ABSTRACT. One of the problems which surfaces in philosophical literature as regularly as clockwork is the status of tensed and tenseless discourse. This received its most influential formulation in McTaggart *The Nature of Existence*. Two philosophers who respond to McTaggart are Hans Reichenbach and J.J.C. Smart. In this paper, I review their analysis of token-reflexive terms. First, I examine Reichenbach's arguments for translating tensed discourse into tenseless discourse. In order to show its subtlety, I also discuss Smart's attempt to provide such translations. This analysis is adequate for a limited number of tenseless utterances. Yet even Reichenbach's analysis fails in certain important instances. That this attempt fails is a strong argument for supposing that any other such attempt will fail as well. If correct, it should put to rest the philosophically tempting quest for a tenseless discourse.

INTRODUCTION

Time is always with us, as are the problems of time. One of those problems which surfaces in philosophical literature as regularly as clockwork is the status of tensed and tenseless discourse. This received its most influential formulation in J.M.E. McTaggart's *The Nature of Existence*. At the same time, the most careful analysis of this problem of time was offered by two philosophers who now tend to be overlooked. Yet the work of each, undoubtedly, belongs among the most sophisticated analyses of temporal discourse. In this paper, I would like to review the arguments of token-reflexive terms given by Hans Reichenbach and J.J.C. Smart. In doing so, I should like to examine Reichenbach's arguments for translating tensed discourse into tenseless discourse. In order to appreciate the subtlety of Reichenbach's translations, I shall make use of Smart's attempt to provide such translations. This analysis will show that Smart misuses Reichenbach's analysis and secondly that Reichenbach's token-reflexive distinction is more complex than Smart supposes. Thus, even though
Smart's analysis is inadequate, it can be shown that Reichenbach's analysis is adequate for a limited number of tenseless utterances. Yet even Reichenbach's analysis fails in certain important instances. That such a sophisticated attempt fails is a strong argument for supposing that any other such attempt will fail as well. If I am correct, it should put to rest the philosophically tempting quest for a tenseless discourse.

Smart advocates a tenseless form of discourse to argue that tensed discourse is subjective since it involves a reference to the speaker's temporal positions with respect to the events mentioned in his utterance. That is, Smart holds that tensed discourse is anthropocentric. He points out that tensed discourse can easily lead to the "... idea that the notions of past, present, and future apply to the universe." But according to Smart, these notions are relative only to the speaker's temporal position. 'Earlier than' and 'later than' are non-anthropocentric and hence, Smart maintains, do not lead to such confusions as supposing that time flows. Smart also advocates a tenseless form of discourse because it allows him to adopt the notion of a thing as a four-dimensional (spatial-temporal) solid, instead of as a three-dimensional, changing entity which endures through time. Finally, Smart argues that his concept of tenseless language more accurately describes the world than tensed discourse does.

SMART'S NOTION OF TENSELESS LANGUAGE

There are at least two possible ways to understand Smart's notion of tenseless discourse. One way is that Smart is simply advocating an alternative (technical, scientific) language in place of ordinary language. One reason that interpretation is plausible is that the alternative language may be helpful to physicists, since they would be freed from having to utter temporally bound sentences, and it is compatible with the tenseless spacetime language used by scientists such as Minkowski. That is, it is more characteristic of relativity theory. From this point of view, any comparisons which Smart makes between scientific language and ordinary language are simply to indicate the differences between these languages and the advantages, for scientific purposes, of a tenseless language. Smart provides some support for this interpretation. For example, he says,

A man or stone or star is commonly regarded as a three-dimensional object which nevertheless endures through time. This enduring through time clearly brings a fourth dimension into the matter, but this fact is obscured by our ordinary language. In our ordinary way of talking we stress the three-dimensionality of bodies... For philosophical reasons, therefore, it is of interest to discuss a way of talking which does not make use of this notion...

However, it is much more likely that Smart is maintaining that tensed discourse is reducible to, replaceable by, or translatable by, tenseless discourse. Put differently, tensed discourse can be replaced by tenseless discourse. Some of Smart's remarks which support this interpretation are the following:
Let us replace the words 'is past' by the words is earlier than this utterance... Tenses can also be eliminated, since such a sentence as 'he will run' can be replaced by... 'he runs later than this utterance'.

... 'past' means 'earlier than' this utterance...

... sentences about past, present, and future can be deduced from appropriate sentences which contain the words 'earlier' and 'later' together with the token-reflexive device 'this utterance'.

... a tensed language is translatable into a tenseless language...

In the above quotations Smart uses such terms as 'replace', 'eliminate', 'translate', 'means' and 'deduced'. These all suggest that he is arguing not only that a language which is different from ordinary language is appropriately used to speak of time, but also that ordinary language (tensed language) is reducible to a tenseless language, and that consequently, a particular tensed sentence is reducible to, translated by, (and hence, equivalent to) a particular tenseless sentence.

**TOKEN-REFLEXIVE ANALYSIS**

Smart achieves his reduction, or replacement, of tensed sentences with tenseless sentences by eliminating the tensed verb or temporal indicator and adding a token-reflexive device. Since the notion of token-reflexivity is adopted from Hans Reichenbach, it will be helpful, at this point, to present Reichenbach's explanation of it.

Reichenbach introduces the notion of token-reflexive words in order to explain his analysis of (among other notions) tenses. A token is an individual sign. For example, in (1) and (2), the word 'snowing' is two different but similar tokens.

(1) It is now snowing

(2) The trees look nice when it's snowing

Further, the class of similar tokens is a symbol. Thus, it can be said that (1) and (2) have the same symbol in them. A token-reflexive word is a word which refers to itself; for example, 'now' means the same as "the time at which this token is uttered". The 'now' in (1) can thus be replaced by a token-reflexive word, yielding the sentence

(3) It is snowing the time at which this token is uttered

In contrast to (1) and (2), which have the similar tokens 'snowing' (that is, which have the same symbol), (3) and

(4) It is snowing the time at which this token is uttered
do not have the same symbol 'this token', because 'this token' is not a set of words such that different occasions of its use constitute the use of the same symbol. No two uses of 'this token' are equally significant. That is, according to Reichenbach, normally different tokens of the same word have the same meaning, but different tokens of 'this token' sometimes differ in meaning, and each sentence in the object-language is a token which cannot be repeated. For Reichenbach, 'this token' is a metalinguistic device which replaces all token-reflexive words such that these token-reflexive words are replaced by "proper names in combination with an operation, namely the operation 'this token'." \(^{10}\) (1), for example, contains the token-reflexive word _now_; while in (3), _now_ is replaced by 'this token', which refers to the entire utterance of (1).

Smart adopts Reichenbach's notion of token-reflexive words and uses it to make a complete analysis of tensed language into a tenseless language. For (1), Smart would offer as his translation

\[(5) \text{ It snows simultaneous with this utterance} \]

where 'this utterance' functions in the same way as Reichenbach's 'this token', and, Smart claims 'this utterance' is self-referential. A sentence such as (6), in which the verb alone conveys the tense, means; according to Smart, (7), which, in turn, means (8). \(^{11}\)

\[(6) \text{ Erik is running.} \]
\[(7) \text{ Erik runs at the present.} \]
\[(8) \text{ Erik runs simultaneous with this utterance.} \]

In (8) "runs" is italicized to indicate it is tenseless. The same analysis can be made for 'is past' by substituting 'earlier than' and for 'is future' by substituting 'later than'. Smart maintains that "all the jobs which can be done by tenses can be done by means of the tenseless way of talking and the self-referential utterance 'this utterance'. . ." \(^{12}\) In the next section, I will show that tensed discourse is far more complex than Smart supposes. In order to do this however, some more complex tensed verb forms will first be examined.

**TENSED VERBS**

After discussing token-reflexive words, Reichenbach analyzes tensed verbs in detail. As Reichenbach shows, tensed verbs indicate time in a rather complex way. In order to reveal this complexity, he breaks the tensed sentence into three parts: the time point of the token ('this utterance'), which he calls 'the point of speech'; with respect to the point of speech, there is a point of the event and the point of reference. Reichenbach's example of this is

\[(9) \text{ Peter had gone.} \]
In (9), the point of speech is the time of the utterance, the point of the event is the time Peter went, and the point of reference, which locates the event, is an unspecified time between the other two points. Reichenbach shows, in an analysis of twelve such utterances, that every tensed verb utterance has these three points. Since this analysis is extremely enlightening, it will be helpful to present his diagrams of tensed utterances.

Let 'E' stand for 'point of the event', 'R' for 'point of reference', and 'S' for 'point of speech' and let the arrow stand for the direction of time. The following tensed-verb forms can then be represented, using Reichenbach's diagrams, as:

(10) Past perfect
I had seen Betty

E
R
S

(11) Simple past
I saw Betty

R,E
S

(12) Present perfect
I have seen Betty

E
S,R

(13) Present
I see Betty

S,R,E

(14) Simple future
I shall see Betty

S,R
E
(15) Future perfect

I shall have seen Betty

\[ \text{SEE} \]

(16) Past perfect, extended

I had been seeing Betty

\[ \text{ERE} \]

(17) Simple past, extended

I was seeing Betty

\[ \text{RES} \]

(18) Present perfect, extended

I have been seeing Betty

\[ \text{EES,R} \]

(19) Present, extended

I am seeing Betty

\[ \text{EES,R} \]

(20) Simple future, extended

I shall be seeing Betty

\[ \text{SRE} \]
Future perfect, extended

I shall have been seeing Betty

In the first six cases, the event is a simple event, while in the last six cases, the event endures, or the event is repeated as, for example, in

I am meeting Christine once a week this semester.

If Smart's token-reflexive analysis, based on Reichenbach's analysis, is to be valid, it must be able to account for the above twelve cases, i.e., (10) - (21).

Smart claims that sentences (11), (13) and (14) can be replaced by

I see Betty earlier than this utterance.

I see Betty simultaneous with this utterance.

I see Betty later than this utterance.

If we grant, for the moment, that (23), (24) and (25) are satisfactory, the other nine translations, patterned after Smart's initial analysis, will be revealing.

The prima facie reduction that would be offered for (10) is

I see Betty earlier than this utterance.

But (26) is unsatisfactory because it would entail that (10) and (11) are equivalent since they both are equivalent to (26). (10) and (11) cannot both be equivalent to (26), however, since the point of reference is different in each case. If a successful reduction is to be made, it must account not only for the point of the event and the point of speech, but also for the point of reference.

(23) - (26) all describe a relation between the event and the speech-act but the point of reference is not included, although the simple past, the present, and the simple future all have at least two of the three elements at the same point. Smart has not included the point of reference in (23) - (26), since (23) describes (according to Reichenbach's diagrams) a relation between S, R, and E. The relation common to both (23) and (25) is S and E, since (23) precludes R and E as the common relation, and (25) precludes S and R. Finally, (26), which is like (23), also describes a relation between S and E. Since the analysis of (11), (13) and (14) is based on Smart's analysis of similar sentences, it follows that the reductions are unsatisfactory, since they do not
take into account the point of reference. That is to say, if a token-reflexive reduction is to be successful, it must be more complex than Smart analysis.

The sentence tokens (10) - (21) are all lacking an explicit point of reference, although, as Reichenbach points out, a point of reference is usually given by the context. An additional phrase should therefore be added to each of the sentences; for example, if (10) is modified to read as

(27) I had seen Betty before class.

then a reference (before class) is provided. As a result, (27) can be translated by

(28) My seeing Betty is earlier than the time before class and the time before class is earlier than this utterance.

One might object that since "my seeing Betty" is an event expression and "I had seen Betty" is not, (28) is an unacceptable translation, but for the present purposes and for simplicity, it will be assumed that they are equivalent phrases. The phrase "the time" is not necessary to the translation, but it is included to make it more explicit that the point of reference is some event occurring before class. (28) not only describes the relation between E (my seeing Betty), R (the time before class) and S (this utterance), but also describes the relation designated by the arrow in Reichenbach's diagrams.

Further, it might be objected that 'the time before class' includes all times earlier than the time of the class, but this expression is usually used to indicate the time immediately before the class, and (28) preserves this use. It should also be noted that (27) does not suggest that I saw Betty at the time before class but that at the time before class I had already seen Betty. This distinction can be seen more readily if we modify (11) to read as

(29) I saw Betty before class.

Instead of (23), (29) should be translated as

(30) My seeing Betty is simultaneous with the time before class and is earlier than this utterance.

By adding a point of reference to (10) and (11), it is possible to provide different translations for each, and each translation shows which tense was used in (10) and (11), respectively.

The examples of Reichenbach's analysis so far have all been such that the tense is indicated by the verb and the point of reference is indicated by some phrase other than a token-reflexive word. In a sentence, which includes both of these, such as
(31) I saw Betty yesterday
certain difficulties arise. Following (30), (31) should be analyzed as

(32) My seeing Betty is simultaneous with yesterday and is earlier than this utterance
But since 'yesterday' is itself a token-reflexive word, it must be eliminated. Reichenbach suggests that another objectionable term, namely 'now', can be eliminated by interpreting it as follows; "now means the same as 'the time at which this token is uttered'. This meaning should be altered slightly to eliminate the tensed 'is uttered', yielding 'the time simultaneous with the utterance of this token'. The analysis of 'yesterday', then, following 'now' could be 'the time earlier than the utterance of this token'. But this does not eliminate the problem, since the time earlier than the utterance could be any time, even the same day so, 'time' must be replaced by 'day', yielding 'the day earlier than the utterance of this token', and 'the day' cannot mean 'some day' but must be the name of the day before today.

If (32) were read as

(33) I saw Betty several days ago
additional difficulties arise, since (33) does not assert any particular day, but only some day. The reduction of 'several days ago' would be 'some day earlier than the utterances of this token but later than most days earlier than the utterance of this token'. This reduction is vague, but 'several days ago' also is equally vague. A full reduction of (33) would be

(34) My seeing Betty is earlier than some day earlier than the utterance of this token but later than most days earlier than the utterance of this token and (my seeing Betty) is earlier than this utterance.
Before it can be decided whether (34) is a satisfactory translation of (33), what 'this utterance' refers to must be determined.

It would seem that in (34), 'this utterance' refers to the time of the utterance of the sentence token. 'The utterance of this token' refers to some part of the utterance, namely, the time of the utterance of the sentence token 'the utterance of this token'. This interpretation creates the further problem that the utterance can only be made once. A second utterance of exactly the same words would be different, since 'this utterance' and 'the utterance of the token' would have different referents. Thus, in the following

(35) Brutus' killing of Caesar is simultaneous with the point of reference and is earlier than the utterance of (36)
and
(36) Brutus killed Caesar

have a different referent each time they are used. Consequently, 'this utterance' in (34) cannot refer to the utterance of (35).

Reichenbach's analysis of tensed verbs should be treated as a metalinguistic analysis of an object-language sentence. (35) would thus be a metalinguistic analysis of (36), with the result that the phrase 'this utterance' of (34) refers to the time of the object-language utterance 'Brutus killed Caesar'. Now, since each utterance is a different speech act and always refers to that particular speech act, the token (36), said by, say, Cassius, and again by someone else would be one speech act when said by Cassius and a different speech act when said by someone else. The metalinguistic analysis of each speech act would be different, since 'this utterance' would refer to different speech acts in each case. That is, tensed sentences are not freely repeatable but, the metalinguistic analysis of Cassius' statement [i.e., (36)], however, is freely repeatable, since fully explicated it would be

(37) Brutus' killing of Caesar is simultaneous with the point of reference and is earlier than the utterance of (36).

Since Brutus killed Caesar is implied but not used, (37) is freely repeatable, Reichenbach's token-reflexive analysis should therefore be treated as a metalinguistic device.

Acceptable translations of (10) and (11), then, can be made, and it can be assumed that translations can be provided for (12) - (15), for they are the same type as (10) and (11).18 (16 - (20) present a special difficulty, however, since they are used to indicate an enduring event and, occasionally, the repetition of an event. (17) presents another possible difficulty, for not only does the event in it endure, but so does the point of the reference, if points can be said to endure at all.

(10) and (16) both have the same relations between E, R, and S, namely E is earlier than R and R is earlier than S. But in (16), E endures while in (10), it does not; therefore, while (10) can be translated by (28), (16) cannot. One possible way to translate (16) is

(38) The period of my seeing Betty is earlier than the point of reference and is earlier than the utterance.

The difficulty with this translation is that, while 'period' may suggest that the event endures, it need not, so that 'period' could be used for (28) as well as for (38). Furthermore, if (38) does suggest duration, it suggests that my seeing Betty is one continuous event in the sense that she is never out of my sight; but this is not what (16) means. Nor does (16) mean the repetition of the event, my seeing Betty, although repetition is involved. A paradigm example of (16) is a doctor discussing his patient. The doctor might say

(39) I had been seeing Betty until she moved out of town.
but he would not say, paralleling (10)

(40) I had seen Betty until she moved out of town.19

Since neither (16) nor (10) can be completed by 'until she moved out of town' or by 'just as she was hit' (which completes (11) but not (16)), it follows that they are being used in different ways.

One way in which the distinction between (11) and (16) can be made is that 'had seen' in (11) is an achievement term (i.e., describes an achievement), while (16) does not. When I use (11), I am saying that I had seen Betty at some moment in precisely the same way that

(41) I had reached home before I realized I had forgotten the book.

describes the achievement of reaching home. If (16) does not describe an achievement, then it describes either a state, like 'Christine knows Spanish', or an activity like 'Erik was climbing', or an accomplishment like 'I am writing this sentence'.

At times, 'seeing' can be a state verb, but that is not the case in (16). An extended use of 'see' may, however, be similar to the use of 'climb'. If one climbs, he is climbing at every instant. If he stops to rest or to eat or even just to enjoy the scenery, he has stopped climbing. In that case, he may say, for example, that he had been climbing until the weather forced him to stop, but, the climber begins to climb again after he had stopped to rest. Since climbing must be continuous, however, the analogy between 'climb' and 'see' is weak.

The strongest analogy for 'see' is with 'I am writing this article'. One can say that he has been writing his article for two months without suggesting that he has been writing it every instant during those two months, and that every time he commenced writing, that he was beginning to write his article again. The writing of the article is continuous, even though there are discrete parts to the continuity. The writing of the article is an accomplishment, while my seeing Betty is an achievement. The writing of the article takes place over a period of time; my seeing Betty takes place at the moment I see her. It can thus be concluded that in (16) - (21) 'see' has a different meaning than in (10) - (15) and than an analysis of the former must therefore show that the event has duration. As a consequence

(42) My seeing Betty is simultaneous with some point of reference and is simultaneous with this utterance

cannot be an analysis of (16) for it would be the same analysis as that of (13). However,

(43) My seeing Betty is simultaneous with a point of reference, is earlier than the same point of reference, is later than the
would be a possible analysis which shows that the event endures. But this translation
fails because it implies that the whole of my seeing Betty has each of these three rela-
tions to the point of reference. That is, it implies that the whole enduring event, my
seeing Betty, is earlier than the point of reference, that the whole of my seeing Betty
is simultaneous with the point of reference, and the whole of my seeing Betty is later
than the point of reference: and this is not the case. In fact it is necessarily false.

Instead of (43),

(44) Part of my seeing Betty is earlier than a point of reference,
another part is simultaneous with the same point of reference,
a third part is later than the same point of reference and the
point of reference is simultaneous with this utterance.

might be offered as an acceptable translation. However, one difficulty with (44) is
that the enduring event is reduced to parts, while the original sentence, (19), is about
a whole extended event. (44) fails to convey the fact that the event is an enduring one.

Another serious difficulty with (44) is that it implies that part of my seeing
Betty is earlier than the utterance 'I am seeing Betty'. but if we consider a complete
sentence, such as

(45) I am seeing Betty this semester,

neither that I have been seeing Betty this semester nor that I shall be seeing Betty this
semester is implied, although either or both may be true.

(46) I am teaching Metaphysics (this semester)

when said in reply to the question "What are you teaching this semester?" is a clearer
example of this. That I am teaching Metaphysics this semester does not imply that I
have been teaching it nor that I shall be teaching it, although it usually is the case that
if I am teaching Metaphysics this semester, then I have been and will be teaching it.

One might make the objection that if it is the case that I am teaching Meta-
physics this semester but the class has not yet gotten under way, the appropriate re-
sponse is not (46) but

(47) I shall be teaching Metaphysics (this semester).

However the semester may have begun, yet my class has not yet met, or the semester
may not be over, yet my course is.
Following Reichenbach's diagram of (20), this cannot be the case, however, since it would make the teaching of the class later than this semester. Further, if we modify Reichenbach's diagram to

```
S -----> R,E
```

then it makes this semester later than the utterance, which implies that the answer to the question "What are you teaching this semester?" should be

(48) I shall be teaching Metaphysics next semester.

But (48) clearly is not an answer to the question, nor would be

(49) I am not presently teaching anything this semester but I shall be teaching Metaphysics in ten minutes

since I am teaching something this semester.

Objections can be raised against any of the the extended meanings of 'see', but these need not be discussed. It is sufficient to show that a token-reflexive analysis fails in at least one case to show that such an analysis is not sufficient for reducing tensed expressions to tenseless expressions.

CONCLUSION

This account shows that Smart's analysis is inadequate because it only takes into account simple past, present, and future. Reichenbach's analysis has the virtue of revealing that tensed expressions are more complex than Smart (and most others) indicate. However, this complexity of tensed discourse makes it impossible to reduce it to tenseless discourse, for it does not allow for distinguishing among several of the various tensed utterances.

ENDNOTES


3 Philosophy and Scientific Realism, 132-3.

4 Philosophy and Scientific Realism, 133-4.

5 Philosophy and Scientific Realism, 134.


*Elements of Symbolic Logic*, 284.

*Elements of Symbolic Logic*, 286.

*Philosophy and Scientific Realism*, 134.

*Philosophy and Scientific Realism*, 134.

*Elements of Symbolic Logic*, 288.

*Elements of Symbolic Logic*, 290. These twelve examples, for the purposes of this chapter, will be treated as sentence-tokens which have assertive force. It will also be assumed that the point of reference is explicit in the sentence.

*Elements of Symbolic Logic*, 288.

*Elements of Symbolic Logic*, 284.

'Point of reference' is used in place of a specification of the full context. It is a device which will be used henceforth.

To say that these translations can be made does not entail that they are good translations. See the next section for a detailed critical analysis.

That is, he would not say this unless one assumes that I see Betty during the whole span of time before she left town. Even this is not plausible, since, for example, the pad of paper I am writing on is before me all the time I am writing, yet I would not say I am constantly seeing it.