

English and Japanese Tense Realizations in Subordinate Clauses

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In spite of advances in linguistic theory, current second language (L2) research is still often couched in deterministic terms, expecting difficulty or impossibility (apparent failure) in L2 acquisition where there are parametric differences between the first (native) language (L1) and second (target) language (L2). This deterministic approach adopts transfer of L1 or availability of Universal Grammar (UG) to account for the L2 phenomena such as 'apparent failure'. This deterministic approach has recently been modified by incorporating a more fully specified understanding of both Language and Learnability of functional properties from the minimalist perspective. This paper explores specification of some parametric differences between English and Japanese, related to 'tense' within the minimalist feature-matrix. Although both English as a second language (L2) and Japanese as a first language (L1) have the so-called 'tense features', overt tense realization constraints vary. Presenting an analysis that both languages embrace the same functional properties of 'tense', but that their syntactic constraints on tense realization in subordinate clauses vary, I then suggest that a more explicit analysis of what parametric differences are may in turn lead to more specific and principled predictions about success and failure or about available/unavailable part of UG in L2 acquisition. Thereby we can easily test not only the previous L2 hypotheses which are variants of the deterministic parameter-setting model, but also the newly proposed L2 hypotheses within the minimalist framework.

1. Introduction

Parametric differences between the first language (L1) of learners and the target second language (L2) are of special interest in second language research. Tense has been one of the most discussed phenomena not only in the theoretical linguistic research, but also in the empirical research such as second language (L2) acquisition or first language (L1) acquisition studies. Tense is generally assumed that all languages have ways of locating events on a temporal scale although temporal expressions vary. In other words, tense is universally assumed in all languages but morpho-phonological forms for tense and constraints on tense realizations differ.

When L2 learners do not acquire the particular parameterized functional properties of L2, such as 'tense', but have developed a somewhat divergent system of functional properties from L2 (i.e. apparent failure), the majority of the previous L2 studies account for this kind of difficulty or impossibility in L2 acquisition, either by the various degrees of L1 transfer (e.g. interference or delearning process) or by unavailability of various parts of Language (or Universal Grammar, UG), known as 'UG Partial Availability' view (Bong 2005). Interestingly, Japanese-speaking learners do not seem to master the English tense realization system. For example, Japanese-speaking learners find it difficult (i.e. developmental asymmetry) or impossible (i.e. misdevelopment or divergence) to acquire adequate tense

realizations of English in subordinate clauses, reported in Bong (2005).

Despite advances in linguistic theory, current second language (L2) research is still often couched in deterministic terms, expecting difficulty or impossibility in L2 acquisition where there are parametric differences between the L1 and L2. It may be possible to improve this deterministic approach by incorporating a more fully specified understanding of both languages (and of learnability).¹ This paper therefore explores the parametric differences between English and Japanese, related to ‘tense’. Although both English as an L2 and Japanese as an L1 have the so-called ‘tense features’, overt tense realization constraints vary in addition to varying in morpho-phonological forms.

This paper begins with comparing the two languages, English and Japanese, focusing on their surface differences (i.e. word-order), followed by examination of the tense realization in subordinate clauses of both English and Japanese. I then suggest that both languages embrace the same functional properties of ‘tense’, but have different functional features involved with constraints on the tense realization in subordinate clauses. After a brief discussion of the parametric differences from the L2 research perspective, I conclude that the deterministic approach requires improvement and that L2 acquisition research should not neglect specified contrastive analyses of parametric differences between L1 and L2.

2. Word-Order Differences

Prior to a contrastive analysis of the tense system in both English and Japanese, let us first examine the word-order differences between the two languages, focusing on the relative positions of heads, complements (arguments), and adjuncts (non-arguments), expanding to two specific types of subordinate clauses: complement clauses (CCs) and temporal adverbial clauses (TACs) in question.

2.1 Head Positions

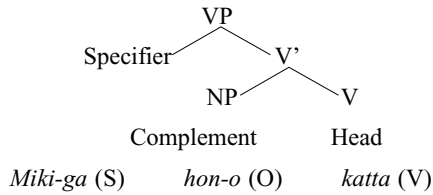
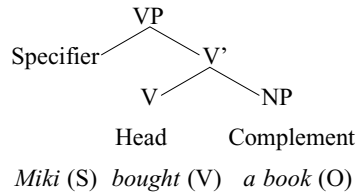
Japanese is an SOV language, in which the basic canonical (typical) word-order of transitive sentences is S(subject)-O(object)-V(verb) as in (1), which can be illustrated in a tree diagram as in (2).

- (1) a. Miki-ga hon-o katta.² ← Japanese
 Miki-Nom book-Acc bought³
 b. ‘Miki bought a book.’ ← English

¹ See Bong (2005, 2006a, to appear) for the discussion of learnability of functional properties.

² The alphabetic transliteration of Japanese used here is *romaji hyouki* ‘roman lettering’, which is used in Japanese schools. The hyphen (-) and the space between words are used for convenience to give the visual effect of distinguishing grammatical elements. Japanese is an agglutinative language. Sentences are written as follows: *Mikigahonokatta*- Miki bought a book.

³ ‘Acc’ stands for accusative case marking and ‘Nom’ stands for nominative case marking.

(2) VP (verb phrase) structures (VP internal subject hypothesis)⁴a. Japanese VP structureb. English VP structure

As we can observe, the head V comes after the complement NP: this is known as the ‘head-final’ characteristic of Japanese: i.e. Japanese is a head-final language, as in (2a), whereas English is an SOV language and not a head-final language, as in (2b).

In relation to the head-final characteristic, there are three structural properties to be mentioned. First, Japanese is a postpositional language as opposed to English, which is prepositional. All functions that are carried out in English by prepositions (Ps), and other functional relations, such as subordinating conjunctions or coordinating conjunctions (Cs), are expressed in Japanese by postpositional ‘particles’⁵, represented by *italics* in the following example.

- (3) Haruki-ga Miki-ga hon-o gakko-*de* katta-*to* itta.
 Haruki-Nom [Miki-Nom book-Acc school-at bought]-that said⁶
 ‘Haruki said that Miki bought a book at school.’

Secondly, in Japanese questions are expressed by interrogative particles such as *ka* and *no* and declaratives are marked by declarative particles such as *yo*, *ne*, and *sa*, which represent the speaker’s attitude toward the content of the sentences. These particles are known as C (complementiser) exponents. Tense is expressed by the *ru/i* form for nonpast tense and the *ta* form for past tense, known as T (tense) exponents; and negation, by *na/ma* forms, known as Neg (negation) exponents. All these heads appear in the final position of each phrasal projection in Japanese, as illustrated below:

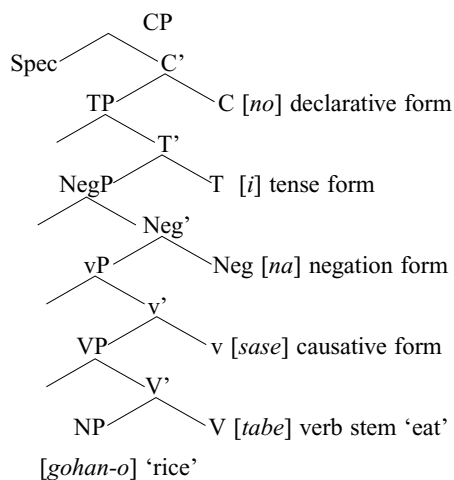
- (4) a. gohan-o tabe-sase-na-i-no.
 rice meal-Acc eat-causative-negation-tense-D clause type particle
 ‘They don’t let me eat the rice meal.’

⁴ The VP-Internal Subject Hypothesis that (non-expletive) subjects originate internally within the VP containing the relevant verb and from there move into spec-TP has been widely adopted in the literature. See Kitagawa (1986), Speas (1986), Kuroda (1988), Sportiche (1988), Koopman and Sportiche (1991), and Huang (1993) for a variety of sources and languages in support of the hypothesis.

⁵ Kuno (1973) notes that there are some seventy postpositional, but no prepositional, particles in Japanese and that all case relations such as nominative and accusative are also expressed by particles.

⁶ The square brackets indicate the clause boundary.

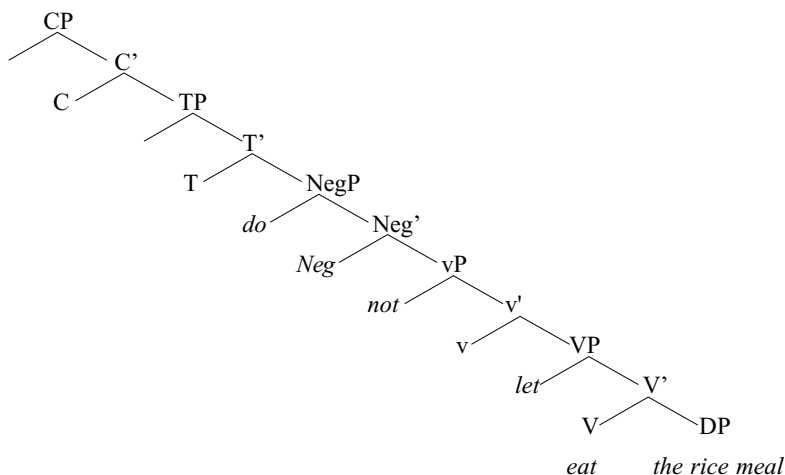
b. [_{CP} [_{TP} [_{NegP} [_{vP} [_{VP} [_{NP} *gohan-o* v *tabe*] v *sase*] Neg *na*] T *i*] C *no*]



The order of heads-complements in English can be characterised as a mirror image of Japanese, as illustrated below:

(5) a. They do not let me eat the rice meal.

b. [_{CP} C [_{TP} T *do* [_{NegP} Neg *not* [_{vP} v *let* [_{VP} v *eat* [_{NP} *the rice meal*]]]]]]]]]



An important tacit assumption in the tree diagrams of English and Japanese given above is that there is a universal hierarchy of functional heads. There are features of clause typing complementiser (CP), tense (Tense Phrase: TP), negation (Negation Phrase: NegP), grammatical aspect (Aspect Phrase: AspP)⁷ and so on that can function as heads projecting a phrasal category containing a specifier and a complement. In addition, adopting Chomsky (1995), I accept the possibility of iterative projections (e.g. CP-shell covering for Topic Phrase (TopP), Focus Phrase (FocP), etc, and VP-shell covering light verbs (vP) and

⁷ See Bong (2003) for discussions of Aspect Phrase as a functional projection.

lexical main verbs (VP)).^{8,9} Put simply, I assume that the functional heads, C, T, Neg and Asp are hierarchically ordered (not head-direction) as follows (notations of heads in brackets indicate head-final languages like Japanese):

- (6) [CP C [TP T [NegP Neg [AspP Asp [VP v [VP V NP (v)] (v)] (Asp)](Neg)](T)](C)]

Lastly, in Japanese, adjectives, genitives, and relative clauses precede a head noun. This is known as ‘left-branching’. For example, the genitive *Miki-no* ‘Miki’s’ and the adjective *utsukushii* ‘beautiful’ appear as in English prior to the head noun *imouto* ‘sister’, as illustrated in (7).

- (7) *Miki-no-utsukushii-imouto-ga igirisu-ni kita.*
 Miki-of- beautiful-sister-Nom England-to came.
 ‘Miki’s beautiful sister came to England.’
- (8) *Miki-ga kaita (*to) hon-o yonda (*dare) Kiyō-ga waratta.*
 [[[Miki-Nom]wrote] (*that) book-Acc read] (*who) Kiyō-Nom laughed
 ‘Kiyō who read the book that Miki wrote laughed.’

In Japanese relative clauses, the head nouns that are relativised follow the relative clauses, and neither overt C *to* ‘that’ nor relative pronouns (known as operators) such as *dare* ‘who’ are allowed as in (8).¹⁰ For example, the relative clause *Miki-ga-kaita* ‘Miki wrote’ appears before the head noun *hon* ‘book’ and the relative clause *Mikiga-kaita-hono-yonda* ‘read the book Miki wrote’ before the pronoun *Kiyō*: i.e. Japanese Left-Branching-[_{relative}CP NP].

Notice that Japanese relativisation does not involve *wh*-operator movement, unlike English (see section 3.2). Notice further that in English relative clauses, such as that given in the translation of the Japanese sentence in (8), the head noun *Kiyō* precedes the relative clause *who read a book that Miki wrote*: this is English Right-Branching - [NP _{relative}CP]. Although English adjectives and genitives appear to the left of the head as in Japanese, English can be viewed as a ‘right-branching’ language with respect to non-arguments such as relative clauses and adverbials (see below for the canonical adjunction

⁸ Cinque (1999) argues for a number of functional heads based on the distribution of adverbs, proposing a 32-head structure for the number of functional heads in TP. On the other hand, Chomsky (1995, 2000a, 2001) identifies three basic functional heads C, T, and D, leaving open the possibility for these being cover terms for more complex systems (Roberts & Roussou 2003). This, Chomsky’s conservative view, is widely accepted in the literature (cf. Cardinaletti and Starke 1999, Grohmann 2000, Platzack 2001) and is further supported by Belletti’s (1999) proposal to iterate the projections found in the C system (Topic, Focus, etc) so that functional heads can repeat themselves in different domains. Although these two views differ in approach and execution, they converge on a generalisation that functional heads establish a functional hierarchy: that is, there exists a universal hierarchical ordering of functional heads.

⁹ See Chomsky (1995) for a light verb analysis and Radford (1997) for an introductory account of VP-shell analysis, in which VPs have a complex structure that comprises an inner VP and an outer vP shell, and in which some (e.g. agent) arguments originate within the outer vP shell, while other (e.g. theme) arguments originate within the inner VP

¹⁰ Consult Murasugi (2000), who argues that Japanese lacks relative clauses altogether, owing to disallowance of overt C to or relative pronouns such as *dare* ‘who’. See Kuno (1973) and Perlmutter (1972) for an analysis of ‘gapless relatives’ in Japanese and Hoji’s (1985) argument for non-movement (i.e. no relative operator movement) in Japanese relative clauses.

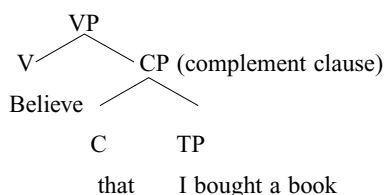
site of TACs).

Having seen that Japanese has characteristics of head-final and left-branching whereas English has characteristics of head-first and right-branching, let us now examine the structural manifestations of the two types of subordinate clauses: CCs and TACs.

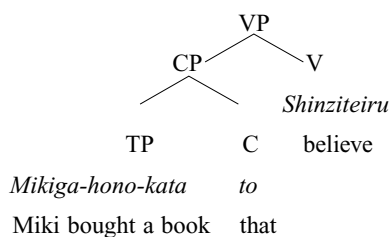
2.2 Complement Clauses (CCs)

We have seen that in Japanese complements precede heads whereas English complements follow heads. When complements are clausal, the same applies: in English, a clausal head *that* precedes a clause as in (9a) and a clausal head *to* follows a clause as in (9b).

(9a) English: the head-complement order



(9b) Japanese: the complement-head order



In addition to the difference in the order of head and complement, there are several other differences between the English *that*-headed CC and the Japanese *to* 'that'-headed CC. In other words, the C *that* in English does not exhibit the same properties as its Japanese counterpart *to*. Fukui (1986,1988, 1995) argues that Japanese lacks a C with the same properties as the English Cs, as well as D and Agr categories. In this thesis, following Roberts (2001), Roberts and Roussou (2003), Cinque (1999), I assume that all functional categories exist in every language, but that some of them are not overtly realised or used (-PF, no overt phonological forms) in a particular language.

2.3 Temporal Adverbial Clauses (TACs)

I shall limit temporal adverbial clauses (TACs) to those headed by such temporal connectors as *before*, *after*, and *while*, leaving aside other kinds such as *since* and *until*.¹¹

Canonical Positions of TACs

English TACs can appear either in a sentence initial position as in (10a), or in a sentence final position as in (10b), which is regarded as the canonical position of TACs in English owing to the fact that English is characterised as right-branching for non-argument clauses as we have seen in the case of the position of relative clauses (see Thompson 1999 and Ernst 2002 for discussion of the specific adjunction sites of TACs).

¹¹ As a clarification of the term 'adverbial' clause, I adopt the syntacticians' typical application of the term 'adverbials' to phrases or clauses that modify verbs or sentential objects (IP, CP, and VP). Adjuncts include both adverbials and adjectivals (i.e. AdjPs and phrases that function like them). The term 'adjuncts' seems to have a wider range than the term 'adverbials'. Nonetheless, since this thesis mainly deals with the three kinds of temporal clauses that modify a main clause, but not with adjectivals, I shall use the term 'adverbial'.

(10) English TACs

- a. *After/before/while* Richard listens to the radio, Lisa will study
 b. Lisa wrote an essay *after/before/while* Richard watched TV.

On the other hand, Japanese TACs cannot appear in a sentence final position as in (11), but can appear either in sentence middle positions posterior to the topicalised or focused subject as in (12) or in a sentence initial position, which is regarded as the canonical position of TACs in Japanese, as in (13), owing to the characteristics of left-branching of non-argument clauses.

- (11) *Harumi-ga benkyousuru-desyou Miki-ga ramen-o tabeta-ato(ni/de)¹²
 Harumi-Nom study-will [Miki-Nom noodles-Acc eat-Past-after]
 (12) Harumi-wa/ga Miki-ga ramen-o tabeta-ato(ni/de) benkyousurudesyou.
 Harumi-Top/Nom (F) [Miki-Nom noodles-Acc eat-Past-after] study-will
 (13) Miki-ga ramen-o tabeta-ato(ni/de) Harumi-ga benkyousurudesyou.
 [Miki-Nom noodles-Acc eat-Past-after] Harumi-Nom study-will
 ‘After Miki eats noodles Harumi will study.’

I shall limit the scope of this discussion to the canonical position of TACs, namely the branching to the TP of the matrix clause, as in (11) for English (right-branching), and (13) for Japanese (left-branching), and avoid discussing subtle semantic and syntactic differences depending on various adjunction or dislocated sites (see Thompson 1999, Ernst 2002, Cinque 1999). Let us now examine the internal structure of TACs.

The Underlying Structure of TACs

According to Larson (1987, 1990), temporal connectors such as *before*, *after*, and *while* in English, which introduce a TAC and take a CP as a complement, are prepositions (Ps).¹³

- (14) I saw Tom in York [PP before [_{CP1}he claimed [_{CP2}that he would arrive]]].
 (15) [_{PP} before [_{CP1} Op_i he claimed [_{CP2} that [he would arrive]] *t_i*]]
 → saw Tom in York before he made a certain claim, that is, that he would arrive (sometime).
 (16) [_{PP} before [_{CP1} Opⁱ he claimed [_{CP2} *t_i*’ that [he would arrive *t_i*]]]].
 → saw Tom in York prior to some time that he alleged would be the time of his arrival.
 (17) [_{PP} P *after/before/while* [_{CP} Op_i c null [_{TP} *t_i*]]]

¹² The particles *ni/de* in brackets are optional. The particle *ni* requires that the semantic content of the two sentences must be such that the time left by the main clause is filled by the time of the adverbial clause, whereas the particle *de* requires that there should be some time gap between the time of the main clause and the time of the adverbial clause (Kuno 1973). When no such particles appear, both meanings can be conveyed.

¹³ Consult Dubinsky and Williams (1995). They claim that temporal connections (prepositions) such as *after*, *before*, and *while* have a dual categorial status: complementisers when they head temporal adverbial clauses, otherwise prepositions. The categorial status of the temporal connectors is not my main concern and I shall not discuss it any further.

This sentence shows a PP containing a tensed complement (a CP). Geis (1970) observes that sentences like (14) are ambiguous between two readings of the temporal PP: either (15) or (16). Larson (1987, 1990) accounts for this ambiguity by positing a null operator movement: a null operator, whose position and meaning is equated with *when*, moves from either of the embedded clauses. In (15), the operator modifies *claimed*, whereas in (16), the operator modifies *arrive*. Following Larson (1987, 1990), I assume that the internal structure of English TACs involves a null operator movement. Therefore, when there is one TAC, we can represent the internal structure of TACs in English as in (17).

Analogously, Miyamoto (1996) observes that Japanese allows the same ambiguity in TACs as English does. The counterparts of the English temporal prepositions *before*, *after* and *while* are *mae(ni)* ‘before’, *ato(de)* ‘after’ and *aida(ni)* ‘while’ in Japanese. Consider the following Japanese sentence.

(18) Watashi-wa Miki-ga tsuku-to iu mae-ni kanozoyo-o York-de mikaketa.
I-Top [Miki-Nom [*pro* arrive that] said before] her-Acc York-in saw
‘I saw Miki in York before she said that she would arrive.’

(19) [_{PP} [_{CP} Opi [_{TP} ti]_C Null]_P mae/ato/aida]

The sentence in (18) can mean either that I saw Miki in York before she made a certain assertion, namely that she would arrive, or that I saw Miki before the time of her scheduled arrival. In the same way as in English, there seems to be a null operator movement in Japanese. The underlying internal structure of TACs in Japanese can be represented as in (19). That is to say, I assume that the underlying internal structure of TACs in English and Japanese manifests the same null operator movement, and the heads of TACs are PPs.

2.4 Summary of Linguistic Assumptions

English has been compared with Japanese with respect to word-order differences. Japanese heads follow their complements (head-final) and non-arguments such as relative clauses and TACs are left-branching. English displays the characteristics of head-first and right-branching. Nonetheless, TACs in English and Japanese manifest the same null operator movement and the same kind of heads and adjoin to the TP of the matrix clauses. Having seen the word-order difference between English and Japanese, let us move on to the specific parametric differences that we are interested in.

3. Parametric Difference in Tense Realization

This section examines *tense system* to see whether there are specific parametric differences in the tense realization in the two types of subordinate clauses: namely complement clauses (CCs) and temporal adverbial clauses (TACs).

Consider the notion of tense. It is generally assumed that all languages have ways of locating events on a temporal scale although temporal expressions vary. Temporal expressions can be divided into two types: lexical and morphological. The former are denoted by lexical items such as *the other day*, *last night*, *yesterday*, *this morning*, *will*, *would*, and so on. The latter are expressed by the

morphological inflections of the verbal elements (e.g. auxiliaries and verbs), such as *-s* and *-ed* in English. We can subsume all these under the heading ‘temporal elements that are related to Tense Phrase (TP)’. These temporal elements can be related to TP: e.g. adjunction to TP, merge to TP-specifier or T-head, or agreement relation with TP. Restricting the scope to the temporal elements relevant for the TP-head, I assume a binary tense system: past and non-past (subsuming the traditional present and future). The term ‘tense’ is restricted to the one expressed morphologically: namely morphologically inflected forms. This implies that *will* carries the non-past tense feature although it denotes the future event (cf. Enç 1991).¹⁴ Given the forgoing clarification of the proposition that tense is binary: $+/-$ past, comprising past and non-past tense features (\pm PAST), let us examine tense realisations in the two types of subordinate clauses in English and in Japanese.

3.1 The English Tense System in Subordinate Clauses

This section examines tense realisation in CCs and TACs in English, focusing on the relationship between the tenses of the matrix clauses and those of the two types of subordinate clauses. First, the traditional terms ‘Sequence of Tense’ and ‘Tense Matching Requirement’ are considered. Secondly, it is argued that the ‘sequence of tense’ property can be characterised as one aspect of the tense matching property, which is in turn formulated as an optional formal feature similar to the agreement feature for licensing a copy.

Sequence of Tense

‘Sequence of Tense’ is a generalisation about the relationship between the verb forms in sentences: when the first verb (the matrix verb) is in the past tense, the second verb (the embedded verb) is also in the past tense (cf. Enç 1991, Abusch 1988, 1997, Stowell 1993, 1995a for discussion of sequence of tense).¹⁵ Consider the following English sentences that instantiate the Sequence of Tense effect in the context of ‘indirect speech’.

- (20) Sequence of Tense: Indirect Speech
- a. Sebastian *thought* that Elizabeth *was* pregnant.
 - b. Elizabeth is pregnant.
 - c. Martine *said* that she *would* come to Cambridge.
 - d. Martine said, ‘I will come to Cambridge.’

When the first verb (the matrix verb) is in the past tense, the second verb (the embedded verb) is also in the past tense. When SOT is applied, past tense on the matrix verb forces past tense on the second verb,

¹⁴ This past and non-past tense distinction correlates with time-reference (to some extent) in placing events on a temporal scale. However, the correlation is not always applicable to the morphological past manifestations of modals such as *might* or *could* as in *I might see you tomorrow* or *I could do that later*, in which the modals do not denote past time. Modals of this kind should be discussed independently of tense. I shall leave this issue open.

¹⁵ According to Ogihara (1989, 1996), the presence or absence of a sequence of tense (SOT) rule distinguishes between English and Japanese.

irrespective of the semantic interpretation of the second verb. For example, it might be true either that Elizabeth is still pregnant at the time of speech or that Elizabeth has had her baby and is therefore no longer pregnant. Note that this SOT generalisation is a purely syntactic one that relates the forms of the verbs in the matrix and embedded clauses, and that it is the past tense in the matrix clause that forces the tense of the embedded clause to be in the past.

Tense Matching Requirement

Now consider tense realisation in TACs in English. Geis (1970) points out that the tenses in matrix clauses impose a restriction on tenses in TACs: this is known as the ‘Tense-Matching Requirement’, as illustrated below:

(21) Present Tense in the Matrix Clause- TACs

- a. Maria *studies* English *after/before/while* Lisa *listens* to Bruckner.
- b. *Maria *studies* English *after/before/while* Lisa *listened* to Bruckner.
- c. *Maria *studies* English *after/before/while* Lisa *will listen* to Bruckner.

As expected from the Tense-Matching Requirement, the matrix present tense forces the tense in the TAC to be realised as ‘non-past’ as in (21). Interestingly, the matrix past tense forces the tense in the TAC to be in the past as in (22), thus reproducing the Sequence of Tense effect (in the context of ‘indirect speech’) that we saw earlier.

(22) Past Tense in the Matrix Clause

- a. Maria *studied* English *after/before/while* Lisa *listened* to Bruckner.
- b. *Maria *studied* English *after/before/while* Lisa *listens* to Bruckner.
- c. *Maria *studied* English *after/before/while* Lisa *will listen* to Bruckner.

Owing to the Tense-Matching Requirement, only when both the matrix and the TAC contain the same overt tense realisation, are such sentences as (21a) and (22a) regarded as ‘grammatical’. On the other hand, when different tenses are realised in the matrix and the TACs, such sentences as (21b and c) and (22b and c) are regarded as ‘ungrammatical’.

Recall the distinction between past and non-past tense. *Will* is seen as a non-past form, and *would* as a past form. We can account for the grammaticality of the sentence (23a) as being a result of the non-past tense matching, and for the ungrammaticality of the sentence (23b) as a result of the absence of tense matching between the matrix and the TAC.

(23) *Will* in the Matrix Clause

- a. Maria *will* study *after/before/while* Lisa *listens* to Bruckner.
- b. *Maria *will* study *after/before/while* Lisa *listened* to Bruckner.
- c. Maria *will* say that Fiona *was* ill yesterday.
- d. Maria *will* borrow the book that Jane *returned* yesterday.

(24) *Will* both in the Matrix and TAC

- a. * Maria will study *after/before/while* Lisa *will* listen to Bruckner.
- b. Maria *will* say that Fiona *will* come to the party.

However, one might wonder about sentences in which *will* appears both in the matrix and in the TAC as illustrated in (24). The ungrammaticality of sentences like (24a) is not expected from the Tense-Matching Requirement. It appears that the appearance of *will* in TACs is restricted. The restriction on the occurrence of *will* in TACs is not due to the temporal factor, but to the modality factor (Iwaya 1998). Ota and Kajita (1974) observe that *will* can appear in TACs as shown below:

(25) When you *will* go philandering, you must not complain if your wife walks out on you. (Quoted from Ota and Kajita 1974)

Ota and Kajita (1974) suggest that *will/would* can appear in TACs when they denote volition: when they in other words exhibit what is known as ‘root modality’. English modal expressions can be divided into two according to their functions: epistemic modality and root modality (Hofmann 1976: cf. Perkins 1983; Lyons 1977; Quirk et al. 1985).¹⁶ The epistemic modality functions as denoting speakers’ judgement about the possibility or the probability of the proposition, while the root modality functions as expressing the ability, logical necessity and obligation of the subject, as in (26).

- (26) a. John *called* before he *could* leave/have left the lecture.
- b. John *will* leave before he *can* eat. (ability)

When the modals function as denoting a ‘root’ modality, they can appear in TACs. On the other hand, when the modals function as an expression of epistemic modality, they are not compatible with TACs. This incompatibility of epistemic modality with TACs can also be supported by the incompatibility of presumptive adverbials in TACs.

(27) Presumptive Adverbs in TACs

- a. *They will write a poem **after/before/while** they *will probably/maybe/likely* attend the lecture on the Divine Comedy.
- b. *They painted a picture **after/before/while** they *probably/maybe/likely* listened to Beethoven’s 9th symphony.

(28) Presumptive Adverbs in the Other Subordinate Clauses

- a. I will read the book **that** John *will likely/maybe/probably* read.
- b. Cindy said that Andrew *probably/maybe/likely* attended the lecture.

Note that the tense-matching requirement property is purely syntactic in the sense that the logical

¹⁶ See Palmer (1979, 1990) for the division of modality: epistemic, deontic, and dynamic modality.

temporal order of the two events denoted by the matrix and the TACs is not directly reflected in the overt realisation of tenses. Consider the following sentences.

(29) Logical Temporal Order

- a. *John will come after Maria came.
- b. *John came before Maria comes/will come.

On a time line, it seems possible to interpret the sentence (29a) as meaning that the event of John's coming takes place in the future, so that it is posterior to the event of Maria's coming, which has taken place in the past: that is the logical order of the events. However, such sentences are regarded as 'ungrammatical'.

Formulation of a Formal Feature with the Matching Property

This Tense-Matching Requirement is purely syntactic and idiosyncratic to particular subordinate clauses such as 'reported clauses' and TACs. In other words, it forces the inflectional (morphological) realisation of tenses in particular subordinate clauses to match that of tenses in the matrix clauses. Furthermore, it does not seem to carry any significant semantic import, but it mediates a syntactic agreement between the tense of the main clause and that of particular subordinate clauses.¹⁷ We can now characterise the tense-matching requirement property as a formal Tense-Matching feature similar to the agreement feature for licensing a copy proposed in Rizzi (1990). Therefore, I assume that this formal Tense-Matching feature is situated in the CP projection,¹⁸ following Chomsky's (1995) assertion that every C-projection contains a set of formal features. In addition, I suggest that this formal feature is one of the optional formal features in the lexicon, so that it can be optionally selected and enter into the computation depending on the numeration of a lexical array for a phase (an expression). In other words, this formal Tense-Matching feature can be associated with various exponents of the head C, which introduce particular subordinate clauses and manifest the property of the clause types such as 'reported clause' or 'temporal clause'.

Tense Double Access Property

Compare the following sentences, which illustrate pairs of tenses in matrix and subordinate clauses: the subordinate verb in *italics* matches the tense of the matrix clause (with the Tense-Matching property), and the other, in **bold-faced letters**, does not (without the Tense- Matching property).

¹⁷ Owing to the absence of significant semantic import, it seems reasonable to assume that this formal Tense-Matching feature in the CP is uninterpretable and thus requires an Agree operation with the affixal/inflectional T-feature of T so that tense realisation of particular subordinate clauses is forced to match that of their matrix clauses. Nevertheless, I shall leave the question of interpretability open.

¹⁸ See McCloskey (1979, 1990, 1999) for a suggestion that C and T work as a unit and that the T-dependency can be manifested on T or on C, but not on both, examining Irish, in which complementisers and particles vary according to tense (\pm PAST).

(30) Matching /non-Matching (Double Access Reading)

- a. Nick *predicted* that prices *would/will* remain stable for the next few weeks.
- b. Woody *said* that his city *would/will* run out of cash by December.
- c. Naomi *said* that she *was/is* innocent.
- d. Ian *believes* that Lisa *is/was* in London.

The tense forms in bold-faced are interpreted independently of the main clause: i.e. these sentences show the so-called ‘double access readings’ (cf. Enç 1991, Abusch 1997, Ogiwara 1997; see Stowell 1995b for an account of this phenomenon employing the notion of ‘scope out’).¹⁹ In the double access reading context, the temporal property of the statement in the complement clause is evaluated to the time of speech: I call this a ‘declarative clause-type’. On the other hand, in the tense matching context, it is evaluated as being at the time of the matrix event: I call such a complement clauses is of what is called a ‘reported clause-type (non-declarative)’. In other words, the two different tense realisations can be characterised as manifestation of the different clause-types of complement clauses: namely indicating either a ‘reported clause’ or a ‘declarative clause’. To denote a ‘reported clause’ (and a ‘temporal clause’, as we have seen in TACs), the C incorporates the formal Tense-Matching feature, whereas to denote a ‘declarative clause-type’, the C does not incorporate the formal Double-Access feature, which is derived in the same way as the formal Tense-Matching feature. Extending out attention to relative clauses in which non-tense-matching can be frequently observed, we can state that the C that introduces a relative clause of ‘declarative clause-type’ incorporates not the formal Tense-Matching feature but the formal Double-Access feature, as illustrated in (31).

(31) No Tense-Matching: Relative Clauses

- a. Maria *knows* Tanya who *will organise/organises/organised* the conference.
- b. Tristan *will* buy the book that Tolkien *will write/writes/wrote*.
- c. Lisa *bought* the book that *was/is/will be* given to Carlo for his birthday.

The non-tense-matching property of this kind can be differentiated from the tense matching property by the absence or presence of the formal Tense-Matching feature associated with a C that introduces a particular type of clauses.

3.2 The Japanese Tense System in Subordinate Clauses

This section examines tense realisation in CCs and TACs in Japanese, focusing on the relationship between the tenses of the matrix clauses and those of the two types of subordinate clauses. First, the traditional term ‘Relative Tense’ is considered by examining whether there are any ‘Sequence of Tense’ effects or ‘Tense Matching Requirement’ effects’ or ‘Double Access effects’ in Japanese subordinate

¹⁹ Relative clauses are comparatively free from tense-matching effects. Stowell (1995b) argues that the relative clause moves out of the scope of its controller at LF in order to get an independent (or indexical) tense interpretation, proposing a functional category that denotes time, following Zagana (1990) who proposes that tense itself is an argument and that the tense element in a complement clause is controlled by the higher (matrix) tense.

clauses. The ‘Relative Tense’ property is then formulated as a formal Relative-Tense feature, just as a formal Tense-Matching feature was formulated.

No Sequence of Tense Effects in Japanese

According to Ogihara (1989, 1996), the presence or absence of the Sequence of Tense rule distinguishes between English and Japanese. Accordingly, Japanese is a so-called non-SOT language, lacking sequence of tense effects. That is to say, in Japanese the past tense of the matrix clause does not force the tense of the ‘reported clause’ to be past, as is seen in sentences like the following:

(32) Indirect Speech

- a. Haruka-wa Makiko-ga sokoni *i-ta-to* itta.
Haruka-Top [Makiko-Nom there be (past)]-that said (past)
Literally, ‘Haruka said that Makiko was there.’
Relative Tense reading, ‘Haruka said that Makiko had been there.’
Double Access reading, ‘Haruka said that Makiko was there.’

- b. Haruka-wa Makiko-ga *ku-ru-to* itta.
Haruka-Top [Makiko-Nom come (nonpast)]-that said (past)
Literally, ‘Haruka said that Makiko comes.’
Relative Tense reading I, ‘Haruka said that Makiko would come.’
Double Access reading II, ‘Haruka said that Makiko will come.’

As for the relative tense readings, clearly the relationship between the tense of the embedded clauses and the tense of the main clause in Japanese is not the same as in English. Specifically, the Japanese *-ru/ta* (non-past/past) forms in the ‘reported’ clauses anchor an event in time to the event time of the main clause. The past tense *-ta* form is used for the meaning of ‘anterior to’ the main event as in (32a): giving rise to the intended interpretation that the event of Makiko’s being, denoted by the verb *i* ‘be’ with the form *-ta* ‘past’, is taking place anterior to the main event of Haruka’s saying. The non-past tense *-ru* form is used for the meaning of ‘posterior to’ the main event as in (32b). This exemplifies what is traditionally called the ‘Relative Tense System’ in Japanese (see Comrie 1985, Ogihara 1989, 1994, 1995). On the other hand, the tenses of the embedded clauses, which become ‘declarative type’, can have double access readings like English.

No Tense Matching Requirement Effects

Recall the ‘tense-matching requirement’ between the matrix and the TAC in English. Let us now consider tense realisation in Japanese TACs, which in fact show no Tense-Matching Requirement effects.

²⁰ See Kuno (1973) for the insubstantial difference between phrases with the particles *-ni/de* and phrases without them. The particles *-ni/de* require that the semantic content of two consecutive events should be such that the vacuum (temporal space) left by the first event (the main event) is filled by the following event. To put it another way, when the temporal gap is conceptually long, the particles *-ni/da* should not be present.

- (33) Kinoo Miki-ga ramen-o tabe-*ta* (**ru*) ato (de)²⁰ terebi-o *mita*.
 Yesterday Miki-Nom [pro noodles-Acc eat-past after-at] TV-Acc saw
 (Literally, ‘Miki watched TV after she ate noodles yesterday.’)
 ‘Miki watched TV after she ate noodles yesterday.’
- (34) Miki-ga ramen-o tabe-*ta* (**ru*) ato(de) terebi-o *miru*.
 Miki-Nom [pro noodles-Acc eat-past after-at] TV-Acc see-non past
 (Literally, ‘Miki will watch/watches TV after she *ate* noodles.’)
 ‘Miki watches TV after she eats noodles.’

As we can observe from the above examples, only the past tense form *-ta* is allowed in the *ato* ‘after’-headed TAC, whether the event takes place in the past or in the future. When the non-past tense form *-ru* is realised in the *ato* ‘after’-headed TAC, then the sentence become ‘ungrammatical’, even though the tenses are matched to each other. On the other hand, when the *-ru/ta* forms appear in the *mae* ‘before’ and *aida* ‘while’-headed TACs, the acceptability of the sentences becomes the other way around: that is, only the form *-ru* is allowed, not the *-ta* form, as illustrated below:

- (35) Kinoo Miki-ga [ramen-o tabe-*ru* (**ta*) mae/aida-ni] terebi-o *mita*.
 Yesterday Miki-Nom [pro noodles-Acc eat-non-past before/while-at] TV-Acc saw
 (Literally, ‘Miki watched TV before/while she eats noodles yesterday.’)
 ‘Miki watched TV before/while she ate noodles yesterday.’
- (36) Miki-ga [ramen-o tabe-*ru* (**ta*) mae/aida-ni] terebi-o *miru*.
 Miki-Nom [pro noodles-Acc eat-non past before/while-at] TV-Acc see-non past
 (Literally, ‘Miki will watch TV before/while she eats noodles.’)
 ‘Miki will watch TV before/while she eats noodles.’

As we have seen, tense realisation of this kind in TACs can be construed as a result of the relative tense realisation system in Japanese: the non-past *-ru* form encodes simultaneity/posterity to the matrix event and the past *-ta* form encodes anteriority to the matrix event.²¹ Therefore, the non-past *-ru* form correlates with *mae* ‘before’ for posterity and with *aida* ‘while’ for simultaneity, while the past *-ta* form correlates with *ato* ‘after’ for anteriority to the matrix event.

The Relative Tense Property

In Japanese, the relative tense property forces tenses in TACs and reported CCs to be relative to the time of the matrix event, instead of anchoring them in the time scale independently. Thus the tenses realised

²¹ Nakau (1976) points out that the *-ru/ta* forms in temporal adverbial clauses are not temporal, but aspectual, suggesting that the *-ru/ta* forms have dual functions of temporal and aspectual (cf. Bong 2003). In a similar vein, Teramura (1984) and Kinsui (1994) observe that in addition to a non-past/past eventive interpretation, the *-ru/ta* forms can be given a non-temporal, adjectival (stative), namely aspectual interpretation. However, aspectual interpretations of the *-ru/ta* form can be connected to interpretations in which the use of that form is a result of the relative tense system of Japanese. I shall not discuss this issue any further.

in such subordinate clauses as a temporal clause (i.e. TACs) and a reported clause (CCs) are regarded as denoting posterity/simultaneity or anteriority to the time of the main event, depending on whether the *-ru* form, or the *-ta* form is used. Analogously to the Tense-Matching property in English, this relative tense realisation property can be formulated as a formal Relative-Tense feature that can be associated with a head C that introduces particular subordinate clauses like TACs and reported CCs. This functional feature forces the inflectional (morphological) realisation of tenses in particular subordinate clauses to express posterity and anteriority to the event of the matrix clauses: namely the relative tense realisation system.²²

3.3 Recapitulation of Parametric Differences

So far we have examined different tense realisations in subordinate clauses of particular types both in English and Japanese. Tenses in subordinate clauses are governed by properties of the head C that introduces clauses, which differ between Japanese and English. We can describe these differences between English and Japanese with respect to the properties of C by means of functional features as follows:

(37) The Parametric Difference in the properties of tense realisation

“A C that introduces a reported clause-type (some CCs) or a temporal clause-type (TACs) incorporates a formal Tense-Matching feature in English, and a formal Relative-Tense feature in Japanese.”

(38) The Parametric Similarity in the properties of tense realisation

“A C that introduces a declarative clause-type incorporates a formal Double-Access feature both in English and Japanese.”

4. Discussion and Conclusion

I have presented a descriptive contrastive analysis of the two languages, English and Japanese, within the recent generative framework, namely the minimalist approach to parametric difference. First, I have briefly described the word-order differences. For example, English heads precede their complements (head-first) and non-arguments such as relative clauses and TACs are right-branching. Japanese displays the characteristics of head-final and left-branching. Interestingly, the underlying syntactic properties of TACs in English and Japanese manifest the same with respect to the null operator movement and the kind of heads and adjunction to the TP of the matrix clauses. Then, I have established a contrastive analysis of the English and Japanese tense realization in subordinate clauses by means of a minimalist feature-matrix. In English, a formal Tense-Matching feature is associated with the embedded C while a formal Relative-Tense feature is selected in Japanese. In other words, English has the functional ‘Tense-

²² See Comrie (1985) for the distinction between the absolute and the relative tense and for the relative tense realisation system in English: e.g. relating the situations (Event time) to the present moment (Speech time) gives rise to absolute tenses or relating the Event time to the reference point (Reference time) gives rise to relative tenses such as ‘future perfect’ and ‘pluperfect’.

Matching' feature, but Japanese does not. Instead, Japanese has the functional 'Relative-Tense' feature. In addition, both English and Japanese embedded C can incorporate the functional 'Double-Access' feature when the C introduces a declarative clause-type as a complement.

Let us now consider the parametric differences in tense realizations between Japanese and English from the L2 research perspective. Under the various degrees of L1 transfer account, what L2 learners ultimately acquire (including the apparent failure) differs from what L1 learners acquire because L2 learners encounter various intractable problems due to transfer of L1 and thus specific to L2 learners.²³ Under the UG Partial Availability view,²⁴ the some part of the UG inventory is available while the other part is unavailable for L2 learners. The available inventory of UG that L2 learners can make use of includes some/all parts of the L1 grammar throughout the period of L2 acquisition, in addition to those parts of the UG inventory that are common to all languages such as UG principles. On the other hand, the unavailable inventory of UG includes those parts non-instantiated in the L1 grammar or those parameters and their values that differentiate language from one another and thus it has been hypothesized in the L2 literature that those parts are degenerated or impaired after a critical period.²⁵

Both the various degrees of L1 transfer view and the Partial Availability view predict that Japanese-speaking learners will face problems (difficulty or impossibility) in acquiring the 'tense-matching' property due to the 'relative-tense' property of the L1 Japanese. However, this prediction is in fact not supported by the L2 data reported in Bong (2005), in which Japanese-speaking learners do not seem to have problems in acquiring the 'tense-matching' property. In addition, these two views also predict that Japanese-speaking learners will be able to acquire the 'double-access' property (easily) because both English and Japanese have the functional 'double-access' feature. Contrary to the prediction, Bong (2005) reports that Japanese-speaking learners seem to have not acquired the English double access property. That is to say, the L2 data in Bong (2005) does not bear out the predictions derived from the both views on L2 acquisition, which are characterized as variants of the deterministic parameter-setting model. This deterministic parameter-setting model, according to which the child has to set a specific parameter according to (or to match) a specific input setting, has been criticized in various ways (see Clark and Roberts 1993, Roberts and Roussou 2003; Bong 2005 among others): e.g. incapability of diachronic parameter change. As a result of the advancement of linguistic theory, it seem necessary that any language acquisition theories derived from the earlier linguistic assumptions should be reexamined.

In conclusion, the previous L2 acquisition views such as the various degrees of L1 transfer and the partial UG availability/unavailability views, which are characterized as variants of the deterministic

²³ Some representative L2 hypotheses are the Full Access/Full Transfer Hypothesis (Schwartz and Sprouse 1994; 1996); the Minimal Trees Hypothesis (Vainikka and Young-Scholten 1994; 1996a; 1996b; 1998); the Valueless Features Hypothesis (Eubank 1993/1994; 1994; 1996). See Bong (2005) for a further detailed discussion.

²⁴ The Partial UG availability view has appeared in various guises in a number of studies: see Coppieters (1987); Bley-Vroman et al (1988), Tsimpli and Roussou (1991), Sorace (1993), Wakabayashi (1997), Hawkins and Chan (1997) among others. Some representative studies are the Functional Module Inaccessibility hypothesis (Smith and Tsimpli 1995); Failed Functional Features Hypothesis (Hawkins and Chan 1997); the Weak UG hypothesis (Clahsen and Hong 1995); the Local Impairment Hypothesis (Beck 1996; 1998a; 1998b)

²⁵ See Krashen (1985), or Birdsong (1999) for discussions about the relationship between L2 acquisition and the critical period hypothesis; and see among others Lenneberg (1967) for discussions of a critical period of L1 acquisition.

parameter-setting model, require improvement. It can be done by both a thorough contrastive linguistic analysis of the two languages, L1 and L2, and elaborated empirical L2 acquisition studies. Nevertheless, a more explicit linguistic analysis of parametric differences that may lead to more specific and principled predictions about success and failure in L2 acquisition is not a sufficient condition, but a necessary condition for L2 acquisition studies. It contributes not only to intensify the advancement of linguistic theory, but also to spur on the improvement in formulating L2 acquisition theories. Therefore, L2 acquisition research should not neglect specified contrastive analyses of parametric differences between L1 and L2.

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