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1. Rules. Neo-Reichenbachian, the theory espoused in this monograph stands in an autonomous syntax framework with a concomitant claim that semantics undermines the fine syntactic structure of tenses. Hornstein's second tenet is that tense acquisition is amenable to the logic of universal grammar, and that tense grammar is innate in the language capacity of human being. The poverty of stimulus constitutes no hazard to language acquisition. The two pillars, autonomous syntax and innate capacity, may find the right place in the Government-Binding theory. Positively, Hornstein's theory is new wine in old bottles, which has given us linguists an intriguing perspective on tenses, or at least he intended to make it happen.

The subsequent discussion presupposes familiarity with a Reichenbachian theory (cf. Reichenbach 1947). The tense structure is made up of three distinctive points, S, E, and R, which stand for speech time, event time, and reference time respectively. Basic tenses in English are accorded the schematic representations below.

(1)  

| b. E, R-S | past | e. E-R-S | past perfect |

Temporal points separated by a comma converge on a single juncture. Points on the left of a line are temporally anterior to right-hand points. With no perfective marker, postulation of an R point is redundant, R and E being always contemporaneous. Nonetheless Hornstein reserves this seeming white elephant for a coherent theory of tenses. Linearity is also the apple of his eye. He claims that E, R-S and R, E-S, which are the representations of past tense, are different tenses even though they are interpreted as temporally identical. His intention will be more transparent as we proceed.

One way in which the complex tense structure arises from the basic tense structure (BTS) is through modification by temporal adverbs. This process may filter out impermissible derivations via Constraint on Derived Tense Structure (CDTS). The two guiding notions, associa-
tion and preservation, should be defined first.

(2)  
   a. \( X \) associates with \( Y = \text{def} \) \( X \) is separated from \( Y \) by a comma.
   b. BTSs preserved iff
      (i) No points are associated in DTS that are not associated in BTS.
      (ii) The linear order of points in DTS is the same as that in BTS.

(3) CDTS: DTS must preserve BTS.

Creating new associated points is prohibited, but dissociating hitherto associated points is not. Thus the derivation \( E, R - S \rightarrow E, R, S \) is offending, but \( S, R, E \rightarrow S - R, E \) is not. See the examples in 4.

(4)  
   a. *John left right now.
   b. John is leaving tomorrow.

The BTSs (the left-hand side of the arrows) and the DTSs (the right-hand side) are exemplified as 5a, b. The DTS preserves the BTS in 5b, but not in 5a. In passing, the linear orders of points are intact in both cases satisfying the second clause of 2b.

(5)  
   a. now
      \[ E, R - S \rightarrow E, R, S \]

   b. tomorrow
      \[ S, R, E \rightarrow S - R, E \]

As regards the extrinsically ordered SRE points briefly touched upon earlier, the following examples may help us to see what is at stake.

(6)  
   a. At 3 P.M., John had left the store.
   b. John had left the store at 3 P.M.

(7)  
   a. Yesterday, John left for Paris a week ago.
   b. *A week ago, John left for Paris yesterday.

The adverb in pre-sentential position tends to force a preferred reading in which John left before 3 P.M., i.e. the adverb modifies the R point, while the post-sentential adverb has a certain tendency to modify the E point, giving a reading in which John left at 3 P.M., not before. In essence left/right placement of an adverb may affect its mapping onto an R or an E point. Now let us turn to 7a, b. If the E, R points are extrinsically unordered, 7b should be tolerated, since the DTS in 8b violates no princi-
In 8a the pre-sentential adverb modifies the R point, inducing a reading in which John left for Paris eight days anterior to the speech time. In contrast 8b gives a bizarre interpretation due to incongruous adverbial modification. It can be seen that the pre-sentential adverb sets up an R point (a week ago), and that the post-sentential adverb refers to an E point (yesterday) calculated from the R point. However this is impossible. A deictic adverb *yesterday* is equipped with an R point tied up to the speech time. This state of affairs is a clear indication that we cannot get around the extrinsic ordering of the SRE points.

The next rule, Rule for Temporal Connectives (RTC), deals with temporal adverbial clauses. The canonical representation for temporal adverbial clauses is as in 9.

\[
\text{RTC: In (9), write the BTS of Tns}_2 \text{ under the BTS of Tns}_1. \text{ Associate the S points. Associate the R points by moving R}_2 \text{ to R}_1, \text{ placing E}_2 \text{ accordingly.}
\]

The movement of R2 to a position associated with R1 must obey the CDTS as before. Consider some illustrative examples.

(11) a. John will sing as Mary plays the piano.
    b. *John will sing as Mary played the piano.

One caveat before we proceed. We are now concentrating exclusively on a temporal connective, *as* indicating reason being quite out of the way for the task in hand. This done, the oddity found in 11b is explainable in terms of the RTC. See 12a, b. The upper stratum is a tense structure of the main clause and the lower is one of the temporal subordinate clause. We should read the left/right conglomerations of the arrow as BTS and DTS as before.
(12) a. \( S_1-R_1, E_1 \)  
   \( S_1-R_1, E_1 \)  
   \( S_2, R_2, E_2 \)  
   \( S_2, R_2, E_2 \)  
   RTC \( \rightarrow \)  
   \( S_1-R_1, E_1 \)  
   \( S_1-R_1, E_1 \)  
   \( E_2, R_2-S_2 \)  
   \( E_2, R_2-S_2 \)  

It can be seen that the DTS in 12b does not preserve the BTS on the left-hand side of the arrow, violating the linearity restriction imposed by the second clause of 2b. Moving the \( R_2 \) point around the \( S_2 \) point results in reordering of the \( E_2, R_2-S_2 \) sequence.

The last rule has a focal point on another mysterious phenomenon: sequence of tense (SOT). Hornstein says that the SOT may be analyzable in a manner not inconsistent with the earlier spirit. The SOT relates the temporal interpretation of a sentential argument with that of its theta-assigning verb, which capacity the adverbial clauses are devoid of. Thus integrating an account of the SOT necessarily requires some theoretical additions to the assumptions hitherto employed.

(13) a. John heard that Mary is pregnant.
   b. John heard that Mary was pregnant.

Unlike 13a, 13b tolerates two interpretations. On the first interpretation, Mary is pregnant at the time when John heard about the news. 13b has another meaning that Mary was already pregnant at the time preceding the main clause event time. This latter reading may not be deviant even in a situation in which Mary was “knee-deep in diapers” if we follow Hornstein’s phrasing. The first reading is an instance of the SOT where underlying present tense appears in the disguise of past tense.

Hornstein argues that what happens in a canonical SOT structure is association of an embedded S point with an embedding E point. Let us see how this works. The BTS for 13b can be represented as the left-hand side of the arrow, while the DTS is shown on the right-hand side. Notice that Hornstein takes the second tier to be underlingly present.

(14) \( E_1, R_1-S_1 \)  
   \( E_1, R_1-S_1 \)  
   \( S_2, R_2, E_2 \)  
   \( S_2, R_2, E_2 \)  
   SOT \( \rightarrow \)  

The SOT rule is optional, so inapplication of it gives 13a. Multiclausal cases can be explainable with the basic rule intact, but with an additional constraint, namely, the locality restriction. The SOT phenomenon is in-
duced only between neighboring tenses, which corroboration comes from the following minimal pairs.

(15) a. *John said that Harry believes that Frank would be here.
    b. John said that Harry believed that Frank would be here.

According to Hornstein, would is a clear indication that the SOT rule has actually been applied. We can give a consistent explanation of why 15a is deviant once we recognize that the SOT rule is applicable only between adjacent tenses. The only difference in 15a, b is present vs. past tenses in the intermediate clauses. As is well-known (but still calling for a clear understanding), the SOT phenomenon in English is visible only in the tense embedded under a higher past tense. This alone judges 15a ill-fated. If Hornstein's argumentation is really tenable, we can write the SOT rule in quite a simple way.

(16) SOT rule: Associate $S_n$ with $E_{n-1}$.

In this section I have devoted myself to undoing the entangled knots, showing only the minimally required rules with which to proceed along the way. In the next section I will go a step further and take up tenses construction-wise: relative clauses, appositive clauses, and again complement clauses. I do not have much to say about temporal adverbial clauses and the interaction of tense and modality.

2. More data. Relative clauses are at odds with the observations made so far in that they do not show the SOT effect (cf. Enc 1987). Let us examine the data in turn. (The data in 17, 18, and 20 are taken from Mihara 1990b except 17a and 20a, which sources are indicated in each example.)

(17) a. We spoke to the man who was crying. (Enc 1987)
    b. The new discovery will discredit his theory which is now widely accepted.
    c. The manager will have an interview with the man who was talking to the secretary.
    d. John insulted the man who is walking towards us.

In 17a indeterminacy of the relative order is manifest with respect to the main and the relative clause events, i.e. the crying can be prior to, simultaneous with, or posterior to the speaking. In 17b the main clause event occurs in future, while the relative clause event is strongly tied up to the speech time. The example 17c may say that the man was talking to the secretary in the past calculated from the speech time. A more interesting case is with the example 17d. The present tense in the relative
clause should be able to describe a situation where the man was walking towards us at the main clause event time, which is clearly not. The relative clause event is anchored to the speech time, and to the speech time only. These observations clearly show that the relative clause tense is free from any influence of the main clause tense, and that it is uniquely calculated from the speech time. Put more positively, relative clauses are immune from the SOT effect. Who is responsible for this discrepancy? Hornstein attributes this responsibility to the adjacency requirement of tenses which must be satisfied for the SOT rule to apply. Metaphorically speaking, the two tenses are not good “neighbors”. Seriously, the noun phrase containing a relative clause separates the two tenses once and for all. However an insightful reader might argue back: how would you deal with appositive clauses?

OK, we are now in a position to deal with appositive clauses. Seemingly these enemies are hard to attack, since the two tenses in point are separated by a noun phrase just like in relative clause cases. This notwithstanding, a higher tense may exert its influence on a subordinate tense. Consider 18.

(18) a. John considered the possibility that the police detected his alibi.
    b. The owner will be worried about the rumor that the house is haunted.
    c. John will deny the claim that the drug was found in his apartment.
    d. John came by the information that the Emperor is in a serious condition.

Take up 18c first. This sentence is true even when the drug is found at the time posterior to the speech time and prior to the main clause event time (that is, future) over and above the reading in which the drug was found at the time prior to the speech time. This state of affairs stands in a marked contrast to that of 17c. The latter case does not tolerate the future reading found in 18c. And 18d. It can be seen that this sentence has a truth value in a situation where the Emperor faced a serious condition when John obtained the information, though the Present Relevance (cf. Smith 1977) obscures the picture here. Put differently, the main clause tense of 18d, and that of 18c for that matter, casts a long shadow on the subordinate tense. In this sense the counterpart 17d (and 17c) has a very inert tense lacking the capacity with which to determine the form of a subordinate tense. Tense-wise, the examples 18a, b are no different
from 17a, b, to which I will return later.

Hornstein has noticed the crucial differences found in relative and appositive clauses and has tried to settle the matter, but in quite a mysterious way. He wants to solve this imposing problem assigning dichotomous structures to the cases in point. So far so good. However the structures he assigns stand in a direct conflict with the commonality shared among the Government-Binding world. 19a is an alleged structure of relative clauses and 19b one of appositive clauses. I have translated his category labels, such as $S'$ and $S$, into the current fashion, which he might feel uncomfortable. You will see the reason.

(19) a. \[
\text{[NP SpecN'} [N' N [CP COMP [IP ... Tns ...]]]}
\]
b. \[
\text{[NP NP [CP COMP [IP ... Tns ...]]]}
\]
These structures are antipodal to the standard assumption. In face of this situation queries after queries follow. Of them I will take up only a few. The first query concerns argument extractability. As is shown in Chomsky 1986 and references cited therein, appositives resist mildly, than relatives, argument extraction from within. This, coupled with the appropriate reformulation of the Relativized Minimality (Rizzi 1990), may be explainable in terms of governed vs. ungoverned CPs. The CP in 19a (appositive) is governed by the head N, while the CP in 19b (relative) is not. I am not sure how Hornstein is reconciled with this fact. The second query has to do with Predication in the sense of Williams 1980. As is widely accepted, relative clauses, or at least English relatives if we take utmost care, are there via Predication with the head NPs. If we assume with other GB syntacticians that Predication, be it syntactic or semantic, holds between two maximal projections, then we should reserve this operation exclusively for 19b. Lastly the Empty Category Principle (ECP). COMP is "freely" deletable in restrictive relatives, which constitutes another piece of evidence for thinking that 19a is really the structure of relatives, so his argument goes. It is not immediately clear whether the COMP he has in mind is a moved wh-word or a null COMP currently assumed. If the former is the case, it is not so freely deletable; only an objective wh-relative can be missing. Be that as it may, his argument is a direct descendant of Stowell's 1982: to satisfy the ECP, head government is required, which task is possible only in 19a. However I argued elsewhere that it may be quite misleading to relate an empty COMP directly to the ECP. Cherishing this neo-traditionalist view of mine, I would like to return to the basics claiming that 19a is the structure of appositive clauses, and that 19b that of relative clauses. I will flesh out
a structural issue in the next section.

Now more data on complement clauses.

(20) a. The nurse explained that the doctor was working on Tuesday,
   (i) so he couldn’t have committed the crime.
   (ii) so he couldn’t come to the charity bazaar.
   (Smith 1977)
b. The Government will officially announce next week that
   they resume a space satellite project tomorrow.
c. The reporters will insist that they talked to the suspects.
d. The astronomer discovered that the nova is visible even in
   broad daylight.

It can be seen that the possibility of relative order of the main and complement clause events is exactly the same as that of appositive clauses. In 20a the sequence of events is indeterminate; the complement event may be prior to or posterior to the main clause event. The subsequent discourses in (i) and (ii), both acceptable, fit nicely with this state of affairs. In 20b the Government’s official announcement is at least six days post-date of re-launching of a space satellite project. The past tense in 20c is alive and kicking even at the post-speech time. The example 20d may show that the nova was discernible when the astronomer made his discovery, though the notorious Present Relevance insidiously creeps in here again.

Now it’s time to raise the curtain. First, we should see how Hornstein’s theory handles the relevant cases. Let us begin with the examples in 20. The SOT rule associates $S_n$ with $E_{n-1}$, giving rise to the following DTSs for 20a and 20b.

(21) a. $E_1, R_1-S_1$ $E_1, R_1-S_1$
   SOT $\rightarrow$
   $E_2, R_2-S_2$ $E_2, R_2-S_2$
b. $S_1-R_1, E_1$ $S_1-R_1, E_1$
   SOT $\rightarrow$
   $S_2, R_2, E_2$ $S_2, R_2, E_2$

The DTS in 21a is fine with the reading in 20a(ii), but not with the reading in 20a(ii), since this DTS cannot describe a situation in which the complement event $E_2$ occurs after the main clause event $E_1$. And lo and behold, 20a(i) is not the SOT structure according to his criterion. The DTS in 21b also poses an insurmountable problem for his system. The $E_2$ point is bound to occur simultaneously with $E_1$, since the lower tier,
being a representation of present tense, forces $S_2$ and $E_2$ to be contemporaneous. Here comes an enemy: there is no way to encode information in which $E_2$ occurs before $E_1$. Hornstein is safe with 20c, d (complement cases) and 18c, d (appositive cases), which I will invite the reader to verify. The same defect also shows up in 18a, b, appositive cases. In short, Hornstein should have thought twice in hoisting a flag lined with the SOT. Well, Hornstein sits comfortably in an easy chair with relative clauses in his hands until we deal with them in the next section. Relative clauses, repeatedly, have time axis independent of main clauses.

A final remark on complement tenses is in order. As I argued in Mihara 1991, the traditional and the generative linguists alike, who have been working on the Japanese language, have missed one vital point. They have used as illustrative examples only a typical reporting verb (e.g. * iw- ‘say’) and a typical verb of thinking (e.g. * omow- ‘think’). These verbs have a certain tendency to embed a subordinate proposition as is actually said or as is actually thought. Therefore an embedded event in all likelihood occurs before, or at least simultaneously with, an embedding event if both are under past tense. However a new perspective will emerge when we think of “non-typical” predicates. These predicates, when main and subordinate predicates assume past tense for instance, may allow a situation in which an embedded event follows an embedding event, and other “unorthodox” situations too. (See Mihara 1991 for details.) The same caution should also be given to the English cases as we have seen. As ever the tense world is wider than it seems. Why not sail out?

3. GOVERNMENT. Hornstein goes on to argue against the Scope Theory of tense, which theory treats temporal dependency as akin to the dependencies manifested by operators. He says that the Scope Theory allows too wide a range of interpretive options beyond the confines of the tense grammar of natural language. Hornstein takes a step further to refute Enç’s 1987 theory of tense, though he is still sympathetic to her theory because of some similarities with his own. Enç’s theory is couched in the Binding-theoretic terms; her Anchoring Conditions for tense are analogous, in conception, to the Binding Conditions for nominals. I would stand for Enç, because much of Hornstein’s refutation is based on his own esoteric conception of structures, relatives and appositives, which I discussed in the previous section. I will invite the interested reader to refer to his original, since the recapitulation will take us
too afield.

Let us turn to the main threads of the argument. One of Hornstein's principal claims is the strict locality restriction inherent in temporal dependencies; in fact, tenses interact exclusively in a biclausal way. This rigidity may remind us of a government configuration, and Hornstein is ready to go along this way with the first itinerary through the realm of adverbs.

(22) a. John cleverly said that Bill gave a speech.
   b. John said that Bill cleverly gave a speech.

No further explanation is needed that these adverbs modify the clause-mate subjects in each sentence. An adverb's interpretational reach may indicate that adverbial modification is under government. Hornstein equates tense with an adverb. This view is not to be objected a priori, since in many languages lacking a distinctive category of tense, it is usually the case that adverbs are sine qua non to do the job on behalf of tense. Even in the Indo-European languages possessing a fullfledged tense system, evidence shows that tenses historically derive from adverbs. (The source of this information is due to Kiparsky's work cited in the original text.) Be it an adverb or not from the viewpoint of contemporary grammatical categorizing, the tense-under-government theory must expressly show how the government does its work in a biclausal way.

Government is defined as in 23.

(23) A governs B iff def all maximal projections that dominate A dominate B, and if A governs B then A governs the head of B. With this definition in mind, see the schematic representations of biclausal constructions. (I have intentionally translated S' and S which Hornstein uses into CP and IP respectively.)

(24) a. \[ CP \_ IP \_ INFL\_1 \_ [VP \_ V \_ [CP* \_ IP \_ INFL\_2 \_]]\]
   b. \[ CP \_ IP \_ INFL \_ [VP \_ V \_ TC-CP]\]

where TC stands for a temporal connective.

In 24a INFL\_1 governs VP and also the head of the VP (i.e. V). V governs CP* and the head of CP* (i.e. INFL\_2). In 24b INFL governs TC-CP, since this TC-CP hangs from the outer VP segment which does not block government from without. Hornstein dubs this concept of domination "t-domination" which says that an element is t-dominated by a category iff all the maximal projections of the category dominate the element. Here again, some unorthodox nature creeps in the picture. First take up the contention that INFL is head of CP. This goes against the grain of the GB-theoretic public property. Uneasiness still lingers on. Horn-
stein claims that the INFL head in the TC-CP is governed by the matrix INFL, which contention is quite alien to me. If elements residing in an adjunct is governable from without, what principles are stipulated to preclude an adjunct island violation? In passing, his alleged internal structure of a TC clause is also quite out of the way. If his endeavor is to attain a desired success, the CP under scrutiny must be visible to the higher INFL, which means that the clause is not prefixed with a preposition of any kind. This reasoning leads him to conclude that a TC clause is of the form \[\text{[TC-CP [TC CP]]}\], in which neither TC nor CP is a head, and TC acts as (quasi?) coordinate conjunctive.

As to the structural issue left unsettled so far, consider 19a, b again and see how Hornstein settles this issue.

(19) a. \([\text{NP Spec N} \ \text{IN} N \ \text{CP COMP [IP \ldots Tns \ldots]}]\)

b. \([\text{NP NP} \ \text{CP COMP [IP \ldots Tns \ldots]}]\)

19a is an alleged representation of relative clauses and 19b one of appositive clauses. In 19b CP is not governed by NP, given his definition of t-domination. Consequently it is visible to an element outside, the relevant element being the matrix E point outside the containing NP. Thus the embedded S point can be associated with the matrix E point surrendered to the SOT effect. The relative clause 19a is, in contrast, immune from this penetrating government, since the head N governs CP cutting off this governed domain from outside once and for all. If so, the embedded S point has no chance to be associated with the matrix E point. This is the non-SOT nature inherent in relative clauses, so he claims.

Independently, I would give an alternative view in the next section, which has also recourse to government, but in a more succinct way.

4. **Alternative.** See the data 18 and 20 again. (The analyses presented below are drawn from the papers read at two occasions as Mihara 1990a, b.) I pointed out in section 2 that Hornstein's theory cannot handle 18a, b and 20a, b. Let us concentrate on the relative order of main and subordinate events. In 25 and thereafter, MC stands for a main clause event, SC a subordinate clause event, and ST the speech time. I will sometimes use MC and SC as an abbreviated notation of the event "time" of each clause as long as the option causes no ambiguity. In addition I will use the following notations: SC<MC means that SC occurs before MC; SC=MC that SC occurs simultaneously with MC; SC*<MC<SC* that SC occurs in either relative order, SC<MC or
MC<SC. Thus the relative orders found in 18a–d and 20a–d can be schematized as follows. (The diacritic of equality in ≤ results from selection of stative predicates.)

(25) Appositive
   a. SC*<MC<SC*<ST  
   b. ST≤ SC≤ MC  
   c. SC*<ST<SC*<MC  
   d. MC≤ SC≤ ST

(26) Complement
   a. SC*<MC<SC*<ST  
   b. ST<SC<MC  
   c. SC*<ST<SC*<MC  
   d. MC≤ SC≤ ST

The combinatorics of tense forms in 18 and 20 is shown in 27, each corresponding to the alphabetical orders.

(27) a. MC=+past SC=+past  
     b. MC=−past SC=−past  
     c. MC=−past SC=+past  
     d. MC=+past SC=−past

I am assuming a binary tense system, past and non-past. Therefore I take a clause containing will, for instance, to be under non-past tense. An apparent problem stemming from this assumption shall be briefly touched upon in the final section. See also Comrie 1985 in this regard.

In the (a) cases of 25 and 26 the occurrence of SC after MC is quite revealing. If SC is uniquely anchored to MC, SC has no chance to be placed there, since both MC and SC are under past tense. If on the other hand SC is anchored to the speech time, this is not an unwelcome guest. In whichever order SC* occurs, it can assume past tense calculated from the speech time. Of course it is usually the case that relative order is fixed in one way or another due to the aid of, say, adverbials (after/before that, then, and the like). However these fixed orders are recruited from a reservoir of logical possibilities that the Tense Perspective in 28, discussed shortly, permits, which does enhance but not reduce the value of this principle. Likewise in the (b) cases, an MC-based theory cannot predict the relative order SC<MC because of MC’s time specification induced by will. In short, SC is ST-oriented when non-distinctive tenses are employed in tandem. What about the combination of distinctive tenses? Consider the (c) cases in reference to 18 and 20. Evidence shows that SC is not anchored to the speech time. Instead SC is MC-oriented as is clear from the fact that past-tensed SC is felicitous even after the speech time. The (d) cases can be argued in the same way (but with the same old Present Relevance). Now I shall present the TENSE PERSPECTIVE in 28, which may find an affinity with the traditional notion of anchoring.
Tense Perspective (TP) for Subordinate Tenses

a. A subordinate tense form is determined on the basis of the speech time under the combinatorics of non-distinctive tenses.

b. A subordinate tense form is determined on the basis of the main clause event time under the combinatorics of distinctive tenses.

The TP can be diagrammatically represented from the viewpoint of anchoring.

Direct Anchoring (=28a)

\[ \text{MC} \rightarrow \text{ST} \]

Indirect Anchoring (=28b)

\[ \text{MC} \rightarrow \text{ST} \rightarrow \text{ST} \]

The TP(a) says that MC and SC have independent tense determination mechanisms, and the TP(b) that SC is first anchored to MC and then to ST, since MC is always anchored to ST.

The TP must be general enough to explain all the relevant tense phenomena, and tight enough to find a place in the organization of grammar. Let me proceed to substantiate the claim by starting with a structural issue. Appositives, complements, and relatives are structured as in 30.

Appositive

\[ \text{NP} \rightarrow \text{N'} \rightarrow \text{N} \rightarrow \text{CP*} \rightarrow \text{C'} \rightarrow \text{C} \rightarrow \text{IP} \]

Complement

\[ \text{V'} \rightarrow \text{V} \rightarrow \text{CP*} \rightarrow \text{C'} \rightarrow \text{C} \rightarrow \text{IP} \]

Relative

\[ \text{NP} \rightarrow \text{NP} \rightarrow \text{CP*} \rightarrow \text{C'} \rightarrow \text{C} \rightarrow \text{IP} \]

The starred CPs above constitute a complement structure (i.e. sister to an \( X^0 \) category) in the first two constructions, but not in the third. This dichotomy, which seems to be accidental if we see to English cases only, may hit the bull's eye. I have shown in Mihara 1990a, arguing against the LF Pied-Piping theory for Japanese relative clauses, that the so-called relative clauses in Japanese have the same structure as appositive clauses in English, abstracting away the head parameter. And importantly, Japanese relatives, unlike English counterparts, are obedient to the TP (a)(b). Besides, it is worth mentioning that Danish relatives which are most probably structured in an English way behave exactly as English relatives with respect to the TP (Hamada 1991).

Why does the structural difference correlate with the tense phenome-
First we must make clear the basic assumptions with which to explain tense grammar. I will assume that tense resides in INFL, and that INFL consists of a feature complex, Tns and AGR, each having its own index. Thus INFL has an inner structure INFL \langle Tns_i, AGR_j \rangle. The index \( j \) is assigned to a subject NP via Spec-Head Agreement and the index \( i \) to a VP through Head Government. Moreover it may be a natural assumption that each node in the same projection shares relevant indices, a tense index being no exception. Therefore a tense index assigned to VP percolates down to V' and to V due to the Index Sharing mechanism. With this background in mind, let us see what happens in a structure consisting of a subordinate clause. I will use complement clauses as an illustrative purpose. See the tree configuration 31. The main V head governs CP* and C in turn head governs IP*. The same machinery can be exploited also for appositive clauses. In the appositive clause in 30a, when embedded under a main verb, the whole NP is head governed by the V and the head N in turn head governs the complement CP*.

(31)

The embedded INFL has another feature complex, say INFL \langle Tns_m, AGR_n \rangle over and above the index \( i \) tugged down from the main clause, forming an index complex \( i, m, n \). Here comes the TENSE INTERPRETATION which I assume is performed at the level of Logical Form (LF).

(32) Tense Interpretation (at LF)
a. A structure conforming to the Tense Perspective (a) induces rewriting of indices, giving $i, m \rightarrow i, i \rightarrow i$.

b. A structure conforming to the Tense Perspective (b) induces no rewriting of indices, giving $i, m \rightarrow i, m$.

32b is an instance of Indirect Anchoring in which a tense value of $m$ is dependent on one of $i$.

This logic would meet with more general acceptance than Hornstein's due to the merit of no additional principles to the current theoretical assumptions. In addition, the logic also would give a coherent explanation for a relative clause tense. Remember that tense in relative clauses is always anchored to the speech time overriding the TP(a)(b). See the structure 30c. Suppose that the higher NP has an index $i$ percolated down from the main clause INFL. This index might percolate down to the lower NP, but no further. The lower NP, being a maximal projection, cannot head govern the relative CP*. The index chain, thus, cannot survive down into this CP*, resulting in a configuration in which the main clause INFL and the relative clause INFL have distinctive indices. In consequence both INFLs, being disconnected, must have time specification independent of each other.

5. POSTSCRIPT. I shall take up two issues calling for early solution. The first issue has to do with a modal will.

(33) John said that Harry will leave.

The TP(b) predicts that the subordinate tense is once anchored to the main clause event time (past). Thus we expect that the complement clause has a truth value for good from that temporal point. Factual observations show, however, that this is not the case, the complement clause being true only after the speech time. Hornstein's theory seems to bypass this looming problem making application of the SOT rule optional.

\[
\begin{array}{c}
E_1, R_1-S_1 & E_1, R_1-S_1 \\
SOT \rightarrow S_2-R_2, E_2 & S_2-R_2, E_2
\end{array}
\]

The DTS is the same as the BTS, and the future tense on the second tier, consequently, retains its original value. (Remember that he is assuming future tense, while I am not.) This might seem to indicate that Hornstein's theory is per se superior to the theory defended here. However he cannot be so optimistic. As was pointed out earlier, Hornstein's theory is not complete before the examples 18b and 20b in section 2, and my
theory vice versa. Though I am not able to present a definitive solution to this contradiction at the present stage, I am not the least hesitant about saying that present tense in English should be investigated from a new perspective.

The second issue is with complement clauses in subject position. The complement clause in 35a has MC-oriented potentiality, which is visible with the aid of a time adverbial tomorrow. This is compatible with TP (b). In contrast the complement clause in 35b seems to be uniquely tied to the speech time. (See Smith 1981 for similar observations.)

(35) a. It will be officially announced the day after tomorrow that the President resigned yesterday/tomorrow.
   b. That the President resigned yesterday/*tomorrow will be officially announced the day after tomorrow.

This might be explained away along the line of factivity and/or assertion (cf. Tanaka 1991 for his interesting proposal). If it is a way to do, the syntax-cum-semantics approach is to be pursued with due consideration. All in all, however, sorting out these remaining issues is to be relegated to another table for discussion.

We have seen that not all Hornstein’s observations or conclusions should stand unchallenged. There is an odd reference, for instance, to the structures of appositive, relative, and temporal adverbial clauses, while it is true that tense grammar should be investigated within the confines of the Government theory. Much is made on syntactic workings of temporal adverbs intermingled with those of tenses. Finally, Hornstein has shown that tense is not incompatible with an autonomous syntax framework. This is a major achievement that encourages our further research. We are only beginning to see the light.

REFERENCES

—. 1990b. Tense perspective and tense interpretation. Paper read at the 8th national conference of the English Linguistic Society of Japan.


