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The (nonvacuous) semantics of TE-linkage in Japanese☆

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Abstract

Japanese TE-linkage, a translational equivalent of English *and*-linkage, is compatible with diverse semantic relations. Whenever such a relation is understood, however, it is always inferable solely from the conjuncts themselves. Moreover, these relations are cancellable and thus can be regarded as conversational implicatures. Most researchers, therefore, have considered TE-linkage to be primarily a syntactic device that in itself conveys little semantic information: the semantic relations associated with TE-linked sentences are worked out from the meanings of the conjuncts alone. The fact that some 'implicated' meanings must be regarded as properties of TE-linkage, and thus should properly be described in its semantics, challenges the conventional dichotomy of semantics and pragmatics. I will argue that TE-linkage indeed has its own inherent meanings, and demonstrate that these meanings cannot be stated in terms of traditional semantic relations but can only be understood in cognitive terms.

1. Introduction

Since the work of Grice (1975), it has been widely accepted that there are two types of meaning for any given utterance: what is asserted and what is implicated. Although both assertion and implication are properties of utterances, it is commonly understood that the first type of meaning (asserted) is the subject matter of semantics proper (i.e. a property of the sentence), while the second (implicated) should be accounted for by pragmatics.[1] For example, one automatically perceives a TEMPORAL

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[1] This is a rather simplistic view. In fact, the alternative view that pragmatic inferences are necessary even for determining the propositional content has been gaining ground in recent years (Kempson, 1986; Sperber and Wilson, 1986; Levinson, 1987; Carston, 1988; Smith and Smith, 1988, inter alia). However, the controversy is not directly relevant to the purpose of the present article, and accordingly I do not discuss this issue here.

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SEQUENCE relation (as in the *and-then reading*) when one hears *They had a baby and got married* (Wilson, 1975: 151). As Horn (1985: 146–147) points out, however, a TEMPORAL SEQUENCE relation is present even when these two clauses are in mere parataxis. Rather than attributing the TEMPORAL SEQUENCE relation to the meaning of *and* itself, therefore, researchers appeal to certain auxiliary theories, such as the iconicity between clause order and intended temporal order (Haiman, 1980) and the Gricean maxim of manner that states, 'Be orderly'.

Japanese TE, like English *and*, can convey a diverse range of semantic relations – e.g. TEMPORAL SEQUENCE, CAUSE–EFFECT, MEANS–END, CONTRASTIVE, CONCESSION, CONDITIONAL. Whenever such a relation is understood, however, it is always inferable solely from the conjuncts themselves. Moreover, these relations are cancellable and thus can be regarded as conversational implicatures. Most researchers, therefore, have considered TE-linkage to be primarily a syntactic device that in itself conveys little semantic information: the semantic relations associated with TE-linked sentences are worked out from the meanings of the conjuncts alone (Alfonso, 1966; Morita, 1980; Teramura, 1981; Endo, 1982; Himeno, 1984; Ogoshi, 1988; inter alia). Let us call this approach the IMPLICATURE-ONLY REDUCTIONIST ANALYSIS.[2]

In this article I will argue that the implicature-only reductionist analysis is untenable for the following reason. Although all semantic relations associated with TE-linkage can be inferred from the conjuncts alone, the contrary does not hold: not all semantic relations that can be implicated by two paratactic clauses are possible when the clauses are linked by TE. For example, if the clauses equivalent to *I sat down* and *Joan came into the room* are presented paratactically in Japanese, the interpreter naturally reads in a TEMPORAL SEQUENCE relation, just as in English. This merely temporal relation, however, is not an available reading when the clauses are linked by TE. That is, among the relations potentially implicated by two co-present clauses, some are filtered out by TE-linkage. Therefore, TE-linkage cannot be a purely syntactic device; is must have some meaning that excludes the reading TEMPORAL SEQUENCE from the set of possible interpretations in the case of this example.

The fact that some 'implicated' meanings must be regarded as properties of TE-linkage, and thus should properly be described in its semantics, challenges the conventional dichotomy of semantics and pragmatics. I will argue that TE-linkage indeed has its own inherent meanings, and demonstrate that these meanings cannot be stated in terms of traditional semantic relations but can only be understood in cognitive terms.

The organization of the article is as follows. Section 2 lays out the morphological characteristics of TE AND the conventional taxonomy of TE-linkage. Section 3 explains the notion of meaning which will be utilized in this study. Section 4 exam-

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[2] The analyses advocated by these researchers are not formulated in terms of the Gricean theory of implicature. I nonetheless categorize them as falling under the implicature-only reductionist analysis because their primary stance is in principle to attribute the meanings of TE-linkage to the meanings of conjuncts. For example, Morita (1980: 313) notes that "TE-linkage hardly ever conjoins clauses in a logical sequence or a temporal sequence; its meanings vary according to the meanings of the conjuncts" (translation mine).

ines TE-linkage and the TEMPORAL SEQUENCE relation in detail, and demonstrates that TE-linkage is incompatible with an incidental TEMPORAL SEQUENCE (i.e. pure TEMPORAL SEQUENCE proper). Section 5 is devoted to cases where the second conjunct refers to a human action. Section 6 discusses ADDITIVE and CONTRASTIVE relations when expressed with TE-linkage. Section 7 addresses certain theoretical implications of the findings. The conclusion follows in section 8.

2. Connective suffix TE

2.1. Morphophonemics

TE is suffixed to the stem of a 'verbal' (i.e. a verb or adjective), and marks the verbal and its preceding grammatical dependents as part of a complex construction. Traditional Japanese grammar does not recognize the resultant 'verbal + TE' as a unit; in non-traditional paradigms, on the other hand, 'verbal + TE' has been variously referred to as a GERUND (Bloch, 1946; Martin, 1975), GERUNDIVE (Kuno, 1973), PAST PARTICIPLE (Teramura, 1969), or TE-FORM (most textbooks of Japanese). From a crosslinguistic perspective, TE-linkage falls under the broader category of clause-chaining; the 'verbal + TE' is similar to the converb of numerous central Asian languages.[3] Although 'verbal + TE' exhibits some similarities with the gerund of Indo-European and other languages, it cannot in principle function as a nominal, and indeed in some uses TE functions more like the English conjunction *and*. In this article, accordingly, I adhere to the traditional and noncommittal analysis of TE as simply a connective suffix.[4]

As with the past-tense/perfective suffix *-ta*, TE participates in a number of assimilatory morphophonemic processes that respond to the final consonant of a consonant-final verb stem: when the verb stem ends in a voiced obstruent, TE is voiced, e.g. *nug-* 'take off' + TE > *nui-de*, as in (1a) below. The copula + TE is realized as *de*. These morphophonemic details are relevant in this study only insofar as they may help the reader to recognize the presence of TE IN any given example.

Although TE-linked sentences are frequently translated into English with a present participle, as shown in (1), TE-linkage is significantly different both from free adjuncts, e.g. *Inflating her lungs, Mary screamed*, and from absolutes, e.g. *The coach being crowded, Fred had to stand* (both from Kortmann, 1991: 5), in that TE-linkage is iterable, as shown in (1c).

(1a) jon wa [uwagi o **nuide],** [hangaa ni kaketa].
TOP jacket ACC **take-off-TE** hanger LOC hung
'John, TAKING OFF his jacket, hung it on a hanger.'
(Kuno, 1973: 200; transcription modified)

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[3] For example, the 'gerund' of Archi, a Northeast Caucasian language, exhibits similar characteristics to those of TE-linkage (cf. Kibrik, 1988).

[4] For the traditional analysis of the 'verbal + TE' sequence, see Shibatani (1990: 227–228; 233–235).

(1b) jon. wa [terebi o **mite**] [benkyooshita].
TOP TV ACC **watch-TE** studied
'John studied, WATCHING YV.'
'HAVING watched TV, John studied.'
(Harasawa, 1994: 182; slightly modified)

(1c) [hi ni **kazashite**] [mizu o **joohatsu-sasete**] [futatabi omosa o
flame LOC **hold-up-TE** water ACC **evaporate-TE** again weight ACC
hakaru].
measure
'By HOLDING (it) over the flame, evaporate the water and weigh (it) again.'

This syntactic property of iterability is another reason why TE should be treated as a connective suffix rather than as an element forming a gerund or participle. Semantically and pragmatically, however, TE-linkage exhibits many similarities with free adjuncts and absolutes in English.

2.2. *Conventional categorization of TE-linkage*

Traditionally, TE-linkage has been divided into three categories according to the function of TE: (i) as a nonproductive derivational suffix, as in (2a); (ii) as a linker connecting a main verb with a so-called auxiliary to form a complex predicate, as in (2b); and (iii) as a linker connecting two phrases or clauses, as in (2c).

(2a) myoonichi **aratamete** ukagaimasu.
tomorrow **on another occasion (= renovate-TE)** visit-NPST(POL)
'I'll visit (you) again tomorrow.'

(2b) otooto wa ima hon o **yonde** iru.
brother TOP now book ACC **read-TE** be-NPST
'(My) brother is reading a book now.'

(2c) [mina kawaki to nemuke ni **taete**] [same no oyogu
everyone thirst and sleepiness DAT **endure-TE** shark GEN swim
ara-umi o hyooryuu-shita].
rough-sea ACC drifted
'Enduring thirst and sleeplessness, they drifted on the rough seas where sharks (sometimes) swam.'

In the first category, TE functions as a derivational suffix, forming an adverb from a verb. Morphologically, *aratamete* 'on another occasion' in (2a) could be analyzed as the verb *aratame-* 'renovate' + TE. However, *aratamete* in this usage does not have any valence of its own, i.e., it lacks a subject and object. In general, in this derivational category verbs lose part of their verbal nature when TE is attached. Furthermore, the meaning of the derived adverbial is not always predictable from the meaning of the base verb, and only certain verbs can form such an adverbial.[5] Forms

[5] Other examples of this type are: *shii-* 'force' + TE > *shiite* 'boldly/dare (do something)', *hatas-* 'accomplish' + TE > *hatashite* 'really', *shitagaw-* 'follow' + TE > *shitagatte* 'therefore'.

like *aratamete* must therefore be listed as such in the lexicon. (If *aratamete* were to take overt or covert arguments, on the other hand, it would belong to the second or third category.) Because the derivational process associated with TE in this function is non-productive and its semantic import is irregular, and in particular because TE does not function here as a true connective, this first category will not be considered further in the present study.

In the second category, exemplified by (2b), the verb preceding TE is semantically the main predicate of the clause, and the verb or adjective that follows TE is a so-called auxiliary.[6] For example, 'verb-TE *i-*' in (2b) is the grammatical means for expressing the imperfective or perfect aspect, with the choice normally depending on the *Aktionsart* of the first verb. The semantic relations between the linked constituents in this second category are relatively fixed compared with the third category, and are in large part determined by the second constituent. Although TE does function here as a connective suffix, this category too will be excluded from the present investigation.

The semantic relations between the linked constituents in the third category, on the other hand, are so diverse that no single relation can be considered central. In (2c), the first clause holds a CIRCUMSTANCE relation to the second; however, as shown in (3)–(9), many other relations can also be expressed by TE-linked constituents, e.g. ADDITIVE, TEMPORAL SEQUENCE, CAUSE–EFFECT, MEANS–END, CONTRASTIVE, CONCESSION, and CONDITIONAL.[7] (Note that TEMPORAL SEQUENCE is included here only provisionally; later in this article it will be shown that the pure TEMPORAL SEQUENCE relation proper is in fact incompatible with TE-linkage.)

(3) ADDITIVE
kono uchuu no soodai-na sungeki wa [**SETSUNAKUTE**] [shimpiteki da].
this universe GEN grand drama TOP be-touching-TE mysterious COP-NPST
'This grand drama of the universe [i.e. an eclipse] is touching AND mysterious.'

(4) TEMPORAL SEQUENCE
[furasuko ni kitai o **irete**] [futatabi omosa o hakaru].
flask LOC gas ACC **put-TE** again weight ACC measure
'Put the gas into the flask AND weigh (it) again.'

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[6] There are ten verbs that can serve as the auxiliary in this construction, e.g. *ar-* 'be located', *k-* 'come', *ik-* 'go', *shimaw-* 'put into an appropriate place', *moraw-* 'receive'. In classical Transformational Grammar treatments (e.g. Smith, 1970; Nakau, 1973; M. Inoue, 1974), as well as in many current syntactic theories (e.g. McCawley and Momoi, 1986; Shibatani, 1987; Lee, 1989; Sells, 1990; Matsumoto, 1990), the second verb is considered to be the main verb which takes a sentential or VP complement.

[7] Minami (1974) categorizes Japanese connectives into three groups based on various co-occurrence restrictions: (A type) *nagara, tsutsu* 'while doing'; (B type) *node* 'because', *temo* 'although, even though', *to* 'and'; (C type) *ga* 'and, but', *kara* 'because', *keredo* 'but', *shi* 'and'. According to Minami, subtypes of TE-appear in all three categories.

(5) CAUSE–EFFECT
[tomodachi o **ijimete**] [sensee ni shikarareta].
friend ACC **bother-TE** teacher DAT was-scolded
'(I) was scolded by the teacher BECAUSE (I) bothered (my) friend.'
(Endo, 1982)

(6) MEANS–END
[hi ni **kazashite**] [mizu o joohatsu-saseru].
flame LOC **hold-up-TE** water ACC evaporate
'BY HOLDING (it) over the flame, evaporate the water.'

(7) CONTRASTIVE
[maki wa **gookaku shite**] [hiro wa fugookaku datta].
TOP pass-**TE** NOM disqualification COP-PST
'Maki passed (the exam), BUT Hiro was disqualified.'

(8) CONCESSION
kare wa [sono koto o **shitte-ite**] [iwanai].
he TOP that matter ACC **know-TE** say-NEG-NPST
'ALTHOUGH he knows the subject matter, he won't say it.'
(Morita, 1980: 318)

(9) CONDITIONAL
[zenbu **tabete**] 20-doru desu.
all **eat-te** $20 COP-NPST(POL)
'If (you) eat everything, (it) is $20.'

It is largely because of this diversity of semantic relations that mansearchers advocate what I call the implicature-only reductionist analysis of TE-linkage.

3. Meaning of connectives

Most, if not all, linguistic expressions are semantically underspecified, but potential ambiguities rarely emerge if the expression is embedded in a larger context. If a word appears in a sentence and the sentence is uttered/written in discourse, the word and the intrasentential, intersentential, and/or extrasentential context contribute jointly to the final interpretation, eliminating most semantic ambiguity.

As shown in the above examples, TE-linkage exhibits an extreme degree of semantic unspecificness, and probably for this very reason is particularly common in actual usage[8] – without causing problems in communication. This leads to questions about

[8] On the basis of a corpus of 3,330 multi-predicate sentences sampled from various types of texts, Saeki (1975: 81) reports a total of 26 different lexical connectives (1,047 tokens altogether), of which TE holds the foremost rank: it occurs 512 times, while the second most frequent connective, *ga* 'and/but', occurs only 141 times. According to K. Inoue (1983: 128–130), TE appears most frequently in spontaneous speech (34.5% of all connectives) and in informal writing (27%). In formal writing such as newspaper editorials, TE ranks second (17.2%) after *ren'yoo* linkage (36.9%). The actual occurrence of TE is much more frequent than the numbers suggest because these data do not include cases in which the second predicate is a so-called auxiliary.

how much of the meaning is attributable to the TE-linkage itself, how much to the properties of the conjuncts, and how much to the interpreter's extralinguistic knowledge of the described situations. Before proceeding, let me clarify the notion of meaning to be used in this study.

3.1. Independent and dependent semantic aspects

Following the methodology of Reichling, Dik (1968: 257–258) divides linguistic information into SEMANTIC INFORMATION and GRAMMATICAL (i.e. syntactic/morphological) INFORMATION. All expressions have grammatical information associated with them by virtue of being usable in larger syntagms.

Semantic information is further divided into INDEPENDENT and DEPENDENT SEMANTIC ASPECTS. The independent semantic aspects are immediately obtainable from the expression without further linguistic context. By contrast, the dependent semantic aspects of the expression can be obtained only within a larger whole of which the expression is a part. For example, speakers of English know the semantics of *table* with no further context, whereas they do need some context, e.g. *table*___, to identify the semantics of the plural suffix *-s*; plurality, as a relational notion, cannot be defined without essential reference to some noun. Thus *table* is said to have an independent semantic aspect of its own, whereas *-s* has only a dependent one.

Henceforth I will use the expression *meaning of the connective* X to refer to X's DEPENDENT semantic aspects. Connectives have grammatical information associated with them; they also indicate certain relationships between the semantic information conveyed by the conjuncts. Crucially, however, connectives do not carry independent semantic aspects of their own. Even with a SEMANTICALLY LOADED connective, such as *before*, it is necessary to mention the clauses which *before* links in order to describe the semantic information it conveys – namely, that the occurrence of the situation described by the clause to which *before* is attached must temporally follow the occurrence of the situation described by the other clause.

Viewed in this light, the implicature-only reductionist analysis is justified only if *meaning* is restricted to independent semantic aspects, since indeed no semantic description of TE is possible without recourse to the larger constituent of which TE is a part. But advocates of this analysis appear to contend that TE lacks even dependent semantic aspects: they contend that the contingent semantic relations associated with TE-linkage are so diverse that the interpreter only INFERS the specific sense intended by the speaker. In order to discuss this issue further, it is important to clarify the distinction between what is asserted (including what Grice calls CONVENTIONAL implicatures) and what is CONVERSATIONALLY implicated.

3.2. Implicature

One of the basic requirements for understanding discourse is recognizing how each clause coheres with its predecessor. Our linguistic and pragmatic competence enables us to read in conceivable relation(s) even when two clauses are simply juxtaposed in parataxis (recall *They had a baby and got married*, in section 1). Thus

certain aspects of interpretation, e.g. TEMPORAL SEQUENCE with *and*-linkage, are not part of the conventional force of the uttered sentence, but rather what Grice (1975) has named CONVERSATIONAL IMPLICATURE.

In the Gricean theory of linguistic pragmatics, the CAUSE relation observed between conjuncts linked by *because* and the PRECEDENCE relation between conjuncts linked by *before* are considered CONVENTIONAL (not conversational) IMPLICATURE. Conventional implicature involves the NON-TRUTH CONDITIONAL LEXICAL MEANING of some element and is attached to a particular expression by convention, not by pragmatic principles. For example, the conjunctions *and* and *but* are truth-conditionally equivalent: the 'additional' meaning of contrast that *but* conveys is imparted by conventional implicature (Grice, 1961). As Levinson (1983: 128) points out, however, "conventional implicature is not a very interesting concept – it is rather an admission of the failure of truth-conditional semantics to capture all the conventional content or meaning of natural language words and expressions". In this study, conventional implicatures will be considered as falling under the heading of asserted meaning. *Implicature* will thus be restricted to conversational implicature.

The difference in meaning between *and*-linkage (implicated) and *because*- or *before*-linkage (asserted) emerges sharply in the following pairs.

(10a) One plus one is two, and I'm sad.
(10b) Because one plus one is two, I'm sad.

(11a) John eats apples, and six men can fit in the back seat of a Ford.
(11b) John eats apples before six men can fit in the back seat of a Ford.

If the (b)-sentences were uttered, the interpreter would at least try to make sense out of them in such a way that a CAUSE (10b), or a PRECEDENCE (11b), holds between the conjuncts; the connectives *because* and *before* force these interpretations. Success or failure in interpreting anomalous sentences like (10b) and (11b) will depend on one's deductive abilities.[9] One might interpret (11b), for example, as describing John dieting so that he will be thinner and take up less space.

With the (a)-sentences, on the other hand, the word *and* does not demand some particular interpretation. Indeed, the most likely interpretation of and here is simply as a signal that the speaker has something more to say, i.e., intends to keep the floor. Halliday and Hasan (1976: 233), who draw a strict line between structural and cohesive (semantic) relationships, note that "the 'and' relation is felt to be structural and not cohesive, at least by mature speakers; this is why we feel a little uncomfortable at finding a sentence in written English beginning with *And*, and why we tend not to consider that a child's composition having *and* as its dominant sentence linker can really be said to form a cohesive whole". They contend that *and* has a syntactic function, but that it provides little information about the semantic relation between

[9] Lakoff (1971) claims that this statement also holds for the interpretation of coordination constructions (including *and*-linkage).

the conjuncts. In this respect, TE-linkage is quite similar to *and*-linkage in the sense that TE does not specify which semantic relation is intended by the speaker.

3.3. Cancellability test

Grice (1975) proposes several diagnostic tests for conversational implicature, of which the so-called CANCELLABILITY TEST is the most prominent. Conversational implicatures can be cancelled without yielding contradiction, as with *and* in (12a). By contrast, if something is asserted, denying (part of) it will result in contradiction, as with *before* in (12b).

(12a) They had a baby and got married, but not necessarily in that order.
(12b) #They had a baby before they got married, but not necessarily in that order.
(# indicates that the sentence is deviant.)

Similarly, the CAUSE relation associated with a TE-construction is cancellable and hence can be taken as a conversational implicature.

(13) kaze o **hiite** atama ga itai. atama ga itai no wa itsumo
cold ACC **catch-TE** head NOM ache head NOM ache NMLZ TOP always
no koto dakedo.
GEN thing though
'(I) caught a cold, and (my) head aches. I always have a headache, though.'

If only the first sentence were supplied, it would naturally be implicated that the cold is the CAUSE of the speaker's headache. Here, however, this implicature is cancelled by the second sentence, indicating that the speaker always has a headache anyway. In a typical scenario the speaker, after uttering the first sentence, realizes the potential implicature and cancels it explicitly.

The TEMPORAL SEQUENCE relation is likewise cancellable, and hence it, too, can be regarded as a conversational implicature.

(14) maki wa oosaka e **itte** hiro wa oosaka kara kaette-kuru. hiro ga
TOP Osaka ALL **go-TE** TOP ABL come-back NOM
kaette-kuru no ga saki dakedo.
COME-BACK NMLZ NOM first though
'Maki will go to Osaka, and Hiro will come back from Osaka. Hiro's return comes first, though.'

It might appear, therefore, that the semantic relations of CAUSE and TEMPORAL SEQUENCE are not part of the conventional meaning of TE-linkage at all, but are derived by means of pragmatic principles.

4. TEMPORAL SEQUENCE and TE-linkage

As remarked in section 1, the implicature-only reductionist analysis is challenged by the fact that not all semantic relations potentially implicated by parataxis can be expressed by TE-linkage – i.e., TE is NOT absolutely transparent. Some conceivable relations are filtered out when constituents are linked by TE, and TE-linkage has many arbitrary (and idiomatic) constraints, both on possible semantic relations and on the semantic nature of the conjuncts, that cannot be attributed to any pragmatic principles. In other words, TE-linkage restricts the universe of possible semantic relations implicated by the conjuncts. This and subsequent sections elaborate on such constraints imposed by TE-linkage and demonstrate that TE-linkage indeed has a conventional meaning, but one that can only be described in terms of human cognition, not in conventional semantic terms.

4.1. TEMPORAL SEQUENCE ***relation***

It is frequently claimed in the literature that one of the major uses of TE-linkage is to express TEMPORAL SEQUENCE or CONSECUTIVENESS (Matsuo, 1936; NLRI, 1951; Negishi, 1970; Kuno, 1973; Takahashi, 1975; Morita, 1980; Endo, 1982; Konoshima, 1983; Narita, 1983; Hamada, 1985; Matsuda, 1985). In this section, it is argued to the contrary that TEMPORAL SEQUENCE per se cannot be expressed by TE-linkage.

Given appropriate pairs of clauses, TEMPORAL SEQUENCE can always be implicated when two clauses are in parataxis, as in (15).

(15a) maki ga tachiagatta. mado ga aita.
NOM stood-up window NOM opened
'Maki stood up. The window opened.'

(15b) maki ga kaijoo ni tsuita. kooen ga hajimatta.
NOM meeting-place LOC arrived lecture NOM began
'Maki arrived at the meeting place. The lecture began.'

However, the same TEMPORAL SEQUENCE cannot be implicated when such pairs of clauses are linked by TE, as illustrated in (16).[10]

(16a) #maki ga **tachiagatte** mado ga aita.
NOM **stand-up-TE** window NOM opened
'Maki stood up, and the window opened.'

(16b) #kodomo ga kaijoo ni **tsuite** kooen ga hajimatta.
child NOM meeting-place LOC **arrive-TE** lecture NOM began
'A child arrived at the meeting place, and the lecture began.'

[10] In order to express TEMPORAL SEQUENCE with (16), an adverbial such as *sugu ni* 'soon' or *5-fun-go ni* '5 minutes later' must be inserted after the TE-predicate. That is, TE by itself does not implicate TEMPORAL SEQUENCE.

Significantly, there would be no unnaturalness here if the connective *to* (with a necessary alteration to the inflection of the preceding predicate) were used instead of TE, as shown in (17).

(17a) maki ga tachiagaru **to** mado ga aita.
'Maki stood up, and the window opened.'
(17b) Kodomo ga kaijoo ni tsuku **to** kooen ga hajimatta.
'A child arrived at the meeting place, and the lecture began.'

The sentences in (17) now permit TEMPORAL SEQUENCE interpretations. There is thus nothing INHERENTLY anomalous about conjoining the two clauses in each pair in (16) – i.e., the anomaly is not purely pragmatic, as it would be in *Joan ate sushi, and the tower collapsed.*

Observe that a small alteration in (16a–b) enhances the acceptability (18a–b):

(18a) maki ga oogoe o **dashite** mado ga aita.
NOM loud-voice ACC **emit-TE** window NOM opened
'Maki screamed, and the window opened.'
(18b) kooshi ga kaijoo ni **tsuite** kooen ga hajimatta.
lecturer NOM meeting-place LOC **arrive-TE** lecture NOM began
'The lecturer arrived at the meeting place, and the lecture began.'

Changing *tachiagar-* 'stand up' in (16a) to *oogoe o das-* 'scream' in (18a) improves the naturalness somewhat because an extremely loud sound can, in principle, cause windows to open. In (18b), replacement of the subject *kodomo* with *kooshi* 'lecturer' makes the sentence perfectly natural because it is precisely the arrival of the lecturer that enables the lecture to begin. The key in both cases is the notion of causation. If native speakers of Japanese are forced to interpret (16), they read in some sort of CAUSE-relation above and beyond mere TEMPORAL SEQUENCE – e.g., Maki has the magical power to open windows by standing up.

If TE-linkage were in fact able to express a TEMPORAL SEQUENCE relation, then all naturally occurring event sequences should be compatible with TE-linkage. However, as shown above, this is not the case. From the anomalies observed in such sentences as (16), I therefore conclude that a mere incidental sequence of events – i.e. pure TEMPORAL SEQUENCE proper – cannot be expressed by the use of TE-linkage. The question, then, becomes 'What makes sequences of situations nonincidental?' As suggested above, the notion of causation is one factor that plays a central role.

It has been claimed that TE links two constituents more TIGHTLY than does *to* (Kuno, 1973; Matsuda, 1985). Of course, many interpretations could be given to the word *tightly*, and the authors just cited in fact have several senses in mind. But if we choose to interpret it as the involvement of some semantic notion of causation, this characterization provides a partial account of the inappropriateness of TE in the sentences in (16), in which the pairs of clauses fail to show any obvious CAUSE relations. The next section will discuss what is generally meant by the term CAUSATION, and how these considerations contribute to our understanding of TE-linkage.

4.2. Causation

Humans do not perceive the physical world as a constantly changing stream of disconnected and arbitrary happenings, but rather as situations occurring in organized patterns over specific spans of time (Minsky, 1975; Schank and Abelson, 1977; Bullock et al., 1982; Shultz, 1982). Bullock et al. (1982: 209) claim that the fundamental basis on which humans assign boundaries to discrete situations is constituted by our tendency to perceive or infer CAUSE–EFFECT relations. In the act of cutting bread, for example, we regard the parting of the bread as being caused by the knife's action, rather than taking the scene as involving two simultaneous but disconnected sequences of knife movements and bread movements. As Bullock et al. note, "First, by imposing a causal connection, we efficiently collapse a series of temporally successive motions into a single event. Second, by this bracketing into causal events, we not only separate meaningful, coherent patterns from all that goes on around us, but also impart structure to the world. When we attribute the parting of the bread to the knife's action, we relate actions to results, transformations to outcomes, and thus construct our own physical reality" (ibid.: 210).

In analyzing TE-linkage, we need to keep in mind that the semantic relation CAUSE is fundamentally interpretive: it signifies the speaker's interpretation of a succession of events and, in turn, the hearer's confirmation of such an interpretation. Humans BRACKET sequences of discrete situations in certain ways, which reflect our innate perception of physical and psychological reality. THE FUNDAMENTAL USE OF TE-LINKAGE IS TO EXPRESS SUCH BRACKETED SITUATIONS.

4.3. Abductive interpretation of reality

Comparing the usages of the connectives TE and *to*, Hamada (1985: 177) proposes an interesting generalization regarding TE-linkage. Although her formulation is rather vague, it seems possible to interpret it as follows: while *to* is utilized when the speaker reports two successive situations from a mere observer's point of view, TE is utilized when the speaker has internalized ('digested', as Hamada puts it) the situations. In this section I will attempt to elaborate on this generalization, which captures native speaker's intuitions about TE-linkage.

TE-linkage indicates that the speaker has ABDUCTIVELY determined the principle which governs the two situations, and expresses them in the light of his/her own interpretation.[11] The abductive mode of inference differs significantly from traditional deduction and induction. Deduction applies a principle (law) to an observed case and predicts a result, e.g. (19); induction proceeds from observed cases to establish a principle, e.g. (20).

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[11] The notion of ABDUCTION, originally proposed by Charles S. Peirce, was introduced into linguistic circles by Henning Andersen (1973).

(19) Principle: All linguists are sarcastic.
Observation: Ali's wife is a linguist.
Inference: Therefore, she must be sarcastic.

(20) Observation: Beth is a linguist and sarcastic.
Observation: Chris is a linguist and sarcastic.
Observation: Doris is a linguist and sarcastic.
•
•
•
Principle: Therefore, all/most linguists are sarcastic.

By contrast, "abduction proceeds from an observed result, invokes a law, and infers that something may be the case" (Andersen, 1973: 775). The reasoning in (21), for example, involves an abductive inference.

(21) Observation: This article is nasty.
Invoked Principle: All/Most linguists are nasty.
Inference: Therefore, this article might well have been written by a linguist.

Note that a given situation (result) can in general evoke many different principles. One might, for example, have invoked the principle that people usually become nasty when they are hungry; then the inference would be that the writer might have been hungry when s/he wrote the article.

The invoked principle might not be something that is already known, but could be something that is conjectured on the spot. One may infer the principle from which the observation makes sense. The crucial step lying at the heart of all abductive reasoning is the choice of some PARTICULAR principle, a choice which is inevitably subjective and context-dependent.

With TE-linkage, the speaker observes two situations which evoke some principle. S/he then conjoins the corresponding clauses with TE, assuming that the same principle will be evoked in the addressee's mind. For example, in (22), the speaker has observed a bad economic situation and an increase in the unemployment rate; these two states of affairs have evoked in his/her mind the principle that bad economic situations cause the unemployment rate to increase; the speaker now presents the two situations with TE-linkage, assuming that the addressee will interpret the clauses as standing in a CAUSE relation to one another.

(22) keeki ga **warukute** shitsugyooritsu ga agatta.
economic-situation NOM **be-bad-TE** unemployment-rate NOM increased
'Because the economic situation was bad, the unemployment rate increased.'

Had the speaker failed to recognize a CAUSE relation between the bad economic situation and the increase in the unemployment rate, s/he would simply report the co-occurrence as such, using not TE but the conjunction *to*, as shown in (23).

(23) keeki ga warui **to** shitsugyooritsu ga agatta.
be-bad CONJ
'When the economic situation was bad, the unemployment rate increased.'

5. Human actions

In the previous section, one particular type of nonincidental event sequence was discussed, viz. when the speaker conceives a CAUSE relation by abductive reasoning. Causal sequences are not the only type of nonincidental event sequences, however. The requirement of a causal link between the situations need not apply when the same subject is shared by both clauses and bears the semantic role of AGENT vis-à-vis both predicates. For example, in (24), where *jon* is the agentive subject of both *shukudai o s-* 'do homework' and *ofuro ni hair-* 'take a bath', the sentence is natural even though there is no CAUSE relation.

(24) jon wa shukudai o **shite** ofuro ni haitta.
John TOP homework ACC **do-TE** took a bath
'John did his homework and took a bath.'

The linked clauses in (24) are normally interpreted as having a TEMPORAL SEQUENCE relation. Crucially, however, we do not consider this to be an INCIDENTAL temporal sequence. The temporal alignment is nonincidental because the two actions have both been brought about through the INTENTION of the same individual. Indeed, the very fact that the same human being is involved (agentively) in both clauses sets up an overwhelming expectation in the hearer that the two actions will be intentionally related in some way. The following subsections explore the licensing of TE-linkage through the notion of HUMAN INTENTION.

5.1. *Perceived intention*

We have intuitive ideas about our own actions as directed toward achieving various goals or bringing about various states of affairs, and under normal circumstances we perceive other people's actions in the same way. In other words, we perceive the other's actions by analogical reasoning from our own actions. This is possible because humans have an innate awareness of the similarities between themselves and others (Miller and Johnson-Laird, 1976: 101–102). Human infants display a special interest in the human face and the human voice. Indeed, every species has some mechanism for recognizing its own members, for obvious biological reasons (ibid.).

Intentions are 'pro-attitudes', or conduct-controllers (Bratman, 1987: 7), and in concert with belief they move us to act. Human intentional actions, both the speaker's and everyone else's, are (and are perceived as) PLAN-BASED and GOAL-ORIENTED. Human beings typically plan to perform their actions in a certain sequence, as in (24) above, and intentions play a motivational role in such planning. A particularly salient example of goal-orientedness is actions which involve a MEANS–END

relation, e.g. (25); with such sentences, the intention behind performing the first act is to achieve the second act.

(25a) haha ni **denwa-shite** okane o karita.
mother LOC **telephone-TE** money ACC borrowed
'(I) called (my) mother and borrowed (some) money.'
(25b) renga o **katte** ie o tateta.
bricks ACC **buy-TE** house ACC built
'(I) bought bricks and built a house.'

These sentences show that when an event sequence is perceived as a succession of intentional acts of a single individual, the corresponding clauses can naturally be linked by TE. The reason is not difficult to see. Humans experience, and in turn describe, sequences of events that involve voluntary actions differently from event sequences that do not; we seldom consider a series of acts by a rational being to be random coincidence, but as something with some degree of intention (and rationale) behind it. This has immediate consequences at the more concrete level of syntax and semantics. If the conjuncts share an agentive subject, the TEMPORAL SEQUENCE relation indeed appears to be compatible with TE-linkage, but only because some degree of intention is automatically read into the sequence. It is the perceived intention, and not the TEMPORAL SEQUENCE proper, which licenses the use of TE-linkage.

5.2. *SIMULTANEOUS relation and TE-linkage*

Because TE-linkage involves a non-finite first clause, identification of the temporal alignment between the two denoted situations is an issue that deserves further discussion. Harasawa (1994: 182) contends that (26) is ambiguous: on his account, the two situations can be considered either in a SIMULTANEOUS or CONSECUTIVE (i.e. TEMPORAL SEQUENCE) relation.

(26) jon wa terebi o **mi-te** benkyoo-shita. (=(1b))
TOP TV ACC **watch-TE** studied
'John studied, watching TV.' (SIMULTANEOUS reading)
'Having watched TV, John studied.' (CONSECUTIVE reading).

Sentence (26) is indeed ambiguous, but not between SIMULTANEOUS and CONSECUTIVE readings as Harasawa claims. As will be demonstrated in a moment, the sentence cannot be used to express a SIMULTANEOUS relation proper, i.e. *John watched TV and studied simultaneously*, or *While watching TV, John studied.* Rather, the ambiguity is between a MEANS–END reading, *By watching TV, John studied*, and a TEMPORAL SEQUENCE reading, *John watched TV, and then studied.* (Note that the agentive subject *jon* is shared by both conjuncts, thereby making the TEMPORAL SEQUENCE reading possible.)

In fact, mere SIMULTANEITY, like mere TEMPORAL SEQUENCE, is one of the few semantic relations incompatible with TE-linkage. The key point is that a SIMULTANE-

ITY RELATION IS RECIPROCAL – i.e., if we ignore the focus shift, *John studied while watching TV* and *John watched TV while studying* depict exactly the same scene. Thus the possibility of exchanging two clauses is a good diagnostic for whether the sentence truly permits a SIMULTANEOUS reading. Consider (27), where the clauses of (26) are reversed.

(27) jon wa **benkyoo-shite** terebi o mita.
book TOP **study-TE** TV ACC watched
#'John watched TV, studying.'
'Having studied, John watched TV.'

Here only a TEMPORAL SEQUENCE reading is possible. SIMULTANEITY is excluded for (27), and hence (as argued) for (26) as well. Indeed, in (27) even a MEANS–END reading is impossible. The MEANS–END reading is factored out because one can study, say a foreign language, by watching TV, but watching TV by studying lacks any sensible interpretation.

Consider finally (28).

(28) #hon o **yonde-ite** basu ga kita.
book ACC **be-reading-TE** bus NOM came
'When (I) was reading a book, the bus came.' (Intended)

Unlike (27), in which TE-linkage is licensed by the shared agentive subject, sentence (28) is totally anomalous. Because the conjuncts have distinct subjects, no human intention to connect the two situations can be inferred. There is only abstract SIMULTANEITY, and that is insufficient to license TE-linkage.

These considerations lead us to the important conclusion that the expression of extrinsic, abstract temporal alignment per se – e.g. TEMPORAL SEQUENCE or SIMULTANEITY proper, divorced from human concerns – is not a component of the meaning of TE-linkage.[12]

5.3. Controllability constraint

Kuno (1973: 196–197) observes that in TE-linkage with identical subjects, both clauses must be either SELF-CONTROLLABLE (agentive) or NON-SELF-CONTROLLABLE (nonagentive) – the controllability constraint. In his view, violation of this constraint leads to anomalous sentences. In this section I will examine Kuno's examples and

[12] Pure abstract SIMULTANEITY is even more drastically incompatible with TE-linkage than is pure TEMPORAL SEQUENCE. For the latter, a perceived intention is sufficient to make the sentence acceptable in a TEMPORAL SEQUENCE reading, as shown above; whereas for the former, even when a perceived intention is present, e.g. watching TV and studying simultaneously, the sentence still cannot convey a SIMULTANEOUS relation. This may be a remnant of a historical change: TE was originally an inflectional form of the old auxiliary verb *tsu*, which marked perfective aspect (Yamada, 1954). Perfectivity of the TE-marked verb would lead easily and naturally to a TEMPORAL SEQUENCE relation between the two clauses, but not to a SIMULTANEOUS relation.

demonstrate how the analysis proposed in this article can account for the anomalies in his examples.

Kuno considers that (29a–c) are anomalous because of the violation of the controllability constraint, i.e., *jon* is the (nonagentive) patient/theme in the first clause but the agent in the second.[13]

(29a) jon wa asa **me o samashite** kao o aratta.
John TOP morning **wake-TE** face ACC washed
'John woke up in the morning and washed his face.'

(29b) jon wa marii ni guuzen **deatte** sono hanashi o shita.
TOP Mary LOC accidentally **run-into-TE** that talk ACC did
'John ran into Mary accidentally and talked about it (i.e. some matter or other).'

(29c) jon wa hikoojoo ni **tsuite** ie ni denwa shita.
TOP airport LOC **arrive-TE** home LOC telephone did
'John arrived at the airport and called home.'

When there is agreement in controllability, the sentences sound quite a bit more natural: in (30a,b) both clauses are controllable, and in (30c) both are noncontrollable. ((30a,c) are Kuno's examples, while (30b) is mine.)

(30a) jon wa asa **okite** kao o aratta.
TOP morning get-**up**-TE face ACC washed
'John got up in the morning and washed his face.'

(30b) jon wa marii ni **denwa-shite** sono hanashi o shita.
TOP LOC **telephone-TE** that talk ACC did
'John teleponed Mary and talked about it (some matter).'

(30c) jon wa hikoojoo ni **tsuite** nimotsu no kensa o uketa.
TOP airport LOC **arrive-TE** luggage GEN inspection ACC underwent
'John arrived at the airport and underwent the inspection of his luggage.'

As discussed in section 5.1, TE is appropriate in (30a,b) because the two events are related in a principled way, viz. via the perceived intention of the single individual. Sentence (30c), therefore, can readily be explained by the analysis proposed in this study.

Let us now compare the sentences in (29) and (31), all of which violate the controllability constraint. In all these examples the first clause is non-self-controllable, whereas the second is self-controllable. The sentences in (29) are indeed awkward; but those in (31) are perfectly natural.

[13] Kuno claims that the sentences in (29) are ungrammatical. While they are certainly awkward, it is overly pedantic to call them ungrammatical. Sentences that violate the controllability constraint are in fact not uncommon.

(31a) saifu o **nakushite** tomodachi ni okane o karita.
purse ACC **lose-TE** friend DAT money ACC borrowed
'(I) lost (my) purse and borrowed money from a friend.'
(31b) kaze o **hiite** yasumimashita.
cold ACC **catch-TE** took absence
'(I) caught a cold and took a day-off.'
(Minami, 1996: 122)
(31c) **furarete** yakezake o nonda.
jilt-PASS-TE drank out of desperation
'(I) got jilted and drank out of desperation.'

What, then, accounts for the difference in naturalness between (29) and (31)? I contend that the anomaly of (29) boils down to what does and does not constitute an acceptable REASON-explanation. In (31) the first clauses supply a normally acceptable reason for the action denoted by the corresponding second clause, whereas in (29) they fail to do so. In general, when the second conjunct indicates an action and the first conjunct indicates a non-action or an action with a distinct agent (i.e., the first situation is not controllable by the agent of the second clause), native speakers are inclined to consider the first conjunct a REASON, rather than a CAUSE in its ordinary sense. In the next section the differences between CAUSES and REASONS are discussed.

5.4. *Causes and reasons*

Prototypically, causation applies to the world of physical entities and natural laws, whereas reasons concern human beings and their intentions. On the other hand, it has often been argued that reasons are themselves causal in nature (cf. e.g. Davidson, 1980). Ordinary language sometimes employs a word corresponding to *cause, and* frequently a word corresponding to *because*, even where reasons and not causes are involved. Further, there are clear regularities obtaining between reasons and actions, regularities similar to those that lie at the heart of the CAUSE relation in the Humean conception of causation. Donnellan, however, argues that while appeal to such facts "may shift the burden of proof to the other side, it does little to establish that reason explanations are straightforward causal explanations. The word 'because' may have a different use in these circumstances, or it might only be a way of emphasizing, somewhat metaphorically, the 'compelling' nature of the reason" (1967: 86). He also argues that "while regularity is the core of the causal relation for Hume, it must be a regularity of a certain kind: an empirical regularity. Whether the connection between reasons and actions is merely empirical has been strongly questioned" (ibid.).

Donnellan points out the following differences between reasons and causes. First, the agent seems to have a privileged and self-sufficient position concerning the reasons (though not the causes) underlying his/her own actions. In the normal case, the agent need not appeal to evidence and empirical investigation to establish what the reasons are. Second, humans seem willing to accept a reason explanation without

demanding any generalization (to a larger class of analogous cases) of the relationship between the particular action and the particular reason. These two characteristics are foreign to causal explanation. Third, while causal explanation depends on the empirical and contingent nature of the causal connection, there is a more than contingent relation between reasons and actions. An action is performed because the actor desires the outcome of the action. To give a reason is to indicate, explicitly or implicitly, such wanting. However, wanting is nothing but a tendency to act;[14] to want to do something is to be prepared under certain circumstances to take the necessary steps.[15] If wanting is conceived as a tendency to action, then by that very token there is a LOGICAL (analytic) connection between wanting and action; thus it would be odd to count wanting as a cause of an action and thus to construe its relation to the action as merely contingent.[16]

From a linguistic point of view, it is apparent that when we describe or explain a situation involving a person, we make a distinction between those situations in which the person acts intentionally (i.e., the person is an agent) and those in which s/he has no control over what happens. Language provides a rich vocabulary for distinguishing the agentive and nonagentive roles of the person as a participant in the described situation (cf. Fillmore, 1968; Lyons, 1968, 1977; Talmy, 1976).

When we conceive or perceive a person as an agent, we expect his/her behavior to be a succession of rational, purposeful actions. For example, if someone with whom I am walking suddenly stops, I will automatically think that there is a reason for her action. If I find that she is looking at something, I will understand that she has stopped because she wanted to see that object. If the reason is not obvious, I will ask her what happened in her mind (asking for a reason explanation). If she does not

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[14] It is important here to distinguish between wanting (e.g. I *want to give you $5*) and wishing (e.g. *I want you to give me $5*).

[15] One might argue that there are some actions that a person may want to perform but would under no circumstances actually do, e.g. killing someone. However, if this is a genuine desire and not an idle wish, it must be supposed that the action is to some degree tempting to the person. In such a case, Donnellan argues, we will have to include a weakening of one's moral inhibitions as part of the set of circumstances under which one would be prepared to do the act.

[16] Hart and Honoré, who have investigated causation in judicial contexts, also point out the distinction between causes and reasons, They note "a voluntary human action intended to bring about what in fact happens, and in the manner in which it happens, has a special pace in causal inquiries ... when the question is how far back a cause shall be traced through a number of intervening causes, such a voluntary action very often is regarded both as a limit and also as still the cause even though other later abnormal occurrences are recognized as causes" (1959: 39). For example,

> "If unusual quantities of arsenic are found in a dead man's body, this is up to a point an explanation of his death and so the cause of it: but we usually press for a further and more satisfying explanation and may find that someone deliberately put arsenic in the victim's food. This is a fuller explanation in terms of human agency; and ... we speak of the poisoner's action as the cause of the death; though we do not withdraw the title of cause from the presence of arsenic in the body – this is now thought of as the 'mere way' in which the poisoner produced the effect. Once we have reached this point ... we have something which has a special *finality* at the level of common sense: for though we may look for and find an explanation of why the poisoner did what he did in terms of motives like greed or revenge, we do not regard his motive ... as the cause of the *death* ... We do not trace the cause *through* the deliberate act." (ibid.: 39–40, emphasis in original.)

explain and says 'Nothing', then I will think the reason was trivial and ignore it. However, if she keeps on stopping, I will then start to worry and will ask her if she is sick (asking for a causal explanation). If she still does not explain, I will think that she is bizarre and that my rational expectations do not work in her case.

These considerations are relevant to the semantics and pragmatics of TE-linkage. TE-linkage is used to express a nonincidental sequence of situations; and such sequences include (i) those in which humans normally perceive the first situation as a CAUSE of the second, (ii) those in which both situations involve an ACTION performed by the same individual, and (iii) those in which the first situation is to be regarded as the REASON for the second. These principles reflect human strategies of bracketing surrounding situations.

Let us now reconsider Kuno's examples (29). In all the sentences in (29), the first conjunct is a non-action, while the second is an action; furthermore, no obvious causation is involved. According to the analysis proposed above, then, the first conjunct can only be construed as the REASON for the action, i.e. as an instance of (iii); (i) and (ii) are excluded. The anomaly in (29) arises simply because the first conjunct does not provide an acceptable reason.

Consider the following conversations, which are English constructs similar to (29):

(32a) A: Why did you wash your face?
B: Because I woke up.
(31b) A: Why did you talk to Mary about it?
B: Because I accidentally ran into her.
(32c) A: Why did you call home?
B: Because I arrived at the airport.

While all three conversations sound somewhat strange to me, (32a) sounds the worst and (32c) the best, and the differences reflect the varying plausibility of the reasons presented in the three sequences. Interestingly, there seems to be a correlation between these judgments regarding acceptable reasoning and the grammaticality judgments of (29). I feel that (29c) is slightly better than the others, and that (29a) is the worst. (When the asserted reason is blatantly inappropriate, it can even create a comical effect, e.g. to answer the question *Why are you going to divorce? with Because we got married.*) On this view, if the first conjunct counts as an acceptable reason (explicitly or implicitly) for performing the action referred to by the second conjunct, a disagreement in controllability should not affect the acceptability of the sentence. The sentences in (31) confirm this prediction.

Kuno's controllability constraint, accordingly, cannot be upheld as a syntactic principle. Rather, the awkwardness of his examples is due to the conflict between the principles of interpretation found with TE-linkage, on the one hand, and the interpreter's standards regarding what can plausibly count as a reason, on the other.

6. ADDITIVE and CONTRAST relations

In this section I will discuss two more semantic relations which are frequently associated with TE-linkage, viz. ADDITIVE and CONTRASTIVE, and demonstrate that the analysis proposed in this article can account for the compatibility between these relations and TE-linkage. The ADDITIVE and CONTRASTIVE relations are significantly different from CAUSE and TEMPORAL SEQUENCE: the former pair can be atemporal, the latter pair cannot. In addition to the examples provided in (3) and (7) in section 2.2, the following exemplify the ADDITIVE and CONTRASTIVE relations.

(33) ADDITIVE relation
(kyonen wa hidoi toshi datta.) [jishin ga atte], [kaji ga
last year TOP terrible year was earthquake NOM **there-be-TE** fire NOM
atte], ...
there-be-TE
'(It was a terrible year last year.) There was an earthquake AND a fire ...'

(34) CONTRASTIVE relation
[minami no kuni wa **atsukute**], [kita no kuni wa suzushii].
south GEN country TOP **be-hot-TE** north GEN country TOP be-cool-NPST
'It's hot in southern countries, BUT-it's cool in northern countries.'
(Morita, 1980: 315)

In both (33) and (34) no CAUSE or REASON relation is inferable, and there is no human intention to connect two situations; yet the sentences are natural. What licenses TE-linkage in these cases is the fact that the collocated situations are not arbitrarily chosen by the speaker. Here, again, TE-linkage indicates the speaker's conceptualization of two aspects of the surrounding reality as being related in some principled way.

Van Dijk (1977: 41) points out that in order to make intelligible sense out of merely juxtaposed clauses, it is usually necessary to supply a context which specifies the 'when, where, or why' of the conjuncts. For example, in order to interpret *Mary knitted, and the fire was burning*, the interpreter needs to presuppose some proposition which specifies a general topological identity for the two conjuncts, such as 'I came into the room'. This is precisely the case for (33). In (33), although both conjuncts refer to events, the temporal alignment is not what is focused on. Rather, the two events are presented as supporting evidence of the first sentence. The speaker has bracketed the two situations together because they are events of the same type vis-à-vis the current purpose of the discourse.

In (34), the two situations are naturally understood as contrastive because of the lexical properties of the predicates *atsu-* 'be hot' and *suzushi-* 'be cool'. The CONTRASTIVE relation may require more reasoning than that involved in a simple lexical contrast, however. In fact, discovering a CONTRASTIVE relation frequently involves an abductive reasoning process, as in (35).

(35) jimintoo wa antee-tasuu o **kakuho shite** shakaitoo wa teeraku
LDP TOP firm-majority ACC **hold-TE** JSP TOP DECLINE
ga tsuzuita.
nom continued
'The Liberal Democratic Party secured a firm majority, BUT the Japan Socialist Party continued its decline.'

In (35) the interpreter must invoke the principles that for a political party to secure a firm majority requires gaining sufficient votes, and that for it to decline indicates its loss of votes. When this much of the inference has been made, then recognizing a CONTRASTIVE relation becomes a matter of lexical contrast.

To sum up, whenever TE Links conjuncts – temporal (e.g. CAUSE, REASON) or atemporal (e.g. ADDITIVE, CONTRASTIVE) – the use of TE-linkage guarantees that the speaker has recognized some principle binding together the described situations.

7. Theoretical implications

It has been shown (section 3.3) that with TE-linkage the TEMPORAL SEQUENCE relation is cancellable, and thus can be regarded as conversational implicature, rather than part of the meaning of TE-linkage. However, we cannot simply omit it from the semantic description of TE-linkage because, for example, unmitigated TEMPORAL SEQUENCE relations cannot be expressed by the use of TE-linkage. These facts are paradoxical in the Gricean theory of pragmatics. Are some meanings BOTH asserted and implicated?

7.1. Semantical hypothesis

Cohen (1971) analyzes cancellable meanings differently from Grice – an analysis he calls the SEMANTICAL HYPOTHESIS. Under the Semantical Hypothesis, the meaning of *and* is much richer than that of the truth-functional connective *&*. "In addition to expressing the conjunction of two truths it also indicates that the second truth to be mentioned is a further item of the same kind, or in the same sequence, or of a kind belonging to the same set of commonly associated kinds of item, or etc. etc., as the first truth to be mentioned" (ibid.: 55). Consider (36), in which the semantic relations TEMPORAL SEQUENCE and CAUSE ARE cancelled.

(36) The old king has died of a heart attack and a republic has been declared, but I don't know which of these two events preceded the other nor do I wish to suggest some connection tends to exist between two such events. (ibid.: 54)

For Cohen, what is cancelled in (36) is not conversational implicature, but is "a feature that is one of those features which should be listed in any adequate dictionary entry for the word" (ibid.: 55) – in this instance, presumably, the dictionary

entry for the word *and*. A more concrete example will help clarify what is involved in this approach. The conversational-implicature approach would posit that the word *flower* in the sentence *This is a flower* implicates that the object in question forms part of a plant, and that this implicature is in turn cancelled by *This is a plastic flower*. Cohen, to the contrary, argues that in this example some part of the normal meaning of the noun *flower*, rather than any implicature, is what is cancelled by the adjective *plastic*. Such a view of 'meaning', it should be noted, is quite different from Grice's. For Grice, a word's semantic 'meaning' is the invariant part of its meaning – a minimalist view. Cohen, on the other hand, takes a maximalist position, whereby a word's meaning encompasses all of its (apparent) subsenses in a singly whole – with the proviso that some of these meaning components can be cancelled.

Are we then to explicitly attribute TEMPORAL SEQUENCE, CAUSE, and all other compatible semantic relations to the lexical entry for *and* in English and TE in Japanese? If so, does this not violate Occam's Razor, the metatheoretical principle which states 'Do not multiply entities beyond necessity'? Does it not say more than is actually necessary? Cohen claims that under the Semantical Hypothesis there is in fact no such violation. Both his approach and Grice's, he asserts, involve only a single lexical meaning for the given word. Grice's 'meaning', in truth-conditional terms, says less and hence is weaker; Cohen's 'meaning', as formulated within the Semantical Hypothesis, is richer and hence stronger; but both approaches posit just one meaning as the lexical meaning of *and*. Hence neither theory has any advantage over the other regarding lexicographical simplicity.

Cohen's approach is plausible in the case of *plastic flower*, but difficult to envisage in the case of TE. The question is, the truth-conditional meaning being the weaker one, whether or not there is, correspondingly, some specific 'strong' definition of TE-linkage which can then be cancelled. Cohen does not supply candidates. Let us, therefore, turn to Kortmann (1991) to yield one possible approach to such a 'strong' meaning.

7.2. Semantic informativeness

Investigating English free adjuncts and absolutes, Kortmann (1991: 119–121) hypothesizes that identification of the semantic relation(s) between a given free adjunct or absolute and the matrix clause is essentially determined by a scale of semantic informativeness or specificness. Analyzing 1,681 examples of present-participial free adjuncts and absolutes in his corpus, Kortmann proposes the following scale (the line indicates the border between categories deemed 'more informative' and 'less informative' categories):

most informative	concession	
(strongest)	contrast	
↑	condition	
	instrument	purpose
	cause	result
more informative	time before (anteriority)	time after (posteriority)
less informative	manner	
	exemplification/specification	
↑	same time (simultaneity/overlap)	
(weakest)	accompanying circumstance	
least informative	addition	

'More informative' semantic relations require more knowledge or evidence on the interpreter's part than do 'less informative' ones. For example, to interpret the semantic relation between the two propositions as one of adverbial modification, e.g. CONCESSION, CONDITION, CAUSE, rather than as simple ACCOMPANYING CIRCUMSTANCE, requires more knowledge of the world, as illustrated in (37).

(37) Serving the two portions ... Royce remained silent, ... (Kormann, 1991: 122)

The semantic relation between the main and the participial clause in (37) can be a CONCESSION, i.e. *Although serving the two portions, Royce remained silent*, or a CAUSE, i.e. *Because he served the two portions, Royce remained silent*, or finally a mere ACCOMPANYING CIRCUMSTANCE, *While serving the two portions, Royce remained silent*. "Lack of substantiation of a 'more informative' member [of the scale] will lead to the selection of a 'less informative' one. On the other hand, if the information in the preceding context, for example, makes it appear justified, then a 'more informative' interpretation may be chosen" (ibid.: 129).[17]

7.3. Semantic informativeness and TE-linkage

We can now draw on Kortmann's framework in an attempt to apply Cohen's Semantical Hypothesis to the analysis of TE-linkage. Might one perhaps postulate a semantic informativeness scale similar to that proposed by Kortmann and then take the most informative relation as actually being the 'meaning' of TE-linkage?

The answer appears to be negative. It seems impossible to posit CONCESSION, the most 'informative' relation on Kortmann's scale, as the 'meaning' of TE-linkage and

[17] Kortmann considers that the unmarked temporal relationship between a present-participial free adjunct/absolute and the matrix clause is SIMULTANEITY/OVERLAP. Here TE-linkage differs significantly from participial free adjuncts/absolutes. As mentioned above, TE-linkage is not compatible with the SIMULTANEOUS relation.

then cancel part of this meaning when the concessive reading is inappropriate.[18] One might instead propose TEMPORAL SEQUENCE as a more realistic candidate for the 'meaning' than CONCESSION. However, as demonstrated above, the genuine TEMPORAL SEQUENCE relation cannot be expressed by the use of TE-linkage. Furthermore, under the Semantical Hypothesis a meaning 'stronger' than the one posited in the lexicon cannot be inferred: CAUSE is certainly more informative (hence stronger) than TEMPORAL SEQUENCE, and TE-linkage is indeed compatible with CAUSE, yet if we posit TEMPORAL SEQUENCE as the 'meaning' of TE-linkage, there is no mechanism to account for the stronger CAUSE readings in the Semantical Hypothesis. The final possibility is to consider CAUSE itself to be the 'meaning' of TE-linkage. But we would then need to posit more meanings, e.g. MEANS, because there are many TE-compatible semantic relations that cannot be deduced from CAUSE.

I have argued that there *is* a meaning of TE-linkage that is stronger than that of the truth-conditional *&*; viz. the speaker presents the two situations referred to by the conjuncts as nonincidental. Still operating within Cohen's framework, might we posit this as the 'meaning' of TE-linkage? Here a central problem is that this meaning belongs to a different realm from that of the semantic relations which Cohen has discussed: it makes essential reference to the human world. Furthermore, nonincidentalness is not cancellable under any circumstances. For example:

(38) maki wa tookyoo e **itte** guuzen ni hiro ni deatta.
TOP ALL **go-TE** accidentally DAT ran into
A: 'Maki went to Tokyo and accidentally ran into Hiro.'
B: 'Maki went to Tokyo and unexpectedly ran into Hiro.'

At first glance, (38) appears to describe an incidental sequence of events because of the phrase *guuzen ni* 'accidentally'. A careful examination reveals, however, that this sequence of events is nonincidental. It is Maki's going to Tokyo which ENABLES her

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[18] This claim does not deny the possibility that some semantic relations are weighted according to their informativeness. Hasegawa (1992: 226–227) reports that MEANS is more informative than TEMPORAL SEQUENCE on such a scale, and that the former is selected whenever it accords with the interpreter's world knowledge.

"...[the following sentence] was unanimously translated as A by six [bilingual] native speakers of Japanese ...

gomukan o pintikokku de tomete hi o kesu.
rubber-tube ACC pinch-cock PRT choke-of-a-flow-TE fire ACC extinguish
A: 'By pinching the rubber tube with a pinch-cock, extinguish the flame.'
B: 'Pinch the rubber tube with a pinch-cock, and extinguish the flame.'

[This sentence], taken from a high-school science textbook, is part of an experiment procedure. In this experiment, two rubber tubes are used: one connecting a gas pipe and a burner, and the other a flask and a glass tube. After careful consideration, [the participants in the project] recognized that A instructs the students to turn off the gas flame by an unusual and dangerous means, a means which should not appear in a science textbook. Thus [the participants] rejected A and took *gomukan* 'rubber tube' to be the one connecting the flask and the glass tube ... Note that when [they] first translated [the sentence], [they] were totally aware of these linguistic and extralinguistic contexts, and yet employed the unmarked parsing strategy ... because pinching the tube *can* extinguish the flame."

to run into Hiro.[19] What *guuzen ni* signifies here is unexpectedness from the subject-referent's viewpoint, rather than any interpretation on the speaker's part that the two events are truly disconnected. Therefore, in (38) (B) is a more accurate translation than (A), and the sequence remains nonincidental.

I conclude that the approach suggested by Cohen, though insightful and deserving of serious consideration, is not very promising empirically when applied to the problem of Japanese TE. The analysis proposed in this article is not compatible with, and provides no support for, either Grice's or Cohen's analysis of cancellable meanings. Rather, I contend that in order to analyze the meanings of 'fuzzy' connectives like TE, it is necessary to look beyond the traditional semantic paradigm and invoke notions such as incidentalness.

8. Conclusion

Although most, if not all, semantic relations associated with TE-linkage can be worked out from the meanings of the conjuncts alone, the reductionism of the implicature-only analysis – with its over-attribution of semantic relations to pragmatics – has proved to be untenable. The semantic value of TE-linkage cannot be characterized without essential recourse to the human cognitive faculty. Traditional semantic analysis, however, ignores such notions and lacks the vocabulary to deal with them. If one adheres to traditional modes of semantic analysis, therefore, one will inevitably be led to the conclusion that all TE-compatible relations must be implicatures. However, the grammar cannot treat such semantic relations as mere implicatures and simply leave them out of the description of TE-linkage, because, for example, TE-linkage cannot be used to express all TEMPORAL SEQUENCE relations that can be implicated by the conjuncts, but only certain subtypes of them. If a theory claims that TEMPORAL SEQUENCE is truly to be derived by a pragmatic principle, the theory will then be forced to have recourse to some filtering mechanism to eliminate those subtypes that do not persist through TE-linkage, appealing for this purpose to some other pragmatic principle – an approach which is neither insightful nor parsimonious.

In this paper, I have presented a different approach to the analysis of the connective TE, one which utilizes the vocabulary of human cognition. I contend that TE is not a mere syntactic device for conjoining two clauses, but has its own semantic value. Through the use of TE-linkage, the speaker presents the two situations as being related in some principled way – e.g. causation, intention of a single individual, or reason for an action – so that the presented situations are viewed as NONINCIDENTAL. This very human principle, in fact, is the semantic value of TE-linkage.

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[19] The ENABLEMENT relation is similar to, but weaker than, the CAUSE relation. The CAUSE relation indicates both necessary and sufficient conditions, whereas the ENABLEMENT relation indicates only the former.

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