral ground between realists and antirealists. Any metaphysically more substantial notion of truth is to count as realistic. But departure from minimal truth can take different forms. It is mainly tied to a substantial notion of correspondence. I will undertake the apttempt to apply Wright's framework to the debate about Tense. I will argue that doing so can be very useful and instructive for making explicit some of the crucial underlying ideas in this debate. Especially his Cosmological Role-constraint turns out to be a good tool for distinguishing the different kinds of realists and antirealists about Tense.

5.1 Irrealisms

In his "Truth and Objectivity", Wright[323] is concerned with the question how we should conduct realism-debates:[324]

> "In this short study I want to return to a well-worked -some would feel, no doubt, mined out- issue in recent philosophy: the question of how we should best understand the contrast between so-called realist and anti-realist views concerning different areas of our

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[323] Wright (1992) I will henceforth call "T&O".

[324] See also Wright (1988), (1993) and (1996a).

thought and discourse, and of how the debate between them might
most effectively be prosecuted." (T&O p. 1)

Wright distinguishes two kinds of strategies for realism-debates which have
been proposed so far (T&O pp. 5 f.): the ontological and the semantic
approach. He argues that neither can satisfactorily deal with all of the
different sorts of realism-debates. Here I will discuss his treatment of the
ontological approach. Later I will turn to his treatment of the semantic
approach (5.2 below). Wright makes out two different kinds of ontological
realism-debates. Here opposition to ontological realism is called
"irrealism". The first kind of irrealism is an error-theory, while the second
is a form of expressivism. First I will sketch these two positions quite
generally. Then I will discuss whether the debate between A- and B-
theorists is an ontological realism-debate of one of the kinds mentioned by
Wright. The question is: are B-theorists (who prima facie are irrealists
about A-determinations) error-theorists, or are they expressivists? I will
argue that they are neither. This may be seen to back up Wright's claim that
the traditional ontological lines of conducting realism-debates do not cover
everything that may be at issue between realists and antirealists.

   The first kind of irrealism which Wright makes out is an error-theory.

> Error-theory: an error-theory concerning a domain d says that all
> sentences about d are false.

They are false because reality does not contain the constituents of d, and
hence there is nothing in reality that can make the sentences about d true.[325]
Error-theorists believe in a strong dependence between language and
reality: In particular, they claim that the truth of sentences about d implies
that the constituents of d exist, or that they are made true by facts about d
(see 5.3.3 below). Examples of irrealist positions which count as error-
theories are John Mackie's view about ethics and Hartry Field's view about
pure mathematics (T&O p. 5).[326] Here the claims are that moral statements
or mathematical statemens respectively cannot be true. Note: in both cases,
the irrealist concedes that sentences about ethics or mathematics are

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[325] But does anything make them false? I suppose the idea is that if there is nothing that
makes a sentence true, then this sentence is false.

[326] Mackie (1977) and Field (1980) and (1989).

suitable for making truth-apt statements. Their truth may even be potentially verification-transcendent. In so far error-theorists would have no quarrel with Dummettian semantic realists (see 4.2 above). Their claim is that reality does not contain their relevant truth-makers. This shows that the debate between realists and error-theorists is not a semantic debate.

What is an error-theory about the past, present and future? It is the claim that all A-sentences are in effect false. They are false because there is nothing in reality which makes them true. There are no A-facts. And there are no entities -A-determinations- which serve as referents of grammatical tenses. According to the error-theorist, language committs us to a certain ontology. A-sentences call for an A-theory ontology, because they imply that reality contains A-determinations and that A-sentences can only be made true by A-facts.

Now, do any prominent B-theorists hold an error-theory concerning A-determinations? B-theorists indeed claim that reality does not contain A-determinations (see 3.2 above). But do they conclude that therefore all A-sentences are in effect false? No, they clearly do not. They repeatedly claim that many of our A-sentences are perfectly true. Mellor for example goes as far as to say:

> "There is in reality no such thing as being past, present or future. By this I do not mean that it is never true to call an event e past, present or future: that would be absurd." (RT2 p. 2)

So what makes A-sentences true? B-theorists deny that true A-sentences are made true by A-facts. Rather they claim that they are made true by B-facts (see 3.2 above). True A-sentences do not have A-truth-makers, but B-truth-makers. The crucial point is the B-theorists' denial that language here commits us to a certain ontology. They claim that the fact that there are true A-sentences, does not by itself imply that reality contains A-determinations. Mellor even thinks it is confused to think that there should be such an ontological commitment. He argues it is just as confused as the claim that the grammar of spatial indexicals ("here" and "there", etc.)

commits us to the existence of variable spatial properties like *being here* or *being there:*[327]

> "In short: despite there being spatial analogues of everything that leads many people to believe in temporal A-facts, no one believes in spatial A-facts. No one thinks that Cambridge, as well as being 52° north and 0° east, sixty miles of London, etc., also has the spatially variable property of being *here*." (RT2 p. 51)

To conclude: even though an error-theory concerning A-determinations seems like a sensible option, none of the prominent B-theorists are in fact error-theorists. Some, like Mellor, even claim that it would be an absurd position. As I said, this depends on how strict we take the relation between language and reality to be.

The second kind of irrealism is expressivism. Expressivists follow a non-cognitivist tradition (Wright 1993, p. 9).

> Expressivism: Expressivism concerning a domain d says that sentences about d are not suitable for making truth-apt statements at all, they express something else instead.

Expressivists about d claim that grammar here is misleading: Sentences about d only superficially look like declarative sentences which may be true or false. But instead of expressing genuinely representational statements about d which can be true or false, they express something different.[328] For example they express attitudes, prescriptions or the like. One of the most famous examples of an expressivist theory is Simon Blackburn's view about ethics (T&O pp. 6 f.). Blackburn, who calls his position "quasi-realism", claims that sentences about ethics do not express truth-apt statements. Rather they express moral attitudes or prescribe certain forms of behaviour.[329]

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[327] I am not so sure that this is really such confused a claim which nobody would dream of making.

[328] Wright criticises this view. For him, the truth-aptness of a sentence does indeed depend on features of (surface-)grammar or syntax (T&O p. 140). This is why he proposes to conduct such debates in terms of the Euthyphro-contrast, where the antirealists are not non-cognitivist expressivists, but projectivists (see 5.2 and 5.5.1 below).

[329] Blackburn (1973) and (1984).

What is expressivism about the past, present and future? Such expressivists think that grammar is misleading here. A-sentences cannot be used to make proper assertions at all. And since we cannot make proper A-assertions, A-language does not commit us to an A-theory ontology. Expressivism about the past, present and future is the claim that A-sentences cannot be used to make assertions, that is, they are not evaluable for truth and falsity. Rather they express something else. But what could that be? I know of no expressivist position concerning A-determinations. All B-theorists I know of claim that A-sentences are truth-apt (see above). We might say that all A-sentences express something about the speaker's immersion in time (see 4.6 above). But this seems to be compatible with their being truth-apt.

There is one form of expressivism which seems appropriate in the debate concerning Tense. But it is a local form of antirealism about Tense, since it only concerns the reality of the *future*. Many antirealists about the future claim that sentences about the future are neither true nor false (see 3.5 above)[330]. But this claim is not based on the assumption that they are not truth-apt, but that the future is not determined. Hence this claim cannot count as a form of expressivism. But there is one special kind of sentences about the future, namely sentences about one's own future activities. Here it seems to make sense to say that—instead of expressing a claim about the future—they are really expressions of one's *intentions*. For example, when I say "Tomorrow I will go to the dentist", I really express my intention to go to the dentist the following day. But again it may be wondered whether expressions of intentions are not truth-apt after all, see above.

Expressivism—like error-theory—concerning the past, present and future, endorses the claim that A-sentences cannot be true. But while error-theory has it that all A-sentences are false, expressivism says that A-sentences cannot have truth-values at all. Prominent B-theorists neither hold an error-theory nor a form of expressivism concerning A-determinations. Supposing that these are the only two forms of "irrealism" (as Wright does, see above), it follows that B-theorists are not irrealists. They do not hold a position which is an opposition to ontological realism

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[330] Being neither true nor false is compatible with being truth-apt. Sentences about the future may have a "third" truth-value like "undecided". Even when a sentence falls into a "truth-value gap", we can say that it is truth-apt. It can still be embedded in complex sentences, etc.

concerning the past, present and future. If we nevertheless trust that B-theorists oppose ontological realism concerning the past, present and future, we can either say that their prominent proponents are confused, and that they should better hold one of the two irrealist positions mentioned above. Or we can conclude that there are really more than just those two irrealist positions. One of the reasons why Wright proposes a new way of looking at realism-debates (in his T&O), is that he observes that not all ontological realism-debates seem to fit the scheme mentioned above. He also suggests a new way of spelling out expressivist ideas which goes under the heading "projectivism". Here projectivism is a semantic realist approach. Projectivists do *not* claim that sentences about d cannot express proper assertions. Rather grammar is taken at face-value. What is disputed is that this commits us to a realist conception of d (see 5.2 and 5.5.1 below).

I have shown that the prominent B-theorists do not match any of the two traditional branches of irrealism. The next question is whether the debate between A- and B-theorists can better be described as a semantic debate (see 5.2 below). If not, the final question will be whether it can best be captured according to the new general framework which Wright develops in his T&O (see 5.4 below). After all, that is specifically designed to cover *all* kinds of realism-debates. If the debate between A-theorists and B-theorists cannot be so captured, this can mean one of two things: Either Wright's project fails, or the debate concerning the past, present and furture is indeed confused.

5.2 Euthyphro-contrast

The other general kind of realism-debate which Wright makes out is a semantic approach (T&O pp. 77 ff.).

> Semantic approach: the semantic approach to realism concerns the relation between truth and assertibility.

Wright distinguishes two ways in which the relation between truth and assertibility may play a role for realism (T&O p. 81). First, there is the Dummettian approach which concerns the extensional difference between truth and assertibility (see 4.2 above). Here realists claim and anti-realists deny that truth and assertibility differ in extension. For the realist, truth "outruns" assertibility, which means that truth is not evidentially

constrained, but may be evidence-transcendent. Such a realist about the past, present and future holds that there are A-sentences which are true without being assertible. In fact, sentences about the past seem to be good candidates for being such sentences (see 4.6 above). The realist concerning the past claims that there are many true sentences about the past for which there is no longer any evidence. I argued above that this view is compatible with both the A-theorists' and the B-theorists' positions (see 4.2 above). Hence the Dummettian semantic approach cannot serve to mark the distinction between A- and B-theorists.

What about the second kind of semantic approach which Wright makes out? Wright claims that what is often the *idea* behind semantic realism is the thought that truth and assertibility differ in *source* (T&O p. 79). And difference of source does not imply difference in extension. Wright illustrates the second kind of semantic approach by means of the so-called Euthyphro-contrast[331] (T&O pp. 81 f., and pp. 108 f.). Here the realist and the antirealist may agree that truth and assertibility (or superassertibility[332]) coincide in extension (and hence agree that truth is not evidence-transcendent), but they disagree concerning the question whether they coincide in source:

> "One side—the realist—will contend 'It is because certain statements (in the discourse in question) are true that they are superassertible', while the other will contend 'It is because they are superassertible that such statements are true'." (T&O p. 80)

While the realist claims that p is assertible because p is true, the antirealist claims that p is true because p is assertible. But the "because" is to be read differently in both cases: realists explain p's being assertible by its being true, which is called the "tracking-mode" (T&O p. 79 f. and p. 112). Here

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[331] In Plato's famous dialogue, Soctrates asks Euthyphro whether certain acts are pious because they are loved by the gods, or whether they are loved by the gods because they are pious.

[332] Superassertibility is an idealised form of warranted assertibility (T&O p. 44 ff.). It is assertibility which would be durable under any possible improvement to one's state of information (T&O p. 75). I will not discuss this notion here. All we need to know is that any notion of assertibility which is to serve as a truth-predicate, is an epistemically constrained notion. See also Wright (1983) p. 411.

truth and assertibility have different sources. Antirealists on the other hand claim that truth and assertibility have the same source and are conceptually interdependent. This is called the "conceptual mode". While the realist opts for a kind of detectivism, the antirealist holds a form of projectivism (T&O p. 108).[333]

> Detectivism: the realist holds that p is assertible because p is true (tracking-mode)

> Projectivism: the antirealist holds that p is true because p is assertible (conceptual mode)

Now whether semantic realism is more appropriately described as Dummettian (concentrating on difference in extension) or in terms of the Euthyphro-constrast (concentrating on difference in source), has to do with the type of discourse under consideration (T&O p. 82).

> "The suggestion, then, is that we may see the Dummettian debate and the Euthyphro debate as essentially complementary ways of attacking the more general, crucial question about the relationship between superassertibility and truth." (T&O p. 81)

Wright claims that the Euthyphro-contrast may be especially appropriate in cases where verification-independence is not an issue and for which the Dummettian approach is unsatisfactory (T&O p. 81).[334] As I said above, this is the case in the debate about Tense. So is the Euthyphro-contrast more helpful here? If not, this shows that the debate is not a semantic one at all.

How does the Euthyphro-contrast relate to the debate between A-theorists and B-theorists? Realists and antirealists about Tense agree that

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[333] Here it needs to be noted that this form of of projectivism is distinct from a "non-cognitivist" expressivist line of projectivism, which hold that the sentences in question are not even truth-apt (see 5.1 above). In the literature, both are sometimes called "projectivism".

[334] For example he applies it to the debate over primary vs secondary qualities (T&O p. 111). Roughly, here the realist claims that for example my T-shirt looks red to me because it is red, while the antirealist claims that my T-shirt is red because it looks red to me. Wright characterises this debate in terms of "response-dependence", "best opinion" and "order of determination". I will not discuss it here, but I will come back to it later, see 5.5.1 below.

A-sentences are true if and only if they are assertible. They agree that truth is not verification-transcendent. But while the realist claims that A-sentences are assertible because they are true, the antirealist claims that they are true because they are assertible. Apart from reflecting a *general* theory of truth and assertibility, what would be a rationale for this distinction in the case of A-sentences? I know of no B-theorist who puts forward a B-theory which in any way resembles a Euthyphro-debate about Tense. B-theorists do not say what grounds the truth of A-sentences, at least not in a way which mentions their assertibility-conditions. To wit, B-theorists may claim that true A-sentences are *made true* by B-facts. But I cannot see why the B-theorists should claim that these B-facts should count as assertibility-conditions rather than truth-conditions. On my view, the ontological debate concerning Tense is not a Euthyphro-debate, because it does not employ the notion of verification (or any related concept) at all.[335]

To conclude: there are two kinds of semantic approaches to realism-debates. While the first (Dummett's) concerns the difference in extension between truth and assertibility, the second concerns their difference in source. Wright argues that not all realism-debates are semantic debates, because not all of them concern the relation between truth and assertibility. I argued that the debate concerning Tense is such a debate. Realists and antirealists concerning Tense do not disagree about the appropriate relation between truth and assertibility. It is not a semantic-debate, and it is not a debate over ontological irrealism either (see 5.1 above). Therefore Wright is right to look out for an entirely new approach to realism-debates.

5.3 Minimal Truth

Traditionally realism-debates are conducted in a way which makes the realist position look like the standard position and the *anti*realist position like the deviant position which only develops in opposition to realism. But in his "Truth and Objectivity", Wright departs from the strategy which lists conditions which make one an *anti*realist, and adopts the reverse strategy: He lists conditions which make one a realist (thus making the antirealist position the default-position). He develops a so-called "minimal notion of

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[335] But see 5.5.1 below, where I discuss Bennett's projectivism about Tense.

truth" which is supposed to be neutral on the issue between realists and antirealists (T&O p. 33). Thus realism becomes the "deviant" position which "has to be earned". First Wright lists certain characteristics which make up minimal truth. Then he lists several constraints which mark departures from minimal truth and which count as realistic.

Wright's account of minimal truth is not supposed to be a *definition* of truth, it is not an analysis of the concept "truth" (T&O p. 37). It merely states what counts as a truth-predicate and what its essential but platiduous features are. It is designed to allow for a pluralism of conceptions of truth (depending on the discourse in question), and it can be seen as neutral on different interpretations of realist and antirealist positions. This also means that the minimal account of truth is *metaphysically* neutral or "lightweight" (T&O p. 61 and p. 74). Of course, Wright's minimalism is not the only account of truth which claims to be metaphysically lightweight[336]. So what counts as a (minimal) truth-predicate? Wright says that satisfying a certain set of platitudes is necessary and sufficient for counting as a truth-predicate (T&O p. 24).[337]

> "The root idea, I suggest, is that we should not look for more of a truth-predicate than its compliance with a certain set of very general, very intuitive principles—indeed, a set of *platitudes:* the platitudes, for instance,
>
>   that to assert is to present as true;
>
>   that any truth-apt content has a significant negation which is
>
>   likewise truth-apt;
>
>   that to be true is to correspond to the facts;
>
>   that a statement may be justified without being true, and vice
>
>   versa;

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[336] See different kinds of deflationism which are also minimal theories of truth, for example Horwich (1990), and Künne (2003) chapter 6.2.

[337] I will not here discuss the problems of giving such a list. I only want to illustrate how Wright proceeds. For discussion see for example Pettit (1996); Sainsbury (1996); Van Cleve (1996); Williamson (1996); Kölbel (1997).

> as well as, perhaps, certain platitudes linking the truth values of differently tensed statements envisaged as uttered at appropriately different times, and maybe others." (T&O p. 34)

Wright concedes that it is difficult to state such a list which is comprehensive or complete (T&O p. 72). This of course is problematic when we recall that satisfying the platitudes is supposed to be a necessary condition for counting as a truth-predicate. Of course we would like to know what exactly the list consists of. Nevertheless Wright is confident that there are predicates which do qualify as truth-predicates. In particular he thinks that the semantic antirealist notion of superassertibility (see 5.2 above) satisfies the platitudes and hence counts as a truth-predicate (T&O p. 75). This shows that truth is not an exclusive property of realism.

Discussion of Wright's proposal shows that some of his platitudes are far from being uncontroversial.[338] One may wonder: how can certain principles, which some people do not accept, be platitudes? I would say that it is rather a certain *understanding* of the principles which makes them platitudes. To say that they are platitudes, does not mean that they are trivially true, but that they are true when understood as saying something trivial. That is, they only hold uncontroversially when interpreted *as platitudes*. This in any case is true of the platitude concerning correspondence (see above). Since it is the most important principle for realism-debates, I will discuss it in greater detail below (see 5.3.1 below). Especially interesting for the debate about Tense is Wright's comment at the end of the above quote: it should be clear that the platitudes mentioned there are the notorious temporal truth-value links, see 4.4 above. The rest of Wright's platitudes about truth I will not go into here. His characterisation of minimal truth will also become clearer when I discuss his account of the non-minimal features of truth below (see 5.3.3 below).

Normativity plays an important role in Wright's minimalism. This is due to his most basic contention, where truth is linked to the content of an assertion (see above quotation by Wright): Any truth-apt proposition is potentially the content of an assertion, since to assert a proposition is to claim that it is true. And it is in this way that assertions are fundamentally

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[338] See for example the discussions between Wright and his commentators in: Philosophy and Phenomenological Research (1996) Vol. LVI, no. 4.

subject to norms. Wright says "the link between truth and assertion is that it is part of the *content* of the assertion that P that one thereby claims that P is true" (T&O p. 49). But what does it take to make genuine assertions which are in turn truth-apt? Wright maintains that this is not a deep semantic question, but rather one concerning surface synatx (drawing on sentences' behaviour in embedding within connectives and operators) (T&O p. 74).[339] Again this makes the minimal conception metaphysically lightweight and—as Wright believes—also "theoretically advantous" (T&O p. 74): It is "conservative of our ordinary style of thought and talk" (T&O p. 75).

5.3.1 Minimal Correspondence

Of the platitudes which make up minimal truth, there is one which is most important in connection with (ontological) realism concerning Tense. It is the platitude concerning correspondence, because it has to do with the question: What is the connection between truth and reality? It is reasonable to suppose that there is some kind of correspondence between truth and reality, so that in some sense, a true sentence corresponds to something[340] in the world. But full-blooded correspondence-theories of truth are not undisputed. Critics for example claim that a correspondence-theory of truth is unable to define truth, because in order to know what a fact is, one already needs to know what truth is. But most theorists agree that there is something essentially right about the correspondence-claim. And of course it does seem to capture something right, if not trivially right. Wright acknowledges this intuition (that there is something right about the correspondence-claim) and claims that it is—in some sense—part of a minimal conception of truth (see 5.3 above). But it is important to stress that it is only in its *trivial* reading (and not in its substantial interpretation) that the correspondence-claim is part of a minimal conception of truth. Wright calls this the "correspondence-platitude" (T&O p. 25):

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[339] Compare: expressivists claim that certain sentences do not *really* make a truth-apt assertion, inspite of their surface-grammar. See T&O p. 36, and 5.1 above.

[340] This something can be either objectual or factual, i.e. particulars or facts. See also Künne on two different kinds of correspondence CT chapters 3.1 and 3.2. But in what follows, correspondence to the facts prevails.

(CP) "P" is true if and only if things are as "P" says they are.

In what sense is this just a platitude? First of all, there is no explicit mention of correspondence in (CP).[341] We should rather say it is some appropriate *interpretation* of (CP) which makes it a trivial statement of correspondence. On one such interpretation, there is no substantial correspondence to facts, because a substantial conception of facts is denied altogether. Rather, we can interpret (CP) as not making a claim about the independent existence of "facts" at all; facts may instead be identified with true propositions (see 2.2 above).[342] But this identity-theory is not the only option for explaining minimal or non-substantial correspondence. How can facts be construed *minimally* without identifying them with true thoughts? Wright here draws a very interesting analogy to a suggestion of Dummett's[343] (T&O pp. 181 ff.). The idea is to construe *reference* minimally. The analogy is between reference to facts (via appropriate that-clauses or nominalisations) on the one hand, and reference to abstract objects (via singular terms) on the other. Both kinds of reference are be construed minimally, which means that there are no objects corresponding to the terms in question which exist independently of their being perceived as the referents of these terms:

> "Like pure abstract objects, the states of affairs purportedly depicted by merely minimal true sentences do not seem to *do* anything except answer to the demands of our minimally true thoughts. The irresistible metaphor is that pure abstract objects, conceived as by Fregean platonism, and the states of affairs to which, in accordance with the Correspondence Platitude, merely minimally true sentences correspond, are no more than *shadows* cast by the syntax of our discourse. And the aptness of the metaphor is merely enhanced by the reflection that shadows are, after their own fashion, real." (T&O p. 181 f.)

Here the relevant connection is between reference and correspondence. There is no "*linguistically unmediated* cognitive contact with abstract

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[341] There might be a faint idea of correspondence in the "as".

[342] See Frege (1918) and for example Künne on Frege's identity-claim, CT chapter 5.2.

[343] Dummett (1981) chapter 14, where he deals with Frege's platonism.

objects: abstract objects can, in general, impinge upon us only as the referents of understood abstract singular terms" (T&O p. 180). Analogously, there is no linguistically (or conceptually) unmediated cognitive contact with facts which correspond to merely minimally true sentences. I will come back to this line of thought when I argue that this conception is particularly relevant for the debate between A- and B-theorists, see 5.4 below.

There are many critics of correspondence-theories, mainly about its factual kind. This has to do with a debatable ontology of facts (see 2.2 and 4.1 above). Also this view is related to a specific kind of correspondence, namely when this relation is read as "making-true"[344]. According to Anscombe[345], to say that facts make sentences true, does not do any work, unless one interprets it in the lights of a "Tractatus-like metaphysic"[346]. She says:

> "[...] we have to gloss the statement and say 'p is made true by the *fact that* p'. If we have a Tractatus-like metaphysic of facts this would be possible: we would have reached an elementary proposition, made true by the existence of an atomic fact. But without such a metaphysic we are only saying p is made true by its being the case that p, or by its being true! That is an empty statement, with only a false air of an explanation." (Anscombe 1982, p. 8)

Here again we see the difficulties attached to an ontology of facts as substantial truth-makers of sentences (see also Dummett 4.1 above). But what Anscombe calls an "empty" statement might as well just be the platitude which Wright captures in his (CP). And as we know, (CP) is not supposed to "explain" anything or to imply any ontology of facts. Rather its point is to characterise truth in the most trivial way.

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[344] But as we saw above, new B-theorists like Mellor have no problem with the claim that A-sentences are *made true* by B-facts (3.2 above).

[345] Anscombe (1982).

[346] Wittgenstein (1922), opening paragraphs.

What is the relation between correspondence and truth-making? I think it is obvious that not all correspondence is truth-making[347]. One can be a correspondence-theorist, yet show a dislike for truth-makers[348]. To say that a true sentence "P" corresponds to the fact that P, does not necessarily imply that "P" is *made true* by the fact that P. Truth-making seems to carry an air of explanatory (or even causal) direction, while simple correspondence does not: "P" is made true by the fact that P, seems to imply that "P" is true *because* it is made true by the fact that P. But since such explanatory direction is tied to a *substantial* notion of correspondence, it transcends the simple correspondence-platitude. Hence minimalists should refrain from interpreting correspondence as truth-making.

5.3.2 Non-minimal Truth

Departure from minimal truth can take different forms. Besides departure which is motivated by *semantic* considerations (having to do with the relation between truth and assertibility, see 5.2 above), Wright discusses departure which is motivated by *ontological* considerations and which mainly hinges on a *substantial* notion of correspondence (to the facts). It is a "beefing up" (T&O p. 147) of the correspondence-platitude

(CP) "P" is true if and only if things are as "P" says they are

in a metaphysically significant way. These departures all concern the right-hand side of the biconditional which states the correspondence-relation[349]. In what follows, I will present Wright's constraints which mark a realist departure from minimal truth quite generally. Later I will try to apply them to the debate about Tense (see 5.4 below).

Cognitive Command is a feature of a discourse iff

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[347] On the other hand, I take it, all truth-making can be understood as some kind of correspondence.

[348] See for example Künne on "truth-donors", CT chapter 3.5.

[349] I do not understand why Wright claims that "Cognitive Command" concerns the left hand side of the conditional (T&O p. 145).

"It is a priori that differences of opinion formulated within the discourse, unless excusable as a result of vagueness in a disputed statement, or in the standards of acceptability, or variation in per[so]nal evidence thresholds, so to speak, will involve something which may properly be regarded as a cognitive shortcoming." (T&O p. 144)

Think for example of two structurally identical cameras or other devices which can be used to make representations. When they are both exposed to the numerically identically input (the same flower, viewed from the same angle, for example), we expect them to produce qualitatively identical outputs (pictures). If their outputs diverge, this means that a) at least one of them does not function correctly, or b) the inputs are not identical after all, or c) conditions are less than suitable.

The idea is that we too make representations of bits of reality which we perceive. Of course we are not machines, and our cognitive apparatus does not work exactly like a camera. When we apprehend reality, we form representations in form of *beliefs*. Now the idea is that when two people apprehend the same slice of objective reality, they should form identical beliefs about it. If their beliefs diverge, this means that a) the cognitive faculties of at least one of them does not work properly, or b) the inputs are not really identical, or c) conditions are not suitable.

Now take a discourse which does not seem to satisfy Cognitive Command, for example the comic[350]. Suppose two people are presented with the same joke. Only one of them laughs and thinks that the joke is funny. The other one does not believe that the joke is funny. That is, presented with the same input (joke), they produce divergent outputs (beliefs). How can we explain this divergence in beliefs? Is it because a) one of the two has a malfunctioning cognitive apparatus, or b) they are not really presented with the same joke, or c) the circumstances are less than suitable? Now we might find that we can explain the divergence along these lines. But it is more likely the case that none of these conditions hold, but that they nevertheless form different beliefs. In that case, we would say that discourse about what is funny does not exhibit Cognitive Command and hence that realism concerning it is not an attractive position.

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[350] See T&O p. 145.

I said above that satisfying Cognitive Command serves to beef up the Correspondence Platitude (CP) in a realist sense.[351] The idea is this: when a discours satisfies Cognitive Command, then the relation between the relevant input and output is an intimate one. We may speak of a substantial correspondence between the respective states of affairs and our beliefs about them, because these beliefs are somehow commanded on us by reality:

> "That where we deal in a purely cognitive way with objective matters, the opinions we form are in no sense optional or variable as a function of permissible idiosyncrasy, but are *commanded* on us - that there will be a robust sense in which a particular point of view *ought* to be held, and a failure to hold which can be understood as a rational/ cognitive failure." (T&O p. 146)

So how can we formulate the correspondence-relation which encorporates the idea of Cognitive Command? Obviously this formulation has to convey substantial correspondence, thus (CP) will not do. It has to be modified somehow. Wright does not offer any such formulation, but maybe something like the following may be adequate:

> C1: "P" is (substantially) true if and only if things are as "P" says they are, and any differences in opinion concerning the truth-value of "P" are due to cognitive shortcoming, unsuitable circumstances, or divergent inputs

Best Explanation of Belief marks another realist divergence from minimal truth. It also is a "beefing up" of the correspondence-platitude (CP), but it concerns its second relatum, the world, or the facts (T&O pp. 176 ff.):

> For any true belief held by a person x, the best explanation for x's holding it, has to proceed via mentioning of its truth-conferring facts.

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[351] Wright stresses that a notion of representation can also feature in *semantic* antirealism, nonwithstanding its epistemic constraints on truth (T&O pp. 5 and 162). But it seems that there needs to be a specific construal of reality and what it is taken to consist in, for such a position to be consistent: "When truth is regarded as essentially epistemically constrained, Cognitive Command requires the *identifiability* of cognitive shortcoming wherever it occurs. The difficulty is going to be whether this requirement can be satisfiable if theory and observation are globally intertwined in the sense of our supposition." (T&O p. 163)

This condition is in fact too strong, as Wright notes (T&O p. 186). We sometimes have true beliefs for the wrong reasons, so to speak. I may for example truely believe that Hamburg is bigger than Munich, but not because I have seen some statistics, but because somebody told me in a dream I had. Consequently Wright claims that it suffices that within a type of discourse, Best Explanation is sometimes fulfilled (T&O p. 186).

Why does Best Explanation exhibit a realist notion of truth in the form of a substantial correspondence to the facts? Wright says that when Best Explanation holds, "we are forced to think of such states of affairs as lying at the *source* of acceptable practice within the discourse and as having the autonomy which that role demands" (T&O p. 182).[352] It is this autonomy presumably which gives Best Explanation its realist bite. So how can we formulate a correspondence-relation which incorporates Best Explanation? Obviously (CP) does not suffice, because we need a substantial notion of correspondence. Wright does not offer any such formulation, but maybe the following will do:

> C2: "P" is (substantially) true if and only if things are as "P" says they are, and most beliefs that "P" is true can best be explained by the fact that things are as "P" says they are

But Wright is not happy with Best Explanation (T&O pp. 189 ff.). He argues that it is often unclear what is to count as the *best* explanation of a belief. Should all best explanations for example ultimately go back to physicalistic states of affairs? This of course would be difficult in cases where the beliefs in question for example concern mathematics or morals. Also I think it is unclear how *explanation* is to be understood. For example, what is the relation between explanation and causation here?[353] Can facts cause beliefs?[354] And what is the relation between explanation of one's *holding* a belief and explanation of the *truth-value* of one's belief? A fact may make my belief true, but how can it explain why I hold it? I will argue below that there is a further problem with Best Explanation when applied to

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[352] See also the explanatory character of truth-makers and its realist implications, 5.3.1 above.

[353] See T&O p. 191, where both explanation and causation are mentioned.

[354] See Le Poidevin (1999).

the debate between A- and B-theorists (see 5.4 below). Concerning the best explanation of true A-beliefs, it is also unclear what *the* truth-conferring facts are supposed to be. In fact, this is exactly what A-theorists and B-theorists disagree over (see 3.1 and 3.2 above).

Wide Cosmological Role is a constraint which, for Wright, better captures what Best Explanation is after. It has the role of explanation precisely the other way round:

> "The crucial question is not whether a class of states of affairs feature in the *best* explanation of our beliefs about them, but of *what else* there is, other than our beliefs, of which the citation of such states of affairs can feature in good enough explanations." (T&O pp. 196 f.)

This "what else" can be some of the following: "cognitive effects, precognitive-sensuous effects, effects on us as physically interactive agents, and certain brute effects on inanimate organisms and matter" (T&O p. 197). The more such things can be explained by the citation of a state of affairs, the wider is its cosmological role[355]. In any case, it is important that these explananda are not just beliefs, but other, brute and non-cognitive states of affairs. If the subject matter of a discourse has wide cosmological role, the discourse is in the business for substantial, realist truth. A discourse which is only minimally truth-apt, on the other hand, concerns states of affairs which have a narrow cosmological role.

Here is an example of a class of states of affairs which have a comparatively wide cosmological role: states of affairs which concern the weight of physical objects like tables or rocks. for example, that my favourite chair weighs ten pounds, may explain several things: It may explain not only my belief that my chair weighs ten pounds, but also certain "brute" facts: that it breaks when my overweight cousin sits on it, that my little sister cannot carry it, and so on. This shows that discourse about the weight of physical objects has wide cosmological role and is substantially truth-apt. Along the same lines it can be argued that for example states of affairs which concern morality have a comparatively narrow cosmological role: For example, that murder is wrong, does not seem to explain many

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[355] Wright does not say much about how we are to measure the width of a cosmological role. We need to know for example which kinds of explananda are more important than others.

different things. It may explain my belief that murder is wrong. But it does not seem to be able to explain any "brute" non-cognitive facts. Hence as far as this constraint is concerned, moral discourse has comparatively narrow cosmological role and is merely minimally truth-apt.

The states of affairs which feature in a discourse which is only minimally truth-apt at best play the role of serving as the referents of state-of-affairs-denoting singular terms or *state denoters* (see the Dummett-analogy, 5.3.1 above) (T&O p. 193). They only play a role assigned to them by the correspondence-platitude of the minimal truth-predicate:

> "There will be no mode of cognitive or sensible interaction with such a state of affairs possible for a subject who lacks the concepts deployed in a statement of it; no wholly non-cognitive modes of interaction with such states of affairs will be possible at all; and they will not have any causal powers." (T&O p. 192)

> "There are some kinds of explanatory citation of the states of affairs with which a discourse deals which are licenced purely and simply by that discourse's minimal truth-aptitude—by its exhibition of the appropriate syntax and discipline." (T&O p. 197)

This does not mean however that these states of affairs which only have narrow cosmological role, do not really exist. We might say that they exist "in their own fashion" (see 5.3.1 above).

Again, Wide Cosmological Role marks a departure from minimal truth by beefing up the correpondece platitude (CP): states of affairs which have wide cosmological role obviously have greater ontological autonomy than those which have narrow cosmological role. Hence there can be substantial correspondence to states of affairs (or facts) which have wide cosmological role. How can we formulate such a substantial correspondence-relation? Wright does not offer one, but the following might help:

> C3: "P" is (substantially) true if and only if things are as "P" says they are, and the fact that things are as "P" says they are can explain not only our beliefs that "P" is true, but also some brute, non-cognitive facts

My observation is that Cosmological Role is something which comes in degrees. Wright does not explicitly say this, but this observation seems to have remarkable consequences: Suppose a class of states of affairs A has a

wider cosmological role than a class of states of affairs B, and B has a wider cosmological role than a class of states of affairs C. We may say that both discourse about A and discourse about B are substantially truth-apt. They both allow for realist truth. But somehow we may also want to say that discourse about A is more substantially truth-apt than discourse about B. If this is accepted, we get degrees of substantial (realist) truth, and in turn degrees of realism. I will come back to this point later, see 5.4 below.

We have seen different constraints which may turn minimal truth into something more substantial, that is something realist. But one may wonder how they are related. Is any of them separately sufficient for realism? Are they only jointly sufficient for realism? Is any of them necessary for realism? Wright does not tell us exactly, but he gives some hints. At one point he suggests that Cognitive Command marks a stepping-stone for any kind of realism: It is a necessary (but not sufficient) ingredient of realism (T&O p. 148). But what is sufficient for realism? This may depend on the kind of debate we are dealing with. I will argue below that concerning the debate about Tense, only Wide Cosmological Role seems to be sufficient for realism concerning it (see 5.4 below).

5.4 Minimalism concerning Tense

Finally, how does Wright's approach to realism apply to the debate between A- and B-theorists? Generally the minimalist conception of truth is supposed to serve as common ground between the opponents of realism-debates. It should serve as a form of starting-point. But how does the debate proceed from there? Wright argues that there are still a number of ways in which the arguments can be exchanged, and he shows how departures from the minimal conception can count as realism (see 5.3.3 above). He discusses in some detail a few areas of discourse for which his framework seems appropriate (for example humor, ethics, mathematics). But he only briefly mentions realism concerning Tense.[356] In his earlier writings[357] he discusses a *semantic* approach to a local form of Tense-realism, namely realism concerning the past (see 4.4 and 4.6.1 above), but he does not later

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[356] In particular he does not mention the ontological debate concerning Tense at all.

[357] Wright (1980) and (1984).

confront this issue with his new framework. So how does Wright's framework apply to the debate concerning Tense?

When Wright lists a set of platitudes concerning minimal truth (see 5.3.1 above), he briefly mentions that they may have to be complemented by "perhaps, certain platitudes linking the truth values of differently tensed sentences envisaged as uttered at appropriately different times" (T&O p. 34). These "platitudes" concerning A-sentences mentioned here can only be the so-called temporal truth-value links (see 4.4 above). They are biconditional principles which associate the truth-conditions of differently tensed sentences uttered at different times. For Wright, the truth-value links are fundamental for our understanding of how tensed language works, and this should not be controversial between realists and antirealists[358]. But as I argued above, the truth-value links (and specific interpretations of them) are far from being uncontroversial. They are no platitudes either. This is something that needs to be considered when one looks for a comprehensive list of platitudes for minimal truth concerning A-discourse. I will not persue this line here any further, but I only want to hint at one additional difficulty of setting one up.

To recap: Wright develops a minimal notion of truth which is supposed to serve as neutral ground between realists and antirealists. Central to minimal truth is a metaphysically neutral correspondence-claim, the "correspondence-platitude" (see 5.3.1 above):

(CP): "P" is true if and only if things are as "P" says they are.

Wright's basic idea is that anything that serves to "beef up" this platitude, counts as a form of realism. As I showed above, there are several ways to beef it up (see 5.3.3 above). In what follows, I will discuss whether A-discourse satisfies these constraints. At the end of 5.3.3, I said that Wright seems to hold that claiming that a discouse exhibits *Cognitive Command* is necessary for being a realist about this type of discourse. Thus to claim that A-discourse exhibits cognitive command, is necessary for being a realist about Tense. A discourse which exhibits Cognitive Command is such that serious differences in opinions are due to some kind of cognitive shortcoming, to unsuitable circumstances or divergent input (see 5.3.1

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[358] Wright (1980) and (1984). See also 4.4 above.

above). Now the question is: what kinds of cognitive faculties are distinctive of (or employed in) A-discourse? Often theorists discuss our ability to "keep track of time"[359]. This means that we have a sense of time passing; we notice how events take place and how they eventually become more and more past. Suppose for example that two people observe the same bird's cry at the same place, and afterwards they talk about this experience. One person says: "When the bird cried, the sun had already risen", while the other person says: "When the bird cried, the sun had not yet risen". It is clear that they cannot be both right. If they really observed the same bird's cry, their difference in opinion can only be explained by the fact that at least one of them has lost track of time. A famous literary example of someone who fatally loses track of time is Rip van Winkle[360]. Unknowingly this man sleeps for nearly twenty years, and when he wakes up, he thinks that only a few hours have passed.[361]

Not only A-theorists employ the notion of keeping track of time. B-theorists who deny that events "become past" or have any other A-determinations, also make use of this notion. Mellor for example says it characterises our mechanism of constantly changing our A-beliefs in order to keep them true (RT2 pp. 66 ff.).[362] This notion of keeping track of time is related to what, in the literature, is called "cognitive dynamics"[363]. The idea

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[359] For a comprehensive account of this notion, see Hoerl (1996).

[360] "Rip van Winkle2 is a classic tale by Washington Irving.

[361] In the story, it is left open whether this is in fact due to a cognitive shortcoming on Rip's part, or whether he was really transposed into a magical world where time flows at a different speed, so to speak.

[362] Mellor says that this constant change of our A-beliefs does not happen automatically, but is caused by our senses (RT2 p. 67). He thinks that this is the psychological truth behind the "metaphysical falsehood" that time flows (RT2 pp. 66 f.). Also Mellor believes that we need this change of A-beliefs in order for our actions to succeed (RT2 p. 66). See also Whyte (1990); and Perry on A-beliefs and actions, 2.5.2 above.

[363] This term seems to have been introduced by Kaplan (Kaplan 1978, p. 46). It is in turn discussed by Evans (Evans 1985a, pp. 85 ff.). He relates it to Frege's discussion of the semantics of A-sentences (see Frege 1918). Concerning propositional identity of A-thoughts, Evans introduces the notion of a *dynamic* Fregean thought (Evans 1985a, p. 87). He seems to suggest that believing first that Peter's race is future, then that Peter's race is present, and then that it is past, is really believing one and the same dynamic Fregean thought. Even though this conception strikes me as very interesting, I will not pursue it any

is that -in order to believe or express the same thing at different times- we often have to change the way we think about it:[364]

> "[...] being in the same epistemic state may require different things of us at different times; the changing circumstances force us to change in order to keep hold of a constant reference and a constant thought - we must run to keep still." (Evans 1985a, p. 85)

Suppose for example that at t1 I believe that Peter's race is present. In order for me to believe the same thing at a later time, I need to adjust the way I think about Peter's race: at t2 I believe that Peter's race is past. Note that this is not just a matter of linguistically *expressing* the same thing differently at different times. It is also a matter of thought and hence concerns our cognitive abilities.

Besides keeping track of time, what other cognitive faculties are involved in A-discourse? When we look at the different Tenses separately, we find that different faculties seem to concern the different Tenses. For example, some argue that there is some kind of necessary tie between our experience and the present: that all our experiences are experiences of present states of affairs. But of course it is not the case that all objects of our experiences are present while we perceive them. First, there is the time-lag argument which says that all perception takes time and hence that our experience is never strictly simultaneous with its object. Second, astronomy shows that when we observe celestial bodies which are light-years away, it is possible that these objects are already extinct at the time when we perceive them. Mellor gives a B-theoretical explanation of the alleged presence of experience (RT2 p. 44). He distinguishes our experiences from our beliefs about them. He says that we should not confuse our now-beliefs (which are indeed A-beliefs) with their objects, that is, the objects of our observations. Because on a B-theory, the latter do not have A-determinations (RT2 p. 16). Another cognitive faculty which is important

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further here. It would be interesting to know what the make-up of such a Fregean dynamic thought is, see 2.5.2 above.

[364] But what exactly does it mean to believe *the same thing*? As I argued above, the notion of propositional identity is problematic in the case of indexical sentences (see 2.5.1 above). Also there are different kinds of propositions which we could take A-sentences to express. I will not discuss them here again, but only note that this issue is relevant for a notion of cognitive dynamics.

for A-discourse is memory. Prima facie we posess a distinctive memory-faculty, which allows us to somehow detect past experiences (see 4.5 above).[365] But as I said earlier, it is not at all clear that there should be a certain "realism" engraved in our memory. In any case we do not possess any faculty for detecting future states of affairs. Precognition is not something which our cognitive apparatus is equipped for.[366] Hence discourse about the future prima facie does not exhibit Cognitive Command.[367]

Realists about the past, present and future believe that differences in opinion concerning A-sentences can only be a matter of cognitive shortcoming of some sort (or a matter of different input, or of unsuitable circumstances, see above). This in any case is the A-theorists' view.[368] But is this view also compatible with what B-theorists (*non*-realists about the past, present and future) hold? If it is, then Cognitive Command cannot be seen to mark the difference between A-theorists and B-theorists. I want to argue that B-theorists may indeed believe that A-discourse generally is subject to cognitive command[369]. They claim that A-sentences have (observer-independent) B-truth-conditions (see 3.2 and 3.4.1 above). There is a "matter of fact" for example whether when the bird cried, the sun had already risen. There is a matter of fact whether Rip was asleep for a few hours or for twenty years. But of course—according to the B-theorists—these facts are not A-facts but B-facts. A-determinations do not feature in them. In any case B-theorists agree with the A-theorists that differences in

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[365] Semantic antirealists about the past would probably deny that talk about the past exhibits cognitive command. Besides there are many sentences about the past which are not about anyone's memory-impressions.

[366] See for example Ayer (1956) pp. 185 ff.

[367] There may be some statements about the future which are exceptions in that they do satisfy Cognitive Command. Statements about future solar eclipses may be examples of such statements. But just because there are some such statements, does not mean that the whole class of statements satisfies Cognitive Command.

[368] It is her *general* view. But note that not all A-theorists believe that all Tenses are equally real (see 3.1 above). An A-theorist who does not believe in the reality of the future may for example hold that discourse about the future does not exhibit Cognitive Command, see above.

[369] As I said above, B-theorists treat all Tenses alike (see 3.2). This means that they cannot say for example that only discourse about the future does not exhibit Conitive Command.

opinion must indeed be due to some cognitive shortcoming or something else. Both sides may agree that if our cognitive faculties function correctly, we should come up with the same representations, that is with the same A-beliefs. Thus both A-theorists and B-theorists may hold that A-discourse exhibits Cognitive Command, which means that they both beef up (CP) in this realist way.

What are the *Best Explanations* of peoples' holding true A-beliefs? Do their truth-makers have to feature in them? Generally, for a discourse to satisfy Best Explanation, the best explanation of peoples' holding true beliefs must (sometimes) proceed via mentioning their truth-conferring facts (see 5.3.3 above). A-theorists are prone to say that the A-facts which make our A-beliefs true, do indeed feature in such explanations. They claim that, for example, if at t I truely believe "(Thank goodness) the exams are past", my holding this belief can best be explained by mentioning its A-truth-maker, namely the fact that the exams are past. What about the B-theorists? How do they relate truth-makers to belief-explainers?[370] B-theorists agree with the A-theorists that the *contents* of A-beliefs are A-contents, and that A-sentences express A-propositions (see 3.4.1 above). They may furthermore agree that the best explanation for holding a true A-belief proceeds via mentioning its truth-maker. But of course B-theorists do *not* say that its truth-maker is the A-fact mentioned by the A-theorists. Rather it is a B-fact (see 3.2 above). In our example, it would be the following B-fact: that the exams (tenselessly) take place earlier than t.

But how exactly do B-theorists want to show that a B-fact can *explain* someone's holding of an A-belief? This seems to be more difficult than showing how a B-fact can make an A-fact true. Le Poidevin (1999) for example argues that beliefs about the past are caused by their B-truth-makers. Mellor suggests that our A-beliefs are caused by our senses (see 3.4.2 above). Again we are confronted with the question how explanation is to be understood vis-a-vis causation (see 5.3.3 above). Another problem is that we do not know what the *best* explanation of A-beliefs is supposed to be. Do A-realists or B-theorists provide better explanations for them? This

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[370] See also Mellor (1981b and 1983) on Prior's famous example (see Prior 1959). Here Mellor asks for an explanation for my *relief* that the exams are over. He says that my believing that the exams are over, can explain my relief. See also MacBeath (1983). But in my opinion, this does nothing to explain why I *believe* that the exams are over.

is particularly difficult to say, because in the debate concerning Tense, the contestants also disagree what *the* truth-conferring facts are supposed to be. This shows that Wright is right to claim that Best Explanation is not a helpful constraint in some cases. B-theorists may claim that truth-conferring B-facts feature in the best explanation of our holding A-beliefs, even though no A-determinations feature in them. Hence B-theorists may believe that A-discourse satisfies Best Explanation, but nevertheless they are not realists concerning Tense. This means that the debate concerning Tense is another example of a debate for which Best Explanation is not sufficient to mark the distinction between realists and antirealists.

There is a final very important constraint in Wright's framework which can be used to mark the difference between realists and antirealists. According to Wright, it better captures what "Best Explanation" is after (see 5.3.3). It is called *"Wide Cosmological Role"*. How does it fare with the debate between A-theorists and B-theorists? Wright distinguishes between narrow and wide cosmological role. A class of states of affairs has wide cosmological role if its members can feature in various kinds of explanations. It is crucial that there should be other things besides our *beliefs* which can be explained by citation of the states of affairs in question. Realists about a discourse claim that its subject-matter has wide cosmological role. Hence A-theorists should claim A-facts (or A-states of affairs) have Wide Cosmological Role.

Now our question is whether B-theorists can also consistently claim that A-facts have wide cosmological role. It seems obvious that they can*not*. I will argue that the ontological realism-debate concerning the past, present and future is appropriately analysable in terms of the Cosmological Role[371]. This constraint succeeds to mark the difference between realists and antirealists concerning Tense. B-theorists can be seen to hold that A-facts have narrow cosmological role and hence that A-sentences can at best be minimally true. Recall that most B-theorists concede that A-determinations are somehow "psychologically real" (see 3.2 above). New B-theorists claim that A-determinations, or A-facts -if they exist at all- have no explanatory powers besides cognitive ones. This means they can only feature in explanations of our beliefs, and never in explanations of other, bruter

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[371] But of course it is never put like this by any prominent A- or B-theorist.

facts[372]. This B-theorist position comes to the claim that A-determinations have only narrow cosmological role. What B-theorists deny is that there are independent, objective A-facts in the external world (which have causal powers etc). They claim that there can be no interaction with these (alleged) states of affairs which is independent of one's possessing the relevant concepts (see 5.3.1 above).

A-theorists on the other hand hold that there are objective A-states of affairs in the external world, independent of us and our concepts. A-determinations, on their view, have wide cosmological role. Citation of A-facts can explain many things over and above our beliefs:[373] Some A-theorists claim that A-facts are responsible not only for our experience, but for the *existence* of an objective "flow of time"[374]. They constitute and explain change and causation, as well as the direction of time[375] (see 3.1 above). They can explain the asymmetry between the past and the future (see 3.5 above). They constitute and explain the objective presence of experience. And of course they explain many of our propositional attitudes.[376] Those A-theorists who try to reduce B-relations to A-determinations, also claim that A-facts make all B-sentences true[377]. But note that—according to some A-theorists—not all A-determinations are equally real (see 3.1 above). This also means that not all A-states of affairs need to have the same cosmological width. For example, A-theorists who believe that the future is not real, may claim that present-facts have a much wider cosmological role than future-facts.

Most of the A-theorists' contentions I have already discussed in the previous chapters. Here I just wanted to make clear that they can be

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[372] Mellor does not even seem to concede a narrow cosmological role for A-facts, because he says that A-beliefs can be explained by B-facts, see above. But see for example Le Poidevin who says that A-facts "supervene" on B-facts, 3.4 above. We can interpret this as saying that B-facts have a wider cosmological role than A-facts.

[373] See for example Prior (1996a).

[374] See for example McCall (1976); Smart (1949) and (1980).

[375] Remember that McTaggart (despite being a B-theorist) even claims that without A-determinations, there would be no time, see 3.2 above.

[376] For example they may explain why I am relived that the exams are over, or that I am looking forward to next Christmas, etc. See Prior (1959).

[377] For different kinds of A-theorists, see 3.1 above.

explained by employing Wright's notion of Wide Cosmological Role. Since A-theorists believe that A-facts can explain many things other than our A-beliefs, they claim that A-facts have wide cosmological role. And since the B-theorists believe that A-facts can at best explain our A-beliefs, they claim that A-facts only have a narrow cosmological role. So let me conclude: Wide Cosmological Role can be used to mark the difference between A- and B-theorists. It does so in a much more useful and comprehensive way than what we so far see in the ontological debate. Cosmological Role can be seen to be what is actually at issue there. Hence Wright's account is very useful for the current debate between A- and B-theorists. Of course, this debate does not actually *employ* the notion of cosmological role. Above I stressed that there are different kinds of A-theorists and different kinds of B-theorists (see 3.1 and 3.2 above). They seem to differ in terms of how wide or how narrow they construe the cosmological role of A-facts or A-states of affairs. This makes good sense when we remember that I said that Cosmological Role is a constraint which comes in degrees (see 5.3.3 above). Radical A-theorists hold that A-facts have a very wide cosmological role, while moderate A-theorists hold that they have a moderately wide cosmological role. Radical B-theorists on the other hand hold that A-facts have an extremely narrow cosmological role, while moderate B-theorists hold that they have a moderately narrow cosmological role. This seems to me a sensible way to distinguish among the different positions.

But of course Cosmological Role is not the only constraint which is relevant for A-discourse and one's theoretical position concerning it. Above I said that while both A- and B-theorist seem to agree that A-discourse satisfies Cognitive Command, only the A-realists would say it also satisfies the Wide Cosmological Role constraint. This means, B-theorists claim that A-discourse satisfies some realism-relevant constraints, but not others. I mentioned above that it is difficult to say how we should precisely relate the different constraints to each other (see 5.3.3 above). But one thing is clear: any B-theorist who concedes that A-discourse satisfies some realism-relevant constraint, can*not* claim that A-discourse is truth-apt only in the most minimal sense.[378] When he grants that A-discourse

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[378] I will come back to this point later, see 5.5 below.

satisfies Cognitive Command, he thereby accepts that the relevant truth-predicate acquires more than minmal content. B-theorists do have a conception of truth as corresponding to the facts which has more realist weight than the mere correspondence-platitude (CP). But of course B-theorists have a less substantial conception of truth for A-discourse than do the A-theorists. And conversely, since the A-theorists hold that A-discourse satisfies more than one realism-relevant constraint, they have a more substantial account of truth for A-discourse than do the B-theorists.

5.5 Bennett on Minimal (Anti-)realism about Tense

Finally I want to take a look at at another attempt to apply Wright's framework as developed in his "Truth and Objectivity" to the debate between A-and B-theorists[379]. In his thesis (submitted at the University of Leeds in 2001),[380] Andrew Bennett criticises the ontological debate between A-theorists and B-theorists on account of his observation that it does not satisfactorily capture the distinction between realists and antirealists about Tense. In order to support this claim, he attempts to apply Wright's framework to this debate.

Bennett not only criticises the ontological debate concerning Tense, he also takes a stand in it. He proposes to

> "develop and defend a genuinely anti-realistic view of tense [...] which denies that tensed features exist mind-independently but allows that tensed discourse is truth-apt and that some of its assertoric tokens are true." (Bennett 2001, vi)

With reference to Wright's minimalism concerning truth, Bennett calls his own position "*minimal* anti-realism about tense" (Bennett 2001, vi). There are two issues in Bennett's thesis which I want to comment on. They are two issues which I find unsatisfactory about Bennet's treatment of the topic: 1) It is not clear what is to count as "genuine" anti-realism concerning Tense. 2) It is also not clear what is to count as "minimal".

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[379] I want to stress that our two projects developed entirely independently of each other. Also it will become apparent that our approaches differ significantly.

[380] My references to his work concern chapters, not pages.

1) Bennett sets out to define realism and anti-realism about Tense. His own definition[381] is the following[382] (Bennett chapter 1.2):

> (RT) Realism about Tense is the thesis that tensed properties are mind-independent features of entities.

> (AT) Anti-realism about Tense is the thesis that it is not the case that tensed properties are mind-independent features of entities.

Applying this definition, Bennett comes to the conclusion that in the ontological debate concerning Tense, there is no satisfactory theory which may count as genuine antirealism about Tense.[383] This is why he proposes to develop one such theory himself.

Wright's framework is supposed to be able to mark the difference between realists and anti-realists quite generally (see 5.3 above). Even though Bennett has already given necessary and sufficient conditions for realism concerning Tense in his own definition, he now sets out to apply Wright's framework to the ontological debate about Tense[384]. He comes to the conclusion that A-discourse satisfies most of the realism-relevant constraints, but not all of them[385]. Surprisingly though, Bennett does not

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[381] He stresses that the definition is only for the purpose of his thesis (Bennett chapter 1.2). But it plays a significant role throughout his discussion of the debate concerning Tense, since he evaluates the A-theory and B-theory with respect to his own definition. This is problematic, as I argue below.

[382] In this definition, "tensed properties" are probably what I call "A-determinations" (see 1.2 above).

[383] Considering that the definition is his own, this is not surprising maybe. Now Bennett certainly still needs to show that his definition really captures "genuine" anti-realism.

[384] Bennett seems to apply these constraints in order to find out whether realism or anti-realism about Tense is true. But he does not use them to find out what realism and anti-realism are to consist in. This is already decided by his own definition. Maybe Bennett thinks that Wright's constraints in fact capture the idea behind (RT), that is, mind-independence. But I do not believe that this is true. Wright does certainly not reduce all realism-debates to the issue over mind-independence.

[385] He says that A-discourse for example satisfies Cognitive Command, but it fails to satisfy the Wide Cosmological Role constraint (Bennett chapters 3 and 4). Compare: I said in my own discussion above, that A-discourse uncontroversially satisfies Cognitive Command, but that there is room for debate concerning Cosmological Role: While A-theorists claim that A-

take this as a vindication of realism about Tense. He argues that satisfaction of these constraints is not sufficient for realism.[386] Why does he think so? Because he himself has previously defined realism along the lines of (RT). Now this is where Bennett seems to disrespect the underlying idea behind Wright's general framework. It is quite conceivable that, on account of Wright's constraints alone, Bennett's position will turn out as realistic after all.

2) Even though he has argued that A-discourse satisfies most of the realism-relevant constraints, Bennett maintains that *anti*-realism about Tense is true. Also he calls his position "minimal" anti-realism, borrowing this adjective from Wright.[387] This strikes me as a misnomer. Wright's idea behind his "minimalism" about truth is that the minimal truth-predicate *only* satisfies some very general platitudes. When a particular discourse furthermore satisfies one or more of the realism-relevant constraints, this means that the appropriate truth-predicate acquires more-than-minimal (i.e. realist) content.

Now it should be clear that Bennett's position concerning Tense cannot be "minimal", because he concedes that A-discourse satisfies most of the realism-relevant constraints (see above). He has to concede that the appropriate truth-predicate for A-sentences acquires more-than-minimal content. So even if Bennett is justified in calling his position "anti-realistic" (see (1) above), it should be clear that it will at best be a "*more-than-minimal* antirealism*" about Tense.[388] But his exact position is difficult to track along these lines: on the one hand, Bennett's position is more than minimal in a *realist* sense: because it satisfies some of the realism-relevant

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determinations have wide Cosmological Role, B-theorists claim that A-determinations have narrow Cosmological Role (see 5.4 above).

[386] Bennett claims that the relevant constraints are not sufficient for realism, because they do not imply (RT). Again, I do not believe that this move is correct. But of course I admit that Wright is not very clear on the question of how we should evaluate the different constraints (see 5.3.3 above).

[387] Wright does not use this adjective in combination with "realism" or "anti-realism" at all. Rather his idea is that minimalism is *neutral* with respect to these positions (see 5.3 above). Rather it is the truth-predicate in a discourse which has minimal or more-than-minimal content.

[388] Wright (who besides Robin LePoidevin read and marked Bennett's thesis) agrees (personal communication).

constraints. But on the other hand it is more than minimal in an *antirealist* way: because, as we will see, it also satisfies one antirealist constraint—as Bennett construes it (see 5.5.1 below).[389] I propose we should reserve the term "minimal" for a strict minimal sense, which means that the relevant truth-predicate *only* satisfies the platitudes. Everything that departs from them (no matter in which direction) is not minimal, but more than minimal. How substantial the truth-predicate is, depends on how many further constraints it satisfies. This is true of both realism and antirealism. All in all I am not sure whether Bennett's position should be classified as realist or antirealist. This is also due to the difficulties attched to evaluating the different constraints with respect to each other. But in any case, it is misleading to call Bennett's position "minimal".[390]

Bennett claims that true A-sentences have mind-dependent truth-makers (Bennett chapter 5.5), which supposedly are our A-facts. In this his approach differs from Mellor's, according to which true A-sentences have mind-*in*dependent B-truth-makers (see 3.2 above).[391] But on the other hand Bennett claims that he himself is an antirealist about Tense. This is very odd, because he does concede the existence of A-facts.[392] He only stresses that they exist mind-dependently. But this only goes through if we accept *his* definition (RT) which links realism with mind-independence (see above). But if we do that, the rest of his discussion seems to become vacuous, in particular his application of Wright's framework.

On the one hand, Bennett claims that A-facts exist mind-dependently. But on the other hand, he claims that they are not real. To me, this sounds strange: how can A-facts exist (mind-dependently), but at the same time not

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[389] According to Bennett, A-discourse satisfies the Order of Determination Constraint, but not the Epistemic Constraint. Both are antirealist constraints. For Wright, both are semantic constraints (see 5.2 above). While the Order of Determination constraint concerns the Euthyphro contrast, the Epistemic Constraint concerns Dummett's semantic account.

[390] I am not sure that pure minimalism is a life option for any kind of discourse. It may be argued that minimalism comes to quietism. If so, Wright would reject minimalism as a phisolophically satisfactory position (see T&O chapter 6).

[391] This is why Bennett says that Mellor is not really an antirealist about Tense. But note that this non-standard classification is due to Bennett's definition (RT) above.

[392] Consequently Bennett has to deal with McTaggart's claim that ascriptions of A-determinations involve a contradiction (see 3.4 above).

be real? I cannot see why we should say that everything that is mind-dependent is therefore not real. I do not see a contradiction in saying that something is both mind-dependent and real.[393] My dreams for example are mind-dependent, but they are nevertheless real. Again, we can say that dreams exist "after their own fashion" (see 5.3.1 above). In the same style we can say that A-facts exist in their own (mind-dependent) fashion. Applying Wright's framework, we can say that this particular type of existence may partly be characterised by saying that A-facts have narrow cosmological role (see 5.4 above). This shows that Wright's framework provides means of adequately describing what is at issue between realists and antirealists about Tense, precisely *without* presupposing some kind of definition like (RT).

    Finally it is very instructive here to look at what Dummett (already in his 1963) says about the whole point of the debate concerning the reality of Tense. He says that what McTaggart's puzzle really shows is that there is no complete, i.e. mind-independend description of reality:

> "I personally feel very strongly inclined to believe that there must be a complete description of reality; more properly, that of anything which is real, there must be a complete—that is, observer-independent—description." (Dummett 1963, p. 503)

> "[...] McTaggart's argument shows that we must abandon our prejudice that there must be a complete description of reality." (Dummett 1963, p. 504"

The claim that there is no complete (mind-independent) description of temporal reality, is something that should be agreed on by all contestants: Not only McTaggart's argument, but also the argument from the essential indexical (see 2.5 above) shows that temporal reality cannot be completely described in B-language. But, as I argued above, this alone cannot settle the question whether A-determinations are mind-dependent features, and whether mind-dependent features are real or not.

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[393] Maybe Bennett would say that "real" *means* "mind-independent" (see his (RT) above). But this would just make our use of "real" vacuous and hence beg the question.

5.5.1 Bennett's Projectivism

Bennett applies the Euthyphro-contrast to the debate concerning Tense, and he draws special significance from it.[394](Bennett chapter 5.1). But unlike Wright (see 5.2 above), he does not explicitly claim that this is a *semantic* issue.[395] Bennett concentrates on the notion of "best opinion" and how it fares with A-judgements. He applies the "Order of Determination constraint" (see T&O p. 111), which, unlike the other constraints above, is a mark of antirealism rather than realism (see 5.5 above):

> "Both sides of a realism dispute may be presumed to agree that there will be a coincidence between the facts of the matter and our judgements made within the disputed discourse under optimal conditions but will disagree about the direction of dependence between truth and best opinion." (Bennett chapter 5.1)

Again Bennett focuses on the distinction between states of affairs which obtain mind-dependently and those which obtain mind-independently. His contention is that realists and antirealists differ in the following respect (see his own definition above): while the realist about a domain d holds that states of affairs of type d obtain mind-independently, the antirealist about d holds that they obtain mind-dependently. Bennett interprets the Euthyphro-contrast along the same lines: while the realist holds that our best opinions concerning d at best "track" the relevant states of affairs, the antirealist claims that our opinions are constitutive of what the relevant states of affairs are. While the realist holds a form of "detectivism", the antirealist holds a form of "projectivism" concerning A-states of affairs (see Bennett chapter 5.1, and 5.2 above).

"Best opinion" employs the idea that, under ideal circumstances, our response to a state of affair is optimal, that is, our response is a true judgement.[396] Both realists and antirealists can agree on this. But they

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[394] Above I agued that the debate between A- and B-theorists is not a semantic debate because it does not concern the relation between truth and assertibility (see 5.2 above). Hence I do not believe that the Euthyphro-contrast can be made useful for this debate.

[395] But see T&O pp. 81 f.

[396] See Wright on responde-dependence, T&O pp. 108 f. He mainly applies it to the debate concerning secondary qualities like colour or shape. See also 5.2 above.

disagree on the correct "order of determination": While the antirealist claims that our judgements are true because they comply with out best opinions, the realist claims that our opinions are best because they bring forth true judgements.[397] Two things need to be clarified: first, what are ideal circumstances for forming best opinions concerning d? Second, how do we find out which order of determination is correct? Concerning the first question, it should be clear that what counts as ideal circumstances may vary according to what d is. Ideal circumstances for making a colour-judgement are certainly different from those for making an A-judgement. Concerning the second question, Wright mentions four conditions which generally determine the correct order of determination. Satisfying them supports antirealism (projectivism) about the domain in question[398] (T&O appendix to chapter 3; Bennett chapter 5.2.1.): roughly, the a priori condition says that the connection between best opinion and truth is a priori. The substantiality condition says that the conditions for ideal circumstances must be specified in a substantial, non-trivial way. The independence condition says that the conditions for ideal circumstances must be logically independent of the concepts of the disputed kind. The extremal condition says that the connection between best opinion really is not just due to an infallibility of our best opinions, but really a matter of them determining the extension of the truth-predicate. I will not discuss these conditions here, because I will argue that problems start much earlier. I only mention them in order to illustrate how an account along these lines would go.

Bennett sets out to show that A-discourse satisfies all of these four conditions, thus showing that projectivism (i.e. antirealism) about Tense is correct (Bennett chapter 5.4). It is interesting to note that Bennett considers the differently tensed judgemets seperately. He starts off by considering the

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[397] Wright says that for some cases, "the Euthyphronic thesis becomes, correspondingly, that, for the discourse in question, optimally conceived judgement—*best opinion*—is the conceptual ground of truth" (T&O p. 111).

[398] Is satisfying this constraint sufficient for antirealism? Again, this is not entirely clear in Wright's exposition (see above).

connection between judging some event to be present[399] and it being present, in terms of the following equation:[400]

"Presentness: for any S: if S operates under C-conditions at t then (S judges, at t, that event e is present if and only if e is present at t)" (Bennett chapter 5.4)

Bennett sets out to specify what the ideal circumstances (C-conditions) for making present-tensed judgements are. I will present his list of C-conditions, without discussing it in detail. Later I will pick out some of its items which I find problematic:

"So something like the following would seem to be an appropriate summary of the C-conditions for Presentness:

(1) S is equipped to detect tenseless states of affairs and to apprehend tenseless truths

(2) S suffers no cognitive impediment to, or cognitive shortcoming concerning, the apprehension of tenseless truths or to the formation of the tensed belief that e is present

(3) S has the conceptual wherewithal to form tensed beliefs

(4) S detects, perceives, experiences or is otherwise directly exposed, at t, to e (i.e. the tenseless state of affairs that e occurs)

(5) S forms a belief about e's tensed features and

(6) S has no doubt about the satisfaction of the preceding conditions." (Bennett chapter 5.4)

Later on he concedes that (4) may have to be replaced by

"(4') S detects, perceives, experiences or is otherwise directly exposed, at t, to e (i.e. the tenseless state of affairs that e occurs)

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[399] Bennett claims that we do not *experience* events as present (past or future), but we nevertheless judge them to be present (past or future) (Bennett chapter 5.4). How this is to be achieved, is mysterious to me, see below. See also 5.3.3 above.

[400] See Wright on different kinds of such equations, T&O appendix to chapter 3. I will not discuss them here, because for the present purpose, it suffices to grasp their basic idea.

and it is a tenseless fact that e occurs (tenselessly) at t" (Bennett chapter 5.4).

Before I will voice my dissatisfaction especially with this last contention, let me quickly present what Bennett says about the other Tenses. Bennett claims that concerning the past and the future, there is a similar connection between best opinion and truth:[401]

"Pastness: for any S: if S operates under C-conditions at t then (S judges, at t, that event e is past if and only if e is past at t)" (Bennett chapter 5.4)

"Futurity: for any S: if S operates under C-conditions at t then (S judges, at t, that event e is future if and only if e is future at t)" (Bennett chapter 5.4)

The C-conditions for pastness and futurity are similar to the ones concerning presentness, but they contain extra-contentions. This is so because here a further reference-event e' is needed, which is earlier or later than the event in question. Now these are the C-conditions for Pastness:

"(7) S is equipped to detect tenseless states of affairs and to apprehend tenseless truths

(8) S detects, perceives, experiences or is otherwise directly exposed, at t, to e' (i.e. the tenseless state of affairs that e' occurs) and it is a tenseless fact that e' occurs (tenselessly) at t

(9) S apprehends the tenseless truth that e is (tenselessly) earlier than e'

(10) S has the conceptual wherewithal to form tensed beliefs

(11) S suffers no cognitive impediment to the apprehension of tenseless truths or to the formation of the tensed belief that e is past

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[401] Much later Bennett gives a general formulation which is supposed to capture all A-determinations: "For any S: if CS at t then (S judges, at t, that event e has the tensed property φ if and only if e is φ at t)" (Bennett chapter 5.6).

(12) S forms a belief about e's tense and

(13) S has no doubt about satisfaction of the preceding conditions." (Bennett chapter 5.4)

The C-conditions for Futurity, instead of (9), contain

"(9') S apprehends the tenseless truth that e is (tenselessly) later than e'." (Bennett chapter 5.4)

Bennett forgets to mention that (11), in the case of the future, should also be replaced by

(11') S suffers no cognitive impediment to the apprehension of tenseless truths or to the formation of the tensed belief that e is future.

In (1) through (11'), Bennett has listed the conditions under which making A-judgements would be ideal. What he has not done however is explain why he thinks that his C-conditions *can be satisfied*. My question is: How is S to achieve what these conditions ask of her? Especially, how does the apprehension of a tenseless truth "trigger" the formation of a tensed belief?[402] Bennett simply claims that this is what happens. But he owes us an explanation. Also when we look at (4') and (8), we see that they already presuppose that reality consist of tenseless states of affairs. Now it may be wondered why we cannot take these B-facts to be the truth-makers of our true A-beliefs. I cannot see why Bennett introduces A-facts (alias truth-makers of true A-beliefs) into this picture. They seem to be quite vacuous.[403]

I conclude that—contra Bennett—it is not clear that the Order of Determination constraint is satisfied for A-discourse. Consequently it is not clear that we have an argument for antirealism concerning Tense along

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[402] Compare what I said about Mellor's "Thank goodness" argument and the explanation or causation of our true B-beliefs, see 5.4 above.

[403] New B-theorists like Mellor would of course claim that we only need B-facts (see 3.2 above). A-theorists on the other hand might claim that we only need A-facts (see 3.1 above). In any case, Bennett's position seems to multiply facts, which -to say the least- is uneconomical.

these lines.[404] All in all, I believe that Bennett's approach suffers most from his initial definition of realism concerning Tense (RT). By identifying antirealism with mind-dependence, his application of Wright's framework becomes superfluous and begs the question against the new B-theory of time. In the end, Bennett's projectivism cannot hold what he promised it to be, namely to be a "genuine" antirealist theory of Tense.

5.6 Conclusion

I have argued that Wright's general framework for dealing with realism-debates can successfully be applied to the debate concerning Tense. It allows to differentiate between the differently strong positions therein. I argued that Cosmological Role is the only sufficient constraint which marks departure from minimalism concerning Tense. It is a constraint which comes in degrees and hence allows for differently strong realist or antirealist positions. A-theorists generally believe that A-determinations have wide cosmological role and hence that they are real. B-theorists on the other hand claim that A-determinations have narrow cosmological role and hence that they are less real than for example B-relations. But different kinds of A- or B-theorists may hold differently strong kinds of realism or antirealism about Tense. This shows that we may give up a black-or-white dichonomy which only distinguishes between real and unreal, or between realists and antirealists. One of Wright's framework's merits is that it allows to differentiate further. I tried to show that this is especially useful in the debate concerning Tense, where there are differently strong positions among A- and B-theorists. I conclude that Wright's framework succeeds in capturing some of the most important ideas which underly the debate concerning Tense. Now it can also be used to pursue the debate in more fruitful ways.

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[404] To recall: even if Order of Determination were satisfied for A-discourse, this would not mean that antirealism concerning Tense was vindicated. Since Bennett concedes that A-discourse also satisfies some realism-relevant constraints, it is not clear which position results (along Wrightean lines), see above.

6. Conclusion

In this thesis, I discussed how the realism-debate concerning Tense may be conducted. I said that the past, present and future are Tenses, or A-determinations. They are properties which may be had by events, times, facts or material objects. To claim that they are real is to claim that they are indeed possessed by something. While A-theorists believe that A-determinations are satisfied, B-theorists believe that they are not. But how are we to find out who is right?

First I considered the ontological debate, which is most prominent in the literature. McTaggart famously argues that the A-series is unreal, because ascriptions of A-determinations involve a contradiction. Other B-theorists try to reduce the A-series to the B-series, in order to show that the A-series is superfluous. I argued that their arguments are not conclusive and fail to address some of the underlying issues in this debate. I concluded that the ontological debate is not satisfactory.

Next I considered Dummett's proposal for conducting realism-debates in a new way, namely in terms of semantics. When applied to the debate concerning Tense, the opponents disagree over the meanings of A-sentences. While the semantic realists hold that their meanings consist of their truth-conditions, the semantic antirealists claim that they consist in their verification-conditions. I argued that while Dummett's approach succeeds in addressing some of the underlying ideas in the debate between A- and B-theorists, it nevertheless fails to cover everything that is at issue there. I argued that semantic antirealists are A-theorists, but not vice versa, because A-theorists generally do not believe that truth is epistemically constrained.

Finally I discussed Wright's general framework for treating realism-debates. His suggestion is that they mainly revolve around the notion of truth. Wright develops a minimal notion of truth and says how realists may add more content to it. A realist notion of truth, he says, appeals to a substantial correspondence to the facts. I tried to apply Wright's framework to the debate concerning Tense. I argued that it indeed captures many of its underlying issues. Especially his Cosmological Role constraint can be

successfully used to mark the difference between realists and antirealists concerning Tense. It furthermore allows to distinguish the differently strong kinds of A- and B-theorists. I concluded that Wright's framework may be used to conduct the debate about Tense in more promising ways.

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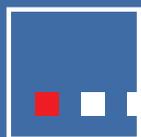
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Being past, present and future are properties which in philosophical jargon are called "Tenses". To claim that Tenses are real is to claim that they are satisfied, i.e. that something in fact possesses them. The debate between realists and antirealists concerning Tense has so far been conducted in ontological terms. Realists about Tense (so-called A-theorists) claim that things really do have Tenses, antirealists (B-theorists) deny this. Most of them claim that Tenses can be reduced to tenseless properties. This book criticises the current debate between A-theorists like Quentin Smith and B-theorists like D. H. Mellor on methodological grounds. It suggests an alternative strategy for how the debate might proceed, where insights from other kinds of realism-debates are made useful for the debate about Tense. This book makes the original attempt to apply two general frameworks for realism-debates, developed by Michael Dummett and Crispin Wright, to the debate about Tense. Here the focus lies on the correct interpretation of the truth-predicate for statements of the disputed kind. The aim of this book is to show that the debate about the reality of Tense should be reinterpreted as a debate about the truth and semantics of statements which ascribe Tenses.