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ON THE GROUNDING FUNCTION OF
THE PAST TENSE IN ENGLISH*

1.   INTRODUCTION

Lyons (1977:677‑690) points out that tense is a deictic category and that it "grammaticalizes the relationship which holds between the time of the situation that is being described and the temporal zero-point of the deictic context" (p.678).   The idea of tense as a deictic or referential expression has been widely accepted in the literature, though the researchers who adopt this notion may have widely differing perspectives on linguistic analysis (for instance, Comrie 1985; Quirk et. al. 1985; Declerck 1991, Enç 1987, among many others).

Cognitive Grammar (Langacker 1987, 1991), on which this article is based, also assumes this position on the functions of tense.   In this theory, a deictic expression can be characterized as one that specifies a relationship between a designated instance and the *ground*.   The notion of ground is a complex concept comprising the speech event, its participants, and its immediate circumstances.   Among deictic expressions showing an inherent semantic relationship with the ground, articles and tense/modals are especially sub-grouped as realizing a special function called *grounding*.   This classification results from their special character of deriving a nominal or finite clause, unlike other deictic expressions.   Therefore, the study of tense in Cognitive Grammar investigates how this deictic category serves to relate propositions with the ground, and more precisely how a profiled clause is grounded in various linguistic contexts.[1]

Langacker (1991:250) characterizes the function of the past tense, which will be the principal focus of this article, as follows: "PAST indicates the occurrence of a full instantiation of the profiled process prior to the time of speaking" (also in Langacker (1990:89)).   While this definition may properly capture the prototypical character of the English past tense, it is not sufficient to account for the diverse grounding functions of the past tense observed in various linguistic contexts.   For instance,

[1]Langacker (1991:240-281) claims that tense and modals serving as grounding predications for clauses are in complementary distribution with regard to the epistemic status of events between reality and irreality.   Thus, he regards tense fundamentally as a predication concerning factivity; its temporal usage is engendered from this basic character.   Note that this paper focuses only on the temporal aspects of tense.

consider the following examples:

(1) a.   The police will think that the man *was killed*.
    b.   I saw a man who *was* drinking Fanta "grape."

The past-tensed event in example (1a) may be interpreted as being situated in the future.[2]   As for (1b), not only does the past tense in the embedded clause indicate that the event is situated in a past time, it may also express some temporal relation with the time of seeing in the matrix clause.

The aim of this article is to describe in what manner past-tensed events in various linguistic contexts are related to the ground.   In particular, I shall show that by constructing a semantic description of the past tense employing the cognitive notion of *reference-point ability* (Langacker 1993, 1999), one can provide a coherent account of the superficially diverse usage of this tense in English.   As for the data considered in this article, I shall concentrate on the temporal use of tense; therefore, I shall not deal with the subjunctive use of the past.[3]

This article is structured as follows. In order to show that the aforementioned cognitive notion is indispensable for the description of the past tense, in section 2, I shall overview two representative approaches, the theories of *absolute* and *relative* tense, pointing out various problems with each.   Section 3 is devoted to explaining the theoretical construct of reference-point ability.   Based on this notion, in section 4, I shall propose a basic schema called the past-tense reference-point chain principle, and demonstrate that it clarifies various puzzles inherent in the English past tense.

2.   IS THE PAST TENSE IN ENGLISH ABSOLUTE, RELATIVE, OR BOTH?

Analyses of the past tense, particularly where embedded clauses are involved, may be roughly classified into two general types; one is based on the notion of absolute tense and the other on that of relative tense.   In the following discussion, I shall sketch the difference between the two and demonstrate that whichever approach one takes, problems arise which prevent one from properly describing the functions of the past tense in English.   Comrie (1985) will serve as a representative of the absolute-tense analysis, while Declerck (1995) will illustrate the relative-tense approach.

2.1. The Absolute-Tense Approach

Having cited Comrie as an exponent of the absolute-tense approach, I must clarify that his theory does posit both absolute and relative tenses.   Indeed, his definition of the two notions provides a useful point of departure for this discussion: "[the absolute tense] includes as part of its meaning the present moment as deictic centre; whereas relative tense...refers to a tense which does not include as part of its meaning the

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[2] Note that this paper employs the term 'event' as a cover term for situations invoked both by perfective and imperfective verbs.
[3] Taylor (1989:149-154) provides some insightful discussion on the modal use of the past tense.

present moment as deictic centre" (Comrie 1985:36).   The following examples may clarify this distinction:

(2) The passengers awaited flight 26.
(3) The passengers awaiting flight 26 proceeded to departure gate 5.

(Comrie 1985:57)

In (2), the event of the passengers' awaiting flight 26 is assigned a temporal interpretation in relation to the speech time, and in that sense, the present moment is the "deictic centre."   On the other hand, the fact that the event of awaiting in (3) is perceived as obtaining at a past time is due to the tense of the main verb *proceeded*; hence, *awaiting* exhibits a relative tense, since it depends not on the present moment but on the time of an event described in another clause.

Now I may make precise the sense in which Comrie is a representative of the absolute-tense approach; he claims (1985:56) that all *finite* verbs in English, whether they are located in matrix clauses or in embedded ones, should be regarded as having the function of absolute time reference.   As for relative tense, Comrie claims that in English it is associated only with *non-finite* forms.[4]   It is generally accepted in the literature on English tense that verbs in matrix clauses exhibit only absolute time reference.   The real problem is whether the past tense in embedded clauses also shows the same absolute character as that in matrix clauses; Comrie's position is that it does.   For instance, he stresses that the tense in the relative clause in (4) has an absolute time reference, unlike the non-finite form *awaiting* in (3): "the meanings of the two sentences are subtly but crucially different" (p.57).

(4) The passengers who were awaiting flight 26 proceeded to departure gate 5.
(Comrie 1985:57)

Comrie supposes that the use of the form *were* in the relative clause suffices to situate the described event at a time prior to that of the utterance, whereas the non-finite form in (3) could be said to absorb its temporal interpretation from association with the matrix-clause event of proceeding.

In order to examine the merits of Comrie's theory, let us consider the following sentence:

(5) John spoke to the man who was crying.

(Enç 1987:638)

It has been pointed out that sentence (5) is three-ways ambiguous.   The first possible interpretation is that the event of speaking occurs before that of crying.   If the events of the matrix and embedded clauses are rendered as E_1 and E_2, respectively, and $<$ symbolizes temporal anteriority, then this reading reflects the temporal relation $E_1 < E_2$.

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[4] It should be pointed out that it is a property of English that absolute and relative time references happen to correspond with the formal distinction between finite and non-finite forms.   Comrie observes that in other languages, such as Russian, finite forms can indicate relative time references, in addition to the absolute variety.   In addition, the perfect is classified as an absolute-relative tense.

In the second possible reading, the event of crying is temporally prior to that of speaking, i.e. $E_2 < E_1$. The following sentences may help clarify the difference between these two readings.   Sentence (6) conveys the first interpretation, and (7) the second:

(6) Yesterday John saw a man who was just crying. $(E_1 < E_2)$
(7) Yesterday John saw a man who was crying three days ago. $(E_2 < E_1)$

The final interpretation is that both the events of speaking and of crying are situated at the same temporal point in the past, (or more precisely, both the events share the same time); i.e. $E_1 = E_2$, where = represents the relation of simultaneity.

Comrie's claim that embedded clauses comply with the absolute-tense system seems to provide a succinct solution to the problem of the ambiguity observed in (5). Among the three possible combinations of the temporal references, $E_1 < E_2$, $E_2 < E_1$, and $E_1 = E_2$, the tenses of both clauses E_1 and E_2 always satisfy the minimal condition for the past tense, namely temporal anteriority with respect to the speech time, S. Beyond that, the tenses of E_1 and E_2 simply fall into any of the three temporal relations that are logically possible; thus, $E_1 < E_2 < S$, $E_2 < E_1 < S$, or $E_1 = E_2 < S$.   Therefore, we might claim that the three types of readings arise as a natural consequence of the fact that the tenses in the matrix and embedded clauses are independent and absolute, i.e. constrained only in relation to the speech time S.   If, in contrast, the embedded clause precisely followed the relative tense system and the past tense only indicated anteriority in relation to some reference time, we would wrongly predict only one possible reading, $E_2 < E_1 < S$.

Comrie's application of the absolute tense system to embedded clauses as well as matrix clauses also seems to have some advantage in accounting for 'violations' of the so-called sequence of tenses rule.   Consider first the pair of the sentences below:

(8) a.   (Zelda said) "I'm pregnant."
    b.   Zelda said that she was pregnant.   (Langacker 1991:253)

Curme (1931) describes the rule of sequence of tenses as follows: "[w]hen the governing proposition has a past tense form, a past tense form usually follows whether it is suitable to the occasion or not" (p.354).   Thus, complying with this rule, if someone heard (8a) at some time in the past and wished to report the content, he would probably express it as in (8b).   However, as pointed by many scholars such as Kiparsky and Kiparsky (1968), Langacker (1991), and Tanaka (1991), among others, the utterance in (9) may also be used, if the present tense is suitable to the occasion.

(9) Zelda said that she is pregnant.

(Langacker 1991:253)

Langacker (1991:253) supposes that if the content of *Zelda be pregnant* belongs to speaker's present reality, the speaker can use the present tense for the embedded clause.   On the other hand, if he or she does not know the present situation of Zelda or believes that her pregnancy is over, the past tense is employed in the embedded

clause.   This observation and the violation of the sequence of tenses seem to suggest that the embedded clauses follow the absolute tense system rather than the relative one.

Despite its above-described successes, the analysis based on the absolute temporal reference for embedded clauses in English is subject to certain fundamental problems. In order to appreciate this point, consider an essential difference between the past and present tenses described by Klein (1992) as follows:

> (10) But if we ignore boundaries, then there is always one 'here' in a given utterance situation, but there can be many 'theres'.   *Here* is thus P[osition]-definite, and *there* is not.   This is quite analogous to the difference between the tense form *is* and *was*: if we ignore duration, <u>there are many 'wases', but only one 'is'</u>.
>
> (Klein (1992:537); emphasis added)

Though it seems to be an unremarkable suggestion at first sight, Klein's indication that there are many 'wases' but only one 'is' is very insightful for our discussion.   Thus, the times of events instantiated by the present tense are invariably fixed at the speech time, though they may have some internal aspectual differences, i.e. boundaries, as in (11).

> (11)   a. John is playing tennis.
>   b. Smoking is very bad for your health.
>   c. Politicians love bribery.

Without any special temporal information, we can infer that the events described are temporally situated at the speech time, or else that they can be regarded as a part of the speaker and hearer's present reality (Langacker 1991:263−266).   On the other hand, the temporal positions that could be indicated by the past tense are variably determined depending on the situation, as in (12), for instance.

> (12)   John kicked Mary (a minute ago/last week/in 1991, etc.).

Thus, the time indicated by the present tense is position-definite, whereas that indicated by the past tense is position-indefinite.

This essential fact about the difference between the present and past tense reveals certain critical theoretical problems in the absolute-tense analysis.   Let us reconsider the ambiguous readings for (5), repeated as (13) below:[5]

> (13)   John spoke to the man who was crying. $\{=(5)\}$

It has already been observed that example (13) has three possible readings, where $E_1 < E_2$, $E_2 < E_1$, or $E_1 = E_2$. Consider now the likelihood of the last interpretation in relation to the first two.   For the sake of argumentation, suppose that there are n moments in time, $t_1, \ldots, t_n$, at which the events E_1 and E_2 could have taken place; since

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[5] Note that the following criticism also applies to the example (4) above.

there are n moments at which E_1 could have occurred, and n moments at which E_2 could have come about, there are a total of n^2 possible temporal interpretations for (13). Of those n^2 possibilities, only n exhibit the simultaneous reading where $E_1=E_2$; the remainder are evenly split between the sequential interpretations where $E_1<E_2$ or $E_2<E_1$. This makes the simultaneous reading statistically much less likely than the sequential interpretations, since there are far more chances for the latter to arise. As a result, the view of the problem fostered by the absolute-tense analysis naturally leads one to expect that the sequential readings should be the default. In fact, empirical investigation shows this prediction to be false.

I have conducted the following test on the temporal interpretations of example (13). I showed the sentence without any special context to several native informants with no special training in linguistics. I then questioned them about the three readings. Invariably, the informants reported that the only possible reading was $E_1=E_2$. In order to get the sequential interpretations, $E_1<E_2$ and $E_2<E_1$, I had to introduce additional contextual information, as in (6) and (7) above. Thus, in (13), the simultaneous reading should clearly be regarded as the default interpretation, contrary to the prediction discussed above.

The foregoing observations may be summarized as follows; while the absolute-tense analysis illustrated by Comrie's theory does a good job of predicting the total range of possible temporal interpretations available in complex sentences with past-tense verbs, it does quite a poor job of picking out which of those interpretations should be regarded as default readings.

2.2. Relative Tense Approach to the Past Tense in Embedded Clauses

Declerck (1995) stresses that finite verbs in English are compatible with both absolute and relative tense. To put it more precisely, he assumes that English has two past tenses, one absolute and the other relative, "which happen to correspond to the same grammatical form, i.e. the tense forms of which are homophonous" (p. 4).

Now let us outline Declerck's basic notion of the past tense in English. He adduces (14) as crucial evidence for positing absolute and relative interpretations for the past tense:

> (14) He said that he would read the article tomorrow while *he was in the waiting room of the dentist.*
>
> (Declerck 1995:4; emphasis added)

The event described by the italicized segment of (14) should be regarded as occurring after the speech time. Thus, in this case, the past tense form is employed for describing a future event. Declerck (1995:4) claims that this type of reading for the past tense is captured neither by Reichenbach's well-known scheme (E,R-S) nor by analyses based on absolute tense, such as that of Comrie (1985). The inapplicability of these theories to (14) stems from the fact that in both approaches, the definition of the past tense inherently incorporates the relation of temporal anteriority with respect to the speech time. Therefore, Declerck claims that another past tense, viz. the

relative past tense, should be postulated with a semantic structure completely different from that of absolute time reference.

In order to get an idea of the contexts in which relative tense is realized, let us first consider the sentence below.

(15) John said that he had worked hard all day, that he was tired and that he would go to bed early.

(Declerck 1995:6)

In (15), Declerck first distinguishes the finite form in the matrix clause from the other finite verbs in the embedded clauses. He considers that the former is a realization of the absolute past tense and that the latter instantiates the relative past tense. The function of absolute tense is to create a temporal domain at a certain time by establishing a direct temporal relationship with the speech time. In this case, the time of the event of saying is assigned to some moment prior to the speech time. Once a domain is created by absolute tense, the remaining past tenses, which are relative, are supposed to work within that domain. Thus, the relative past tense shows no relationship to the speech time, which is outside of the domain. Within the past domain, the unmarked past tense indicates simultaneity with the event encoded in the absolute past tense; the past perfect indicates anteriority, and the conditional indicates posteriority.

The notion of a temporal domain may be represented as a schema of the following sort. A domain consists of an absolute-tense event, let us call this the domain determinant, together with a set containing relative-tense events. The latter are pairs consisting of one of the temporal relations $<$, $=$, or $>$ along with an event; the intended interpretation is that each of these events stands (as second argument) in the associated relation with the domain determinant (as first argument). Now, there are four events described in (15), E_1 (*said*), E_2 (*had worked*), E_3 (*was tired*), and E_4 (*would go*). The schema for (15) would be $E_1\{>E_2,= E_3,<E_4\}$, implying $E_1>E_2$, $E_1=E_3$, and $E_1<E_4$. As for (14) above, given E_5 (*said*), E_6 (*would read*), E_7 (*was*), one would obtain the schema $E_5\{<E_6,= E_7\}$.

This analysis provides a solution to the problem observed in the last section. It has already been observed that in (13) (repeated as (16) below), the default interpretation is the simultaneous reading:

(16) John spoke to the man who was crying. $\{=(5)=(13)\}$

However, the theory of the absolute tense was seen to have difficulty explaining this intuition. In conformity with Declerck's (1995) analysis, the matrix past-tense form (*spoke*) introduces a past domain, and the event in the embedded clause is situated with regard to the domain determinant, rather than the speech time. Since the tense form of *was* is neither the past perfect nor the conditional, the simultaneous reading is understood. Hence, given E_1 (*spoke*) and E_2 (*was crying*), the schema for (16) would be $E_1\{=E_2\}$. Thus, Declerck's theory seems to succeed in properly accounting for the unmarked interpretation of simultaneity.

Despite the success of Declerck's analysis in picking out the appropriate default

interpretation for (16), the approach could be said to fail in the basic task of uncovering a unified principle underlying the function of the past tense. Indeed, Declerck resorts to positing various ad hoc principles in order to cover the observable data. Consider sentence (17), for instance:

(17) If we dump his body in Soho after we have killed him, the police will think that he was killed there.

(Declerck 1995:10)

Given E_1 (*will think*) and E_2 (*was killed*), the principle discussed in connection with (14) and (15) would incorrectly lead one to expect the schema for (17) to be $E_1\{=E_2\}$, where the events of thinking and being killed are simultaneous. However, the proper interpretation of (17) is $E_1\{>E_2\}$, where the event of being killed precedes that of thinking. To achieve the correct result, Declerck has to postulate a separate relative-tense interpretation rule: when the matrix clause introduces a non-past domain ('post-present' in his terminology), the relative past tense indicates anteriority to the time of the matrix-clause event, rather than simultaneity. The principle responsible for (14) and (15) makes another false prediction for (18):

(18) John said that he wrote a book.

(Declerck (1995:26))

Given E_3 (*said*) and E_4 (*wrote*), one would expect the schema $E_3\{=E_4\}$, where the past tense of *wrote* is relative, indicating simultaneity with the event of saying. To get the proper interpretation, one in which the event of writing precedes that of saying, Declerck proposes yet another principle: when the embedded clause describes a 'bounded' event, its tense is absolute rather relative. As a primary and fundamental question, we might wonder how many principles for interpreting the past tense are acceptable in a properly motivated theory.

2.3. Absolute and Relative Tense in Summary

In this section I have reviewed two representative analyses of the past tense and found both to be problematic. While it does a good job of predicting the full range of possible meanings for the past tense in embedded clauses, the absolute-tense approach has difficulty in predicting which temporal interpretation should be regarded as the default. In contrast, the relative-tense analysis solves the foregoing problem inherent in the absolute-tense approach, but the resulting description becomes very complicated, and, as a result, it is very hard to capture the nature of the past tense in English.

3.   REFERENCE-POINT ABILITY

This section sketches the cognitive notion of reference point ability, the idea of which has been proposed in the early stages of Cognitive Grammar (Langacker 1987, 1991), and is explicitly characterized as one of the theoretical constructs in Langacker (1993, 1999).

Langacker (1993, 1999) considers reference point ability to be the fundamental cognitive capacity "to invoke the conception of one entity as a cognitive reference point for purpose of establishing mental contact with another" (1993, p.1).[6] The essentials of this notion are shown in Figure 1.

C = conceptualizer
R = reference point
T = target
D = dominion
= mental path

Figure 1 (Langacker 1993:6)
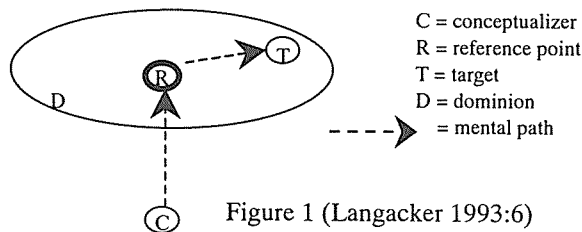
The circled labels *C*, *R*, and *T* indicate the conceptualizer, reference point, and target, respectively.   In speech, the relevant conceptualizers are the speaker and addressee. For the reference point, an entity is chosen which has a certain cognitive salience, either intrinsic or contextually determined.   The target is the entity with which the conceptualizer establishes mental contact by means of the reference point.   The dashed arrows designate the mental path that the conceptualizer follows to reach the target.   The ellipse labeled *D* represents an abstract entity called the dominion.   It is invoked when a particular reference point gets accessed, and it comprises the set of entities "to which a particular reference point affords direct access i.e. the class of potential targets" (Langacker 1999:174).

Langacker (1993, 1999) claims that reference point ability is prototypically realized in such conceptual archetypes as ownership and kinship.   For example, consider *John's cousin*, which expresses a kinship relationship.   To pick out a particular target from among multiple people that can be described as cousins, the conceptualizer first makes mental contact with a reference point known to both speech participants—in this case *John*.   In so doing, a dominion is created comprising knowledge of *John*, including his genealogy.   Locating a certain cousin within the dominion makes it possible to identify the target uniquely and specifically.

Note that the reference point relationship is dynamic, as (19) suggests:

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[6] Among the other crucial cognitive abilities are the directing and focusing of attention, the imposition of figure/ground organization, the capacity for mental scanning, and the creation of abstract "things" by conceptual reification   (Langacker 1999:171).

(19) a. my friend's cousin's wife's sister's lawyer
      b. $R_1 > T_1/R_2 > T_2/R_3 > T_3/R_4 > T_4/R_5 > T_5$

                                                    (Langacker 1999:364)

Example (19a) shows that once a target is accessed, it may become a reference point
to access another target.   Successive application of this process results in the
formation of a chain of reference points, as illustrated in (19b).

    Langacker asserts that reference-point ability is inherent not only in determiner
constructions, but also in such other phenomena as topic and topic-like constructions,
pronoun-antecedent relationships and metonymy.   For these extended cases, see
Langacker (1993, 1999).

    Given this outline of reference point ability, let us return to the past tense.   As
pointed out in section 1, Cognitive Grammar includes tense in the class of grounding
predications, which serve to "locate the nominal or clausal profile in relation to the
ground with respect to certain fundamental parameters (e.g. time, reality,
identification)" (Langacker 1999:220).   Consider the Cognitive-Grammatical
definition of the past tense in this light:

    (21) PAST indicates the occurrence of a full instantiation of the profiled process
          prior to the time of speaking.

                                                    (Langacker 1990:89)

While this characterization may encompass the essential character of the past tense, it
is much too schematic to clarify the manner in which such past-tensed events as were
presented in the last section are related to the ground.   In what follows, it is
demonstrated that we introduce the aforementioned idea of a chain of reference points
to the description of the past-tense functions besides Langacker's past-tense schema
above so that the temporal relations among the ground and clauses are properly
captured in a theoretically motivated way.

4. ON THE GROUNDING FUNCTION OF THE PAST TENSE IN ENGLISH

4.1. The Basic Characteristics of the Past Tense in Terms of the Reference-point Chain

It is observed in section 3 that the past tense is regarded as a grounding predication,
the function of which is to locate a profiled process prior to the ground.   However,
reflection upon this characterization raises a basic question: where does the past tense
locate the profiled event in past time?   This question provides a nice departure for
the characterization of the past-tense function in terms of reference point ability.

    With regard to this problem, McCawley (1971:269−270) provides a very
insightful observation.   Consider the sentences below:

    (22) a. *The farmer killed the duckling.   (McCawley 1971:269)
          b.   The farmer killed the ducking yesterday/before noon, etc.

McCawley's judgement of ungrammaticality for example (22a) is intended to convey the fact that the past tense should not be employed without a contextually-determined temporal reference.   This property of the past tense becomes clearer when a comparison is drawn with the present perfect; consider the contrast between (22) and (23) below:

> (23) a.   The farmer has killed the duckling.
>   b.   *The farmer has killed the duckling yesterday/when he was hungry.

In the absence of relevant contextual information, the past tense needs to be used with some temporal adverbial, as exemplified in (22).   On the other hand, the perfect is not permitted to occur with temporal adverbials such as *yesterday* or *when* clauses, as shown in (23) (cf. Klein 1992, Leech 1987:44‾47, among others).   Thus, McCawley claims that for the use of the past tense, some temporal antecedent is required.[7]

Closely related to this suggestion, the property of the past tense observed in the second sentence in each example below is also very crucial for the proper characterization for the past tense.

> (24) a.   Noelle leaned back in the seat.   The driver put the taxi in gear.
>   b.   The boss shouted to Marty, "You're fired."   The secretary was silently collecting important documents around his table.

For instance, in (24a), the time indicated by *put* in the second sentence should be regarded as being the same as that expressed by *leaned* in the first.   The same observation holds mutatis mutandis for (24b).   Thus, contrary to Declerck's assumptions outlined in 2.2, an instance of the past tense may be interpreted relatively, whether the clause that contains it is matrix or embedded.

From the discussion above, we conclude that the past tense is characteristically employed in some temporally pre-established domain, i.e. in a definite context. Thus, the past tense does not situate an event in a certain past-temporal point all by itself, though it is generally classified under the label of deixis.   Rather it does so with the aid of other temporal information.[8]

Given these observations on the related properties of the past tense and the notion of reference-point chain, I shall first propose the following basic principle:

> (25) *The Past-Time Reference-Point Chain Principle*
>   (i) In order to identify a time instantiated by a past-tense form, the temporal entity should be situated within the dominion invoked by another past-time referent, e.g. an instance of the past tense or a temporal adverbial.

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[7] Klein (1992:535) makes a similar observation; the past-tensed event should be located at a time presupposed by the speech participants.

[8] These observations on the past tense may seem trivial, because it is so grammaticalized that it is applicable to all possible past events.   However, without clarifying this property of weak temporal specificity, it is hardly possible to characterize its semantic function properly.

(ii) The chained temporal entities form a higher-ordered temporal dominion that is construed as a temporally structured unit.

In what follows, we will demonstrate in what manner this principle is applied to sentences with past-tense forms.

Let us start our discussion with McCawley's example from above, cited again in (26) below:

(26) *The farmer killed the duckling.   (McCawley 1971:269)

Suppose that no special contextual information is provided for example (26). As observed above, in this situation, (26) may sound weird; that was why McCawley gave the asterisk to the example. The reason may be described in terms of principle (25) above as follows. Since there is no past-temporal information in the clause and context, it is considered that the time when the event occurred is not located within a dominion. Thereby, the time is not properly identified. Nonetheless, we can still get certain temporal information from the example: the event is presumed to have happened prior to the speech time, though we do not know precisely when. This interpretation is induced by the reason why only the schematic notion of the past tense characterized in Langacker's definition above is obtained from the sentence.

Now let us move on to cases where there is an available reference point for the conceptualizer in order to situate an event in time.

(27) a. Yesterday Tim published the main accomplishment of his life.
      b. Three months ago Tim published the main accomplishment of his life.
      c. This morning Tim published the main accomplishment of his life.

Sentences (27a–c) convey the temporal information explicitly indicated by the adverbials *yesterday, three months ago,* and *this morning,* respectively. According to principle (25), when a past-time referent is employed as the reference point to identify the time of the past tense, the latter should be regarded as being temporally grouped together with the former. As is obvious from the readings of (27), the same proposition 'Tim publish(ed) the main accomplishment of his life' is situated at different times according to the choice of adverbial. This implies that the event times indicated by the past tense are directly situated in the dominions invoked by the adverbials, rather than being directly connected with the present time, i.e. the ground. Thus, the temporal reference point relationships observed in (27a–c) may be indicated as G (the ground) $> R_1$ (*yesterday/three months ago/this morning*) $> T_1$ (*published*).

Next, let us observe how an inter-sentential temporal chain is created. Consider example (28):

(28) a. [Late at night on that day] Noelle returned to the apartment. She found Philippe Sorel waiting for her. He was very drunk.
      b. John Taylor came back to see her that afternoon and was kind enough not to mention the furor in the press, but he didn't have any other news either.

The examples in (28) may be characterized in terms of the past-time reference point chain principle characterized in (25) as follows: for (28a), $G > R_1$ (*late at night on that day*) $> T_1$ (*returned*) $/R_2 > T_2$ (*found*) $/R_3 > T_3$ (*was*), and for (28b), $G >$ (*that afternoon*) $R_1 > T_1$ (*came*) $/R_2 > T_2$ (*was*) $/R_3 > T_3$ (*didn't have*). In both examples, all the targets should be temporally unified together with their reference points, since the latter indicate the past-time references.

The point here is that the chained temporal entities create a higher-ordered temporal unit. As Chung and Timberlake (1985) and many others point out, the grammatical function of tense is generally defined as expressing external time to an event or situation, whereas that of aspect indicates internal temporal differences, i.e, changes observed in an event or situation. However, once this distinction is extended beyond the level of clause, its proper application becomes obscure. Our analysis may give a solution of this problem because it supposes that the chained temporal entities create a temporal unit, which further exhibit internal temporal differences realized as aspectual distinctions.

In order to clarify the this distinction of tense and aspect in terms of the past-time reference-point principle, let us first consider the following sentence, for instance:

(29) In 1642 Newton was born in the village of Woolsthorpe in Lincolnshire, England, in the family of a yeoman farmer. The boy attended the King's school in the small town of Grantham not far from Woolsthorpe and entered Cambridge University.

Numerous things, in addition to the events described in (29), must have happened from the time of Newton's birth until his admission to university. However, these aspects are ignored, and only the prominent points are described. This aspect is not objectively derived, but subjectively chosen by the speaker (or the writer) among the numerous events. By employing the notion of the reference point chain, events that are temporally scattered in objective situations can be construed in a condensed way. Thus, the past tense functions as a conceptual strategy or as a cue in order to gather related events into the same temporal unit. This function of unifying temporally scattered events into a single temporal unit is regarded as the fundamental property of the past tense.

The internal temporal differences observed within a temporal unit established by the chain will be indicated by the function of aspect. As Dowty (1986:37–38) and Hinrichs (1986) properly point out, an accomplishment or achievement predicate indicates that an event occurred later than the time of the previous sentence's event, as exemplified below in (30a) and (30b), respectively. On the other hand, an activity or stative predicate usually indicates that the state or process overlaps with that of the previous sentence, as shown in (30c) and (30d), respectively. Note that the distinction between the aspect (Aktionsarten) of accomplishment, achievement, state and activity follows the one introduced in Vendler (1967).

(30) a. John entered the president's office. The president walked over to him.
     b. John entered the president's office. The president woke up.

    c. John entered the president's office. The clock on the wall ticked loudly.
    d. John entered the president's office. The president sat behind a huge desk.

Here, we have to clarify the following point on the choice of a temporal reference point: the relationship between reference points and liner word order. If the adverbials in (27) are sentence-final as exemplified in (31), does the same analysis apply?

(31) a. Tim published the main accomplishment of his life yesterday.
    b. Tim published the main accomplishment of his life three months ago.
    c. Tim published the main accomplishment of his life this morning.

For this question, the notion of the extent of a reference point's dominion proposed in van Hoek (1995) is very insightful: "The extent of a reference point's dominion is determined by the interaction of conceptual (semantic) connectivity and liner word order" (van Hoek 1995:324). This idea arises from her analysis of the antecedent-pronoun relationship in terms of reference point ability. Thus, she claims that for a proper understanding of the relationship, a pronoun should be situated within the dominion invoked by the antecedent, i.e. the reference point. Let us observe how the two parameters of conceptual connectivity and linear word order affect the extent of the dominion invoked by the antecedent. Note that italics are employed here to signify coreference.

(32) a. *John* checked the mail box. There was no package for *him*.
    b. **He* checked the mail box. There was no package for *John*.
(33) a. **In John*'s apartment *he* holds wild parties.
    b. *John* holds wild parties in *his* apartment.
    c. **He* holds wild parties in *John*'s apartment.

                                                 (van Hoek 1995:326)

    d. In *his* apartment *John* holds wild parties.

As exemplified in (32a, b), if the relationship between the antecedent and the pronoun is not connected with grammatical relationships, proper reference point-target relationships are triggered by the parameter of the liner word order. Thus, in order to serve as an antecedent, a nominal should occur before pronouns. Therefore, as in example (32b), this ordering being violated, the dominion invoked by *John* cannot situate any preceding nominal referent within it; *he* is not considered as co-referential with *John*. On the other hand, in (33), *John* and the pronouns are connected by means of a certain grammatical relation. In this case, the other parameter of semantic connectivity is superior to that of liner word order. The difference of conceptual prominence among the complements affects the extent of a reference point dominion. Cognitive Grammar regards the subject position as the most prominent among complements. Thus, as exemplified in (33d), in particular, even if the pronoun in the prepositional phrase sequentially proceeds the antecedent *John*, the latter, in the subject position, can situate the former, in adjunct position, within its

dominion.   Therefore, the pronoun *his* may be co-referential with *John*.

Of special interest here is the fact that the reference-point relationship created between an antecedent and a pronoun is more sensitive to conceptual connectivity than to linear word order.   Essentially the same phenomena are observed in temporal reference-point relationships.   Consider the sentences below:

(34)   a.   Because of a plague epidemic in England, Newton left Cambridge in the spring of 1665.
       b.   In the spring of 1665, because of a plague epidemic, Newton left Cambridge.

(35)   Because of a plague epidemic in England, Newton left Cambridge. In 1687, he published *Philosophae Naturalis Principia Mathematica*.

In both examples (34a, b), the time of Newton's leaving is regarded as happening in the spring of 1665, whether the temporal adverbial is located in sentence-initial or sentence-finial position.   However, in example (35), the time of his leaving is never assumed to be 1687, the year mentioned in the next sentence.   To put it another way, the event of the first sentence belongs to a temporal unit different from that expressed in the second sentence.   This observation indicates that the temporal reference-point relationship created between a temporal adverbial and the past tense is also sensitive to the conceptual connectivity instantiated by grammatical relations.   Thus, the reason why the time of *left* in (35) is not situated within the dominion created by the adverbial *in 1687* is that they are not related in terms of conceptual connectivity formally instantiated by grammatical relations.

As expected, without conceptual connectivity among temporal entities, linear word order will affect the reference point relationship among them, as exemplified below:

(36)   a.   Noelle leaned back in the seat. The driver put the taxi in gear.
       b.   The boss shouted to Marty, "You're fired." The secretary was silently collecting important documents around his table.

{= (24)}

The times indicated by the past tense in the second sentences is construed as referring to the same temporal situations that are established in the first sentences.   Thus, the past-time referents in the subsequent sentences are regarded as being located within the dominions invoked by the previous sentences, unlike the case of (35).

In the next section, we will demonstrate that this analysis for the past tense in independent clauses is extended to the temporal relation between the matrix and embedded clauses.

4.2. The Temporal Relationship between the Matrix and Embedded Clauses in Terms of the Past-Time Reference-point Chain

This section demonstrates that the foregoing principle extends to the analysis of the temporal relationship between matrix and embedded clauses. Since we limit ourselves to clarifying how the past tense in embedded clauses is related to the time indicated by the matrix clause, we ignore the issue of how the temporal reference of the past tense is decided in the matrix clause; for the past tense of matrix clauses, we follow the analysis in 4.1.

Let us start the discussion with the following sentences.

(37) a. Yesterday Tony learned that Jennifer was an actress three years ago.
     b. Yesterday Tony learned that Jennifer was an actress.

Following the past-time reference-point chain principle, the past-tensed form *was* in the complement clauses should be situated in some dominion invoked by another temporal referent. In (37a), the past tense in the complement clauses should be regarded as being directly situated in the dominion formed by the temporal adverbial *three years ago*. This is because, as argued in the previous section, the temporal adverbial shows strong conceptual connectivity with the tense of its clause. The time of the embedded clause is decided independently of that of the matrix clause. We find here that the two temporal domains invoked by the matrix and the complement clauses are subsumed in the sentence. On the other hand, without special contextual information, *was* in (37b) is regarded as being directly located in the dominion created by the matrix past-tensed verb *learned*, since there are no other temporal referents within the clause. Thus, the past tense in the complement clause is chained in the following way: $G > R_1$ (*yesterday*) $> T_1$ (*learned*) $R_2 > T_2$ (*was*). Since it is in the dominion of the matrix clause, it is subsumed in a higher-ordered domain together with the time indicated by *learned*. Based on the observation above, we find that temporal adverbials in complement clause function as preventing the event described by the clause from being subsumed in the temporal domain previously established by the matrix clause.

Note that the time of past-tensed events in complement clauses may be specified independently from that of the matrix clause, as shown in the following sentence.

(38) [We all know that Jennifer was an actress three years ago.] Yesterday her boy friend finally learned that she was an actress.

Suppose that the information described in the square brackets is shared between the speech participants before the utterance. Since the temporal reference point is available for them, the past tense in the complement clause is able to realize a different time from that of the matrix tense.

Though it is shown above that temporal adverbs are markers for creating a distinct temporal domain from that invoked by the matrix clause, we may also claim that the pluperfect and *would* in embedded clauses should be regarded as their grammatical counterparts. This property of introducing a new temporal domain is exemplified in

(39) and (40), respectively.

(39) a. He saw in the news paper that another earthquake had occurred in China.
    b. We recognized that John's team had lost against such a weak team.
(40) a. Tony learned that Jennifer would be an actress.
    b. John decided that he would sell the stock.

This present analysis of the pluperfect and *would* based on the past-time reference-point chain principle provides a new theoretical insight for the function of the pluperfect and *would* in embedded clauses. Declerck (1995) regards their functions as designating the temporal sequence within the domain established by the matrix past tense: the anteriority for the pluperfect and the posteriority for *would*. On the other hand, we claim that the past tenses realized in *had* and *would* themselves are incorporated in the dominion invoked by the matrix tense. However, as far as internal grammatical function is concerned, the pluperfect and *would* serve to get out of the chain the events substantially expressed by the past participle and infinitive, so that their conceptual contents will not be incorporated in the temporal dominion established in the current discourse.[9] What this implies is that the functional purpose of the different "tenses" such as the pluperfect or *would* in embedded clauses is to manage the event described in the complement clause on a distinct temporal plane from the one created in the current discourse. Owning to this property, the different temporal locations between the matrix event and the complement are derived.

    This observation might encounter the following problem, particularly in regard to the pluperfect. In the examples in (41), the past tense in the complement clauses seems to be regarded as referring to a time prior to the one instantiated by the matrix clause, as was observed above in connection with the function of the pluperfect. Moreover, with the pluperfect, the objective situations shown in (41a, b) may be alternatively described as in (42a, b), respectively.

(41) a. Mary found out that Jim failed the exam.
    b. Tom thought that they exploded a bomb.
(42) a. Mary found out that Jim had failed the exam.
    b. Tom thought that they had exploded a bomb.

Note that the complement verbs in (41a, b) are perfective, and as pointed out in 2.2, this aspectual problem led Declerck (1995) to analyze the past-tensed perfective verb in the complement clause as an absolute tense, rather than as the sort of relative tense that would be employed in other cases. How is this problem accounted for in terms of the past-time reference-point chain principle?

    The following claim is made with regard to this question. At first, we make sure that as discussed above, when the speech participants share the time of the past tense

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[9] Here, we follows Nakau's (1994) idea that the tense and the past participle in the (plu)perfect and the tense and the infinitive in *would* may refer to different times, the property of which is engendered by the internal function of the latter.

in a complement clause before the utterance, it is utilized even without any explicit temporal reference point in a clause.   Then, more importantly, if the conceptual content in the complement clause is new information in the discourse, the following thing should not be ignored.   When the complement clause in (41) is uttered as new information, only the available reference point for the complement clause is the time indicated by the matrix clause, as the past-time reference-point chain principle predicts.   In effect, in this new-information reading, the resultative nuance caused by the perfective event in the complement clause is often obtained at the time of the matrix clause.   This implies that the two events are construed in a temporally related way, rather than in a distinct way.   Thus, we can say that they are at first captured in the same temporal dominion formed by the past-time reference-point chain principle, and that the internal temporal sequence is derived by means of the perfective aspect of the complement event, as in the case of independent clauses observed in the previous section.

The analysis proposed above for the complement clause may be extended to the one for the relative clause.   Consider the following sentence.

(43) I saw a man who was drinking Fanta "grape."

Suppose that the relative clause in (43) is uttered as new information: the speech participants do not share the fact described in the relative clause.   In this case, the only available temporal reference point for the complement past tense is the past tense in the matrix clause.   Thus, following the past-time reference point chain principle, the event in the relative clause is construed temporally together with the event in the matrix clause.   If the speaker is to express the content of the relative clause as new information, and it is situated in a distinct time from that of the matrix clause, he/she has to add some temporal referent in the relative clause in order to give the past tense a new reference point.   This functional aspect is exemplified in the following sentences.

(44) a. I saw a man who was drinking Fanta "grape." *yesterday/when he was in Japan/a short time ago*.
      b. I saw a man who was *just* drinking Fanta "grape."

Based on this observation, moreover, consider the following a pair of the sentences.

(45) a. Bill consorted with the guy who lost the election.
      b. Bill consorted with the guy who had lost the election.

Note that a perfective verb is employed in the relative clause.   As in the case of the complement clause above, when the relative clause is uttered as new information, the resultative situation should be obtained at the time of the matrix clause.   On the other hand, this restriction is not always given to the interpretation of the pluperfect in (45b).

The rest of this section considers the cases where the matrix and embedded clauses show different tense markers.   Let us first discuss the case where the matrix

clause refers to the future or the present, and the embedded clause is marked with the past tense, as in (46a) and (46b) respectively.

(46) a. The police will find that he was killed there.
     b. My family remembers what happened in this party.

Since the matrix clause is not marked with the past tense, higher-ordered temporal unit comprising of the events of the matrix and embedded events are not created: they are regarded as being instantiated in different temporal dominion. Without special temporal presupposition, in (46a, b), the only available temporal reference points for the complement tense are considered as times indicated in the matrix tense: the future for (46a) and the present for (46b) respectively. The past tense in the embedded clauses realizes an anterior relationship to the reference point based on Langacker's essential schema on the past tense observed in section 3. In particular, in the former case, the reading of "future" past reference should be considered to engendered by the shifted deictic center, or the ground, rather than the related matter with reference-point functions. Thus, the speaker's point of view is transferred to a future time, from which vantage point, the anterior relation to the event is formed.

Note that as has been mentioned in this section, if the embedded clauses are not new information and the time is shared among the speech participants, it is independently specified, even without past temporal referents within the clauses.

Finally, let us consider the case where the matrix clause refers to a past time while the embedded clause is marked with the present tense.

(47) a. The government acknowledged that selling cigarettes is bad for the people's health.
     b. Einstein's discovery of the surprising properties of time in 1905 demonstrated the fallacy of the view that we are 'captives' of the river of time.

In this case, since the present tense is employed in the embedded clause, it is not situated within the dominion invoked by the matrix past tense. For this combination of tense between the matrix and embedded clauses, the following things are pointed out by Klein (1992) and Langacker (1991:232), for instance: (i) the conceptual content in the embedded clauses should be a fact both at the speech time and the time of the matrix clause, and (ii) the event in the embedded clause should be imperfective. Thus, the speaker can describe the situation of (45) as in (46).

(46) a. The government acknowledged that selling cigarettes was bad for the people's health.
     b. Einstein's discovery of the surprising properties of time in 1905 demonstrated the fallacy of the view that we are 'captives' of the river of time.

In addition to Langacker's (1991) observation described in 2.1, with regard to the use of the present tense in embedded clauses as in (47), the following claim may be made

in terms of the past-time reference-point chain principle. When the past tense is employed in the embedded clause, the temporal reference should be construed relative to the temporal dominion created by the matrix clause. However, the actual temporal reference is not locally limited to the domain. Thus, by employing a different tense in the embedded clause, we can get it out of the domain formed in the current discourse. To put it another way, we can regard the usage of the present tense as one of the strategies for preventing the formation of a higher-ordered temporal domain with the matrix clause.

5. CONCLUDING REMARKS

This article has focused on the problem of how the past tense specifies times in various linguistic contexts and how it relates to the ground. In section 2, it was observed that previous studies represented by Comrie (1985) and Declerck (1995) tend to analyze tense in terms of the dichotomy between absolute and relative tenses. However, it was shown that analyses based on this distinction have difficulty in accounting in a coherent way for the seemingly different functions of the past tense, in particular for the difference observed between matrix and embedded clauses. In place of the analyses based on this dichotomy, in section 4, I proposed a past-tense semantics based on the past-time reference-point chain principle, which is intended as an instantiation of the fundamental cognitive notion of reference-point ability. It was argued that by introducing this principle into the description of the past tense, one may account in a unified way for the temporal characteristics inherent in the past tense, regardless of its position in the sentence.

In conclusion, we believe there is great advantage in the fact that this description of the past tense is derived through appeal to reference point ability, an independently motivated theoretical construct that is well attested in other linguistic phenomena. The other theories reviewed rely upon parochial notions with no application outside of the analysis of tense.   Moreover, we hope that this study represents a positive step within Cognitive Grammar. Langacker (1991, 1999) maintains that the conceptual contents realized in both nouns and verbs should be grounded. However, while van Hoek (1995) and Langacker (1999) demonstrate how nouns are grounded in terms of reference point ability, little work has been done on the verbal counterparts of this phenomenon.   The present study, though limited in scope, shows that the grounding function realized by tense may also be captured in terms of the same theoretical construct.   Therefore, we speculate that further investigation of the similarities and differences between nominal and clausal grounding will reveal still more illuminating applications of the notion of reference point ability.

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