

The visibility guideline for functional categories: verb raising in Japanese and related issues[☆]

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Abstract

This paper discusses the issues concerning functional categories in Japanese as they pertain to Universal Grammar. A minimalist guideline called the Visibility Guideline for Functional Categories is proposed, according to which functional categories are required to be “detectable” (directly or indirectly) in the primary linguistic data. Various candidates for functional categories in Japanese are examined in light of the Visibility Guideline, and it is concluded that none of them is qualified as an active functional category inducing formal and mechanical computations. An alternative view of the relevant phenomena in terms of “PF reanalysis” is put forth, and the analysis is extended to the case marking mechanism in Japanese. An overall picture of Japanese grammar is also suggested as the result of the discussion on functional categories: In many areas of Japanese grammar, PF and semantic mechanisms are at work in place of mechanical computations in narrow syntax.

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1. Introduction

Although the traditional term “function words” or Chomsky’s (1970) notion of “non-lexical categories” has much in common with the contemporary notion of

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“functional categories,” it seems fair to say that it is since the mid-1980s, when a class of elements was given the name “functional categories/elements” (Fukui, 1986; Speas, 1986; Abney, 1987, among others) and their properties were first discussed in detail, that these elements have been a focus of much attention within the context of universal grammar (UG). The importance of these elements for the theory of grammar comes from the fact that (i) they are taken to be the sources of driving force for movement transformations, and (ii) they are also identified as a locus of cross-linguistic variation. Thus, for the past fifteen years or so, much of syntactic discussion has been centering around the nature and properties of functional categories as they pertain to UG as well as to characterizations of particular grammars. Japanese syntax is no exception, which is why we wish to discuss in this article some of the main issues concerning “functional categories in Japanese.”

Section 2 of this article is devoted to a general discussion of functional categories. A brief historical overview of the development of the notion of functional categories in linguistic theory is presented in Section 2.1, and in Section 2.2, various hypotheses concerning the functional categories in Japanese are discussed. As a general theoretical guideline for a fruitful discussion of functional categories, the “Visibility Guideline for Functional Categories” is proposed, which dictates that functional categories be detected in the primary linguistic data. Various past proposals concerning the functional categories in Japanese are examined in light of this guideline.

Section 3 focuses on the issue of verb raising in Japanese as a representative case of the debates concerning functional categories in Japanese syntax. Koizumi’s (2000) arguments in favor of the existence of (string vacuous) overt verb raising in the language are taken up and critically examined in detail. And it is concluded that, quite interesting though they are, none of his arguments are convincing enough to draw the conclusion that Japanese has the process of overt verb raising.

The discussion in Section 3 calls for an alternative analysis of coordination in Japanese, which is one of the central cases of Koizumi’s arguments for overt verb raising in the language. Section 4 offers such an alternative analysis, which claims that the construction is formed in the PF (Phonetic Form) component (or the “phonological” component) by means of a reduction/deletion of identical predicates and a reanalysis of adjacent elements into a single constituent.

Section 5 extends our discussion to case marking in Japanese. After a brief review of the past analyses of Japanese case marking which have developed side by side with general linguistic theory (the standard theory, the “government-binding” theory, and the minimalist program), it is suggested that case marking in a language like Japanese should take place in the PF component, essentially along the lines of Kuroda (1965, 1978, among others; see also Fukui and Takano, 1998), and contrary to much recent work on Japanese case marking.

Section 6 further pursues the issues of case marking in Japanese, and presents some evidence in favor of the PF analysis of case marking. Interactions between PF reanalysis and case marking are considered, and it is argued that the “syntactic case marking” approach (i.e., the assumption that Japanese case marking takes place in the narrow syntax) faces various problems. The discussion is then extended to the

so-called light verb construction, and the same conclusion is reached based on the properties of this construction.

Section 7 summarizes the discussion in this paper, and makes some concluding remarks on functional categories in UG and in Japanese. A tentative view on the overall picture of Japanese syntax that emerges from our discussion is also presented.

2. General discussion

In this section, we first briefly go over the historical development of functional categories in linguistic theory, and, as a basis for the discussion that follows, we propose the “Visibility Guideline for Functional Categories” (Section 2.1). We then go on to discuss various issues concerning the functional categories in Japanese as they have appeared in the past literature, and examine the previous proposals in light of the Visibility Guideline (Section 2.2).

2.1. Functional categories in universal grammar

The concept of functional categories (or functional elements) started attracting much attention in linguistic theory around the mid-1980s. There are two major reasons for the upheaval of functional categories in this era. One has to do with the theory of phrase structure and movement, and the other is concerned with comparative syntax, i.e., the study of cross-linguistic variation. Let us consider these matters in some detail.

Modifying the previous analyses of *wh*-movement, Chomsky (1986) proposes that *wh*-movement be analyzed as an operation which moves a *wh*-phrase into the specifier position of a complementizer (notated as [Spec, C]), in the sense of X-bar theory. Given this analysis of *wh*-movement, all movement (substitution, in particular) operations, apart from head movement, are now analyzed as movement into Spec positions. Thus, Passive/Raising (so-called NP-movement) is a movement into [Spec, I] (where I stands for inflectional elements), Passive in a noun phrase is a movement into [Spec, N] (N is a Noun), and *wh*-movement, which has long been assumed to be a movement into a C position, is now analyzed as a movement into [Spec, C]. Other options are independently excluded by principles of UG, and the theory of movement is now greatly simplified.

Around the same time, the basic properties of functional categories were identified (Fukui and Speas, 1986; Abney, 1987), and two major proposals were made with respect to phrase structure analyses. One is the so-called “DP (Determiner Phrase) analysis,” which takes a determiner (D) to be the head of a nominal expression (op cit. and references cited therein). The other is the “Predicate-Internal Subject Hypothesis,” according to which all arguments, including crucially the subject (external) argument, are base-generated within the predicate’s own projection (see, among others, Fukui, 1986; Kitagawa, 1986; Koopman and

Sportiche, 1991; Kuroda, 1988; Speas, 1986). There are variants of these (now well-known) analyses with diverse consequences. One variant, developed by Fukui's series of works since 1986 (see also Speas, 1990, for a different development based on the same ideas), incorporates these analyses into the theory of phrase structure that he develops (the so-called Relativized X-bar theory), which essentially eliminates the need for stipulating the X-bar Schemata, minimizing the role of X-bar theory in phrase structure composition while maintaining its basic descriptive effects.

The core idea of Relativized X-bar theory is that phrase structure composition is on a par with movement in that it is also driven by feature discharge. It has been assumed, at least since Chomsky (1970), that lexical items in the lexicon are bundles of features such as $[\pm N]$, $[\pm V]$, etc. Relativized X-bar theory takes this idea seriously and claims that features are actually the driving force for constructing phrase structure. Items of the lexicon are divided into two major sub-types: lexical categories and functional categories. The latter type of categories roughly corresponds to the traditional non-lexical categories, renamed in consideration of their nature. Lexical categories have substantive content, and include nouns, verbs, adjectives, etc. They typically enter into theta-marking [leading, eventually, to the construction of predicate-argument structure at LF (Logical Form)]. Functional categories do not have substantive content, and do not enter into theta-marking, although they do have other feature structures, including categorial features, agreement features, etc. Lexical categories play an important role in interpretation of linguistic expressions, and indeed, most of the items in the lexicon belong to this type. Functional categories, on the other hand, do not play a comparable role in interpretation of linguistic expressions; their role is largely restricted to "grammatical" (or "computational") aspects of linguistic structure.¹ These categories constitute a small, and often closed, set, which include C, I, D, and a few others.

Thus, there exists a general division of labor between lexical and functional categories as to their roles in linguistic expressions:

- (1) (i) Lexical categories: the conceptual aspects of linguistic expressions.
- (ii) Functional categories: the computational aspects of linguistic expressions.

Lexical categories bear semantic features, including in particular features having to do with theta-roles. They assign (or "discharge") theta-roles/features associated with them to other phrases, thereby forming larger structures that embed them. Functional categories do not bear theta-roles, their role being restricted to purely formal and computational aspects of linguistic structure such as marking grammatical structures or triggering movement operations. Some functional heads bear "agreement features," and these agreement features attract a maximal projection to their neighborhoods (their Specs), in order for the latter to agree with the

¹ Some of the proposed functional categories have been claimed to bear certain semantic import. This point will be taken up again later.

former. Thus, functional categories are indeed the “drive” for syntactic movement operations in the Relativized X-bar theory. Lexical categories, in contrast, lack agreement features of this kind, and hence do not induce movement. Furthermore, since [Spec, X] is defined in the Relativized X-bar theory as a maximal projection that agrees with the head X, it follows that only functional categories with agreement features have an ability to license the Spec positions; lexical categories (and functional categories with no agreement features) never license Spec positions.

The idea of functional categories as the major driving force for movement opened up a new way of looking at cross-linguistic variation, and facilitated much subsequent work on comparative syntax in terms of the properties of functional elements in various languages. Given the nature and role of functional categories, it was proposed that language variation be restricted (apart from ordering restrictions) to the functional domain of the lexicon (Fukui, 1986, 1988; see also Borer, 1984, particularly for an illuminating discussion on the role of inflectional elements in language variation), and this proposal contributed significantly to constructing a more restrictive theory of comparative syntax. At the same time, numerous “new” functional categories were proposed in the late 1980s and in the early 1990s (initiated in part by J.-Y. Pollock’s influential article (Pollock, 1989)), achieving tremendous descriptive success,² although from an explanatory point of view, it was clear that the class of possible functional categories has to be severely restricted in a principled way.

There are various reasons for the emergence of “new” functional categories in the late 1980s. One reason is certainly “descriptive pressure,” i.e., to achieve descriptive adequacy, it often seems necessary to enrich the descriptive apparatus that is permitted by UG. This is reminiscent of the situation of generative transformational grammar up to the early 1970s, where new transformations were added one after another as new phenomena were discovered, so to speak. Like transformations, functional categories are a useful descriptive tool whose attractiveness may be irresistible as one faces descriptive problems. They create new structures, with possibilities of additional movement operations (either head movement or movement of a maximal projection, or both).

Another reason is the absence of a general theory of functional categories in UG. There have been proposals as to the class of possible lexical categories in UG (see Chomsky, 1970; Jackendoff, 1977, among many others). Thus, if one assumes with Chomsky (1970) that all lexical categories are defined in terms of the [\pm N] and [\pm V] features, then there will be, in principle, only four possible lexical categories. By contrast, there was no widely assumed proposal in the late 1980s or early 1990s concerning the “possible functional categories in UG,” and this led to the situation where one was tempted to create a “new functional category” when the phenomenon at hand seemed to require a new structure (and a movement).

² Relevant works are too numerous to mention. See the chapters in part IV (Functional Projections) of Baltin and Collins (2001) and references cited there.

The general theoretical trend in the 1980s constitutes another motivation for proposing “new” functional categories. Since the crystallization of the principles-and-parameters approach around 1980, efforts have been concentrated on enriching the content of UG, in an attempt to shift the descriptive burden from particular grammars to UG. Thus, during this period of “expanding UG,” it was, at least implicitly, considered desirable to add new entities (new principles, new elements, etc.) to UG. Creation of “new” functional categories occurred as part of this general theoretical tendency and it was considered warranted.

Against this general trend, an attempt was indeed made from the outset to make it clear that postulated functional categories have to be fully justified by the evidence. Thus, Fukui (1986, 1988) argues that a language like Japanese, in the absence of overt evidence in the language, lacks (active) functional categories in the lexicon, and he goes on to demonstrate that from this fundamental “parametric” property, various seemingly unrelated properties of Japanese are deductively derived (given the Relativized X-bar theory). The basic view on functional categories behind this proposal can be summarized as follows.

(2) The existence of a functional category has to be detected from overt evidence.

Under this view, the inventory of functional categories in UG cannot be assumed *a priori*, but rather, each functional category has to be justified based on the evidence. If there is no such evidence, the functional category in question has to be non-existent in the language. The core idea of this proposal was effectively adopted by Radford (1990) and was applied to the study of language acquisition. But the acquisition study of functional categories along these lines was overwhelmed by the proposal that UG is equipped with a full inventory of functional categories (Poeppel and Wexler, 1993; Wexler, 1994, among others). Iatridou (1990) examines the nature of “Agr” (a “newly created” functional head in the late 1980s) in the context of the theory of functional categories in general, and reaches a conclusion similar to (2). Fukui (1995b; written in 1992) further pursues a restrictive theory of functional categories in UG, and proposes that functional categories, like lexical categories, be characterized in terms of the $[\pm N]$ and $[\pm V]$ features (in addition to $[\pm \text{lexical}]$ and $[\pm \text{functional}]$ features; see Fukui, 1995b, for details). He also suggests that the “genuine” functional categories are invisible at LF, and those LF-invisible functional categories can be completely missing in the lexicon of a given language (unless there is overt evidence at PF (Phonetic Form)).

The “minimalist program” was set forth in the early 1990s (Chomsky, 1993), which takes seriously the fact that language is embedded within other cognitive systems (conceptual-intentional and sensorimotor systems, in particular), apparently satisfying the “requirements” of the neighboring cognitive systems in an optimal way. This research program specifically addresses the question of how many of the properties of UG can be explained “on principled grounds,” i.e., in terms of the conditions imposed on language by the other cognitive systems (the “interface conditions”) or in terms of the general principles of “economy/optimality” that regulate the properties of organisms including the human language faculty. In the minimalist

program, every device in UG (entity, principle, etc.) that is employed in characterizing languages has to be closely and critically examined to determine to what extent it can be eliminated in favor of a principled account based on the interface conditions or general principles of economy/optimality. Thus, functional categories, too, should face such a minimalist critique.

The minimalist program effectively puts an end to the above-mentioned strong tendency toward enriching the devices of UG, including, in particular, functional categories. Applying minimalist guidelines to functional categories, Chomsky (1995: 240) claims that “[p]ostulation of a functional category has to be justified, either by output [i.e., interface; N.F.] conditions (phonetic and semantic interpretation) or by theory-internal arguments. It bears a burden of proof, which is often not so easy to meet.” Continuing to rest on the works mentioned so far [cf. (2)], we would like to slightly modify Chomsky’s remarks, and propose the following guideline.³

(3) The Visibility Guideline for Functional Categories

A functional category has to be visible (i.e., detectable) in the primary linguistic data.

We hold that the nature of functional categories is to “drive” syntactic operations (by having “uninterpretable features” in current terminology). While it is true that functional categories may play a role at LF, we take this to be “accidental,” not directly bearing on the nature of these categories. For example, the semantic notion of “specificity/referentiality” may be represented by the functional category D, but it may also be represented in some other way (see Chierchia, 1998). There is no reason that the mood/force of a sentence must be indicated by the functional category C; it can be indicated by a lexical head or a particle, for example. The concept of negation can be encoded into a given language in various ways that are permitted by UG; the use of a functional category may not be even an option. We therefore maintain a narrower notion of functional categories that these elements have in principle no bearing on semantic interpretation (invisible at LF). If this is true, the Visibility Guideline for Functional Categories (the Visibility Guideline, henceforth) in (3) simply dictates that a functional category be visible/detectable at PF.

There are three ways that a functional category becomes visible/detectable at PF. One is to bear phonetic content by itself (and to be pronounced). Having phonetic content, then, the functional category becomes visible in its own right at PF. Another is to influence the morphological shape of a neighboring lexical category (a verb, for example). A third way for a functional category to become visible/detectable is to trigger a movement of a maximal projection into its neighborhood, thereby affecting the “canonical word order” of a given language, which in turn signals that a syntactic movement has occurred. The first possibility (i.e., its having phonetic content) is a direct way of becoming visible/detectable at PF. The other two possibilities represent an indirect signaling of a functional category in that it is not the

³ See also Thráinsson (1996) for a proposal along similar lines, as well as a novel analysis of inflectional (tense and agreement) elements.

functional category itself that is visible at PF, but its existence can be detected from other indications in a linguistic expression.

Furthermore, the direct signaling (the first possibility) and the indirect signaling (the second and the third possibilities) seem to be mutually exclusive (see Fukui, 1986 for an early observation to this effect). Thus, Fukui and Takano (1998: 55) make the following generalization:

(4) A functional head H enters into feature checking only if H lacks phonetic content.

Assuming that the second and third possibilities are driven by some sort of feature checking (or its equivalent, e.g., feature matching), statement (4) implies that an overt functional category never triggers feature checking (and hence movement). This prediction seems to be borne out in a wide variety of cross-linguistic cases. See Fukui and Takano (1998) for further discussion.

In the remainder of this article, we will consider various proposals concerning functional categories and related phenomena in Japanese in light of the Visibility Guideline (3), coupled with the generalization (4).

2.2. *Functional categories and Japanese syntax*

The status of “functional categories” in Japanese has a rather ironical history. As soon as the theory of functional categories was put forth in the mid-1980s, it was hypothesized that Japanese lacks active functional categories. In fact, in Fukui’s (1986) system of phrase structure, this parametric statement about functional categories in Japanese was an integral part of his efforts to construct a comparative model which derives major differences between the Japanese-type languages and the English-type languages.⁴ Thus, even though an initial theory of functional categories was proposed in the context of a comparative syntax of English and Japanese, the study of Japanese syntax did not play any substantive role in the subsequent developments of the theory of functional categories.

Fukui’s hypothesis that Japanese lacks active functional categories was challenged by Tonoike (1987), who claims that Japanese possesses a set of functional categories but with no agreement features, a proposal which is along the lines of Kuroda (1988).⁵ Fukui (1988) argues that it is extremely difficult, if possible at all, to distinguish between a hypothesis that a given language lacks functional categories, and another hypothesis that the language possesses functional categories which are not “active” in the sense that they do not bear any agreement features. Given the Visibility Guideline, if a candidate “functional category” bears phonetic content, it is visible at PF and hence could be justified as an existing functional category in the language. And from the generalization (4) above, it follows that the functional category never enters into feature checking (agreement).

⁴ The same holds true, *mutatis mutandis*, of Kuroda’s (1988) attempt at a comparative syntax of English and Japanese.

⁵ A preliminary version of this article was written in 1985.

There are, however, at least two problems that arise in this connection. First, identifying a certain element in a language with a member of functional categories is no easy task. Thus, while it is true that the Japanese *-to* has a role of introducing some sort of a clause, it is another matter to determine whether or not it should be identified with the functional category C (attested in English, for example). One has to closely examine the properties of *-to* to see if this element exhibits various properties that justify its status as C in Japanese. The same holds true of other candidates for “functional categories” in Japanese. It is well-known that Japanese has numerous elements that are not quite attested in English and other European languages (e.g., various kinds of particles). Simply classifying some of them as instances of “functional categories” (that do not induce agreement/feature checking) is just an arbitrary decision which does not contribute to a real understanding of the language (and UG). The second problem has to do with the “nature” of those alleged “functional categories” in Japanese. If the functional categories are present in a language, but they are not active, what does their existence mean exactly? Some of those functional categories do play a role in determining semantic interpretation. For example, *-ka* determines the scope of *wh*-phrases, and as such, it would be reasonable to analyze this element as a kind of “Question morpheme.” It is a different matter, however, to claim that *-ka* is the Japanese counterpart of the complementizer in English (See Fukui, 1986, 1988 for relevant discussion).

In the absence of a substantive general theory of functional categories, none of these (and many more) problems can even be properly addressed at this point. And this is why a number of efforts in the past fifteen years or so to “identify” functional categories in Japanese seem to have all failed. It is simply premature to try to “discover” functional categories in Japanese. It seems to us, then, that a meaningful question that can be asked at the present stage of our understanding is the following.

- (5) Does Japanese exhibit formal and mechanical “feature checking phenomena” which are comparable in nature to those attested in other languages (such as English and other European languages)?

The “feature checking phenomena” here include those that are captured by a mechanism such as Agree/Match (see Chomsky, 2000, 2001a, b) and those that are handled (controversially) by head movement. The problem is totally empirical, and the evidence has to be found by carefully examining the facts about Japanese syntax. Thus, when a certain “dependency” relation is found in Japanese, one cannot simply “assume” that this is a phenomenon to be handled by Agree/Match, without examining the nature of the dependency relation. It has to be shown that the dependency relation is indeed of a formal and mechanical nature that should be characterized by the operation Agree/Match.

Also, one cannot “assume” (without evidence) that Japanese has agreement (or feature checking) because English and other languages have been argued to exhibit agreement phenomena. Chomsky’s remark of the following kind (cf. also Hattori, 1971) is sometimes used (implicitly or explicitly) to justify assuming the set of functional categories and associated feature checking in Japanese.

“One general working hypothesis that has proven very fruitful is that if some phenomenon is observed overtly in certain languages, then it probably applies covertly (i.e., without overt expressions at PF) in all languages in some manner...” (Chomsky, 1987: 69)

It is certainly true that the research strategy guided by the working hypothesis in the above quote has been extremely successful in the development of linguistic theory in the past 20 years or so (C.-T. James Huang’s work on “LF *wh*-movement” is a classical example). However, in all the successful cases, the relevant phenomena are carefully argued for, not just assumed. Thus, Huang (1982) examines the properties of *wh*-questions in English (where *wh*-phrases are overtly moved) and those of *wh*-questions in Chinese (where *wh*-phrases are not overtly moved), and he discovers various intricate similarities and differences between these two (types of) languages with respect to the behavior of *wh*-questions. Then, he proposes that a unified account of these similarities and differences is readily available if it is assumed that *wh*-phrases in Chinese-type languages, even though they do not move overtly, actually undergo movement in the LF component. Here, the “assumption” is in fact argued for, and its plausibility is reasonably justified. Similar arguments are scarcely provided for the postulation of functional categories and associated feature checking phenomena in Japanese.

Furthermore, a word of caution is in order as to how to interpret the “working hypothesis” mentioned in the above quote. Following the current framework of generative grammar, let us assume that UG consists of two subcomponents, the lexicon and the computational system. With respect to the computational system, the “working hypothesis” makes good sense. If it is discovered that an operation (Merge, Agree/Match, etc.) is employed in one language, it means that the operation is “wired in” and is made available by UG. Thus, it is reasonable to expect that the operation is available to any human language and can be employed either overtly or covertly. However, the situation is not so clear with the lexicon. Suppose that a certain lexical item is attested in a language. Is it reasonable, then, to assume that every human language possesses this lexical item (either overtly or covertly)? This is a moot point even for those lexical elements (typically lexical categories) which generally play a role in semantic interpretation, thereby fulfilling interface conditions. For example, given the fact that Japanese has a variety of particles which contribute to the interpretation of a linguistic expression, is it reasonable to assume that English also has these particles (covertly)? The answer to this question is unclear, but no serious attempt has been made to justify “null particles” in English.⁶ In the case of (genuine) functional categories playing no role in semantic interpretation, a reasonable conclusion is clear: One cannot assume the “universal”

⁶ Ken Hale’s proposal (made in the mid-1980s) of the functional category K (for Case) (see Bittner and Hale, 1996 for a written version), which is overt in Japanese but covert in English, is perhaps the only exception, though this alleged category is not a lexical category and has nothing to do with semantic interpretation of a linguistic expression. Ross’s (1970) performative analysis can be taken as an attempt to propose a linguistic device that is overtly manifested (as sentence-final particles) in a language like Japanese, for an analysis of a language like English where there is no overt manifestation (although the analogy is not quite accurate).

existence of functional categories. Each candidate for a functional category in each language has to have its existence justified on the basis of empirical evidence (available in the primary linguistic data, according to the Visibility Guideline).

Thus, we conclude that functional categories in Japanese and the phenomena associated with features of these categories have to be carefully justified in terms of empirical evidence in accordance with the Visibility Guideline (3). When a certain element is observed in Japanese with an LF function similar to that of a functional category in English (C, T, D, etc.), it is premature, without independent evidence, to identify the element in Japanese with the functional category in English, because the same LF role can be assumed by different categories (and not necessarily functional categories) across different languages. The lack of a substantive general theory of functional categories also makes it premature to identify “functional categories in Japanese”. If a phenomenon related to a functional category (either a movement of a maximal projection or a head movement) is to be identified in Japanese, it is necessary to determine whether the given phenomenon is of the same nature as attested cases of agreement/movement induced by a functional category, i.e., whether it is of a formal and mechanical nature that should be handled by Agree/Match or head movement. In the next section, we will take up the case of T (Tense) in Japanese and will address these questions.

3. Verb raising in Japanese: a case study

Among the functional categories attested in English and other European languages (C, T, D, etc.), we focus on the status of the category T in Japanese. This is mainly because a number of recent works on Japanese syntax (Watanabe, 1993, 1996a, b; Ura, 1994, 1996, 1999, 2000; Kishimoto, 2001; Koizumi, 1995, 2000; Miyagawa, 1997, 2001, among others) crucially assume that the category T exists as an independent functional head and that it plays various important roles in syntactic phenomena of Japanese, such as its verbal morphology, case marking, scrambling, and so on. If their arguments are convincing (based on compelling evidence), the category T is indeed visible in the narrow syntax of Japanese as well as in English. By contrast, Fukui (1986, 1995a: 109) argues that Japanese T (or I) is very defective and plays no vital role in narrow syntax except as a mere “place holder” for tense morphemes such as *-ru* (non-past) and *-ta* (past). In accordance with the Visibility Guideline introduced above, Fukui’s claim can be interpreted to mean that the Japanese T, even though it is allowed to exist in the language, is visible only “on the PF side”.

In recent literature on the syntax of European languages, it is widely assumed that the category T plays two significant roles in syntax. First, it hosts the V-to-T raising in overt V-raising languages such as French or Icelandic. Second, T is assumed to be a licenser of the nominative Case feature of a subject noun phrase in a finite clause. In an attempt to show that the same holds of Japanese, Otani and Whitman (1991), Koizumi (1995, 2000), and Miyagawa (2001), among others, argue for the existence of V-to-T raising in Japanese. As for the second role of T, Takezawa (1987, 1998), Watanabe (1993), Ura (1994, 1996, 1999, 2000), and Miyagawa (1997), to name a

few, claim that T plays an important role in licensing nominative Case (*ga*-marking) in Japanese. In this section, we focus on the arguments for V-to-T raising in Japanese proposed in the literature. We will show that a careful examination of verbal morphology in Japanese reveals that these previous arguments for V-to-T raising in Japanese are either inadequate or premature. Then, we present a piece of evidence that the Japanese V-T complex is actually created by a PF operation, i.e., so-called Morphological Merger proposed by Marantz (1988) and Halle and Marantz (1993). The issues surrounding nominative case marking in Japanese will be discussed in the following sections (particularly Sections 5 and 6).

3.1. *V-to-T raising in Japanese: a quick overview*

Verb raising phenomena have been extensively studied from the very beginning of the history of contemporary generative grammar. Thus, Chomsky (1957) presents a simple and elegant account for the complex properties of English verbal morphology in terms of Affix-Hopping and other transformations. Emonds (1978) also makes a significant contribution to the study of verbal morphology, by showing that systematic differences in finite verb positions between English and French are nicely accounted for on the basis of the presence/absence of overt verb raising in these languages. Numerous works on verb second phenomena in Germanic languages also contribute to the study of verb raising as it relates to inflectional morphology.

It should be noted in this connection that in the great majority of cases of European verb raising languages, the result of verb raising can be readily detected from the surface position of finite verbs. For instance, the position of a finite verb is clearly marked by its relative order with respect to adverbs and negation in languages like English or French. By contrast, in Japanese, which is a strict head-last language, the existence of verb raising is not overtly manifested at all, i.e., it is always a case of “string vacuous” movement.⁷

Although earlier work on Japanese syntax often assumes “predicate raising” transformations, they are postulated just for the purpose of deriving surface/phonetic representations of complex predicates. This is because transformations are primarily motivated for deriving surface structure, which serves as an input for phonetic interpretation in the standard theory. In more recent frameworks in which the power of transformations is severely restricted, phonological/morphological reasons are not sufficient in motivating syntactic verb raising, because Morphological Merger is also available for deriving the correct phonological/morphological structures of complex predicates.⁸ Thus, many proposed arguments for the existence of “string vacuous” V-to-T raising in Japanese attempt to show either (i) that the

⁷ The V-to-T raising in Germanic SOV languages can be taken as an instance of string vacuous verb raising akin to the Japanese case. However, the situation in these languages is different from the case of Japanese in that a subsequent verb raising to C makes visible the effect of the V-to-T raising. See Johnson (1994), Vikner (1995), Zwart (1997), and Roberts (2001) for an overview of verb raising in Germanic languages.

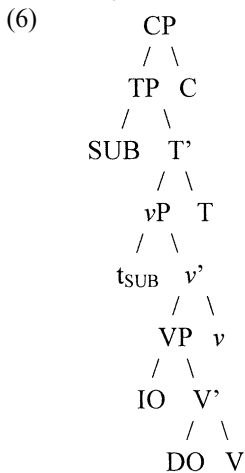
⁸ For related discussions on English verbal morphology, see Halle and Marantz (1993), Lasnik (1995), and Bobaljik (1995), among others.

remnant of V-to-T movement forms a syntactic constituent or (ii) that V-to-T raising has some sort of semantic effect. Otani and Whitman (1991) is a pioneering work of this type. They argue that the remnant of V-to-T movement undergoes VP ellipsis, and as a result of this, various apparent null-argument structures show the properties of VP ellipsis in Japanese. Hoji (1998c), however, argues against Otani and Whitman's (1991) claim, by demonstrating that the reading obtained in the alleged VP ellipsis constructions are in fact quite different from the readings associated with the VP ellipsis constructions in English.

While Hoji's arguments do not quite prove that Japanese lacks V-to-T raising, his refutation effectively reveals Otani and Whitman's argument to be inadequate (see also Koizumi 2000: 280 (note 1) for relevant discussion). Next, Koizumi (1995, 2000) takes over Otani and Whitman's idea that the remnant of V-to-T raising forms a syntactic constituent, and he presents a number of interesting empirical arguments in favor of the postulation of V-to-T raising in Japanese. Additional arguments are also presented for V-to-T raising, or V-to-*v* raising in more recent studies, such as Miyagawa (2001) and Kishimoto (2001), based on scope interpretation phenomena in Japanese. These arguments are unfortunately quite controversial because the primary data with respect to the scope interpretations do not seem to be solid enough. Sakai (2000a) actually reaches the opposite conclusion that general properties of scope interpretation of sentence final elements indicate that there is indeed no syntactic verb raising in Japanese. He also points out that the scope arguments presented in the above-mentioned works have inherent limitations because they cannot directly test the syntactic constituency in question. For these reasons, we will, in the following two subsections, focus on Koizumi's arguments and examine the validity of his analyses.

3.2. *String vacuous V-to-T raising*

Koizumi's (2000) argument for the existence of overt verb raising in Japanese goes as follows. Suppose Japanese clauses have the following structure (irrelevant details are omitted):



The subject is base-generated in the [Spec, *v*] position, and is later overtly raised into the [Spec, T] position, leaving its trace in the original site. Now notice that none of the subject (SUB), the indirect object (IO), and the direct object (DO) in (6) forms a constituent with the others. In other words, no combination of these elements alone constitutes a syntactic constituent. For example, the DO/IO combination is not a constituent, nor is the DO/IO/SUB combination. Rather, it is the whole VP or TP that is a constituent, containing {V, DO, IO} in the former case, and {V, DO, IO, *v*, *t*_{SUB}, T, SUB} in the latter case. Given the general assumption that syntactic operations can only affect syntactic constituents, it is then predicted that if there are syntactic processes that seem to operate on, say, the DO/IO combination or the DO/IO/SUB combination, they in fact operate on VP (or *v*P) or TP, respectively, even though verbs are not visible on the surface, i.e., the processes in question operate on the “remnant” VP (or *v*P)/TP headed by an empty verb (= the trace of a verb left by the string vacuous verb raising). Thus, to create a remnant VP (or *v*P)/TP, verbs have to have raised to T and C, respectively.

Koizumi argues that there are indeed three such processes in Japanese, (i) coordination, (ii) (pseudo-)cleft, and (iii) scrambling, thereby supporting the existence of string vacuous verb raising in the language.

There are several assumptions in Koizumi’s account that are not fully justified. For example, he assumes, following Nemoto (1993) and Miyagawa (2001), that the subject raises to [Spec, T] in the overt syntax of Japanese. However, it has been widely known since Fukui (1986) and Kuroda (1988) that certain properties of the subject in Japanese suggest that the subject in this language stays (or at least is able to stay) in its original position (either in [Spec, V] or [Spec, *v*]). Thus, unless the evidence is compelling, the assumption that the subject raises to [Spec, T] in Japanese is by no means innocuous and should not be put forward without careful discussion.

In fact, the assumption just mentioned is not really crucial for Koizumi’s argument, as he himself notes (cf. his note 4 and Appendix B). If the subject in Japanese indeed stays in its original position, then there will be no argument for overt verb raising to C, but the presented arguments for overt verb raising to T (or *v*) remain valid. The crucial assumption for Koizumi’s whole argument is that the constituency of the relevant element is due to verb raising and that the element in question is headed by the trace of a raised verb. This central assumption, however, is highly dubious. First, Koizumi claims that in the following example [cf. his (36)], the scrambled element is actually a VP headed by the trace of a raised verb. (NOM = Nominative, ACC = Accusative, DAT = Dative)

- (7) [_{VP} Hawai-de Masami-ni purezento-o *t*_V]_i John-ga [Kiyomi-ga *t*_i katta_V to]
 Hawaii-at -DAT present-ACC -NOM -NOM bought that
 omotteiru
 believe

Lit. ‘[A present for Masami in Hawaii] John believes that Kiyomi bought.’
 ‘John believes that Kiyomi bought a present for Masami in Hawaii.’

In (7), one could hypothesize that the whole VP (with an unpronounced verb trace) is fronted. However, it is systematically possible to scramble a “portion” of an alleged VP. Consider the following representative examples.

- (8) a. [Hawai-de Masami-ni] John-ga [Kiyomi-ga purezento-o katta to] omotteiru
 b. [Masami-ni purezento-o] John-ga [Kiyomi-ga Hawai-de katta to] omotteiru

In fact, it is possible to scramble any portion of the SUB-IO-DO sequence, as long as the legitimate parsing is somehow assured. Koizumi (2000) claims that examples like (8) are deviant (see his judgments for his (33c) and (33d)), but he also notes that “the acceptability of a sentence with multiple instances of scrambling will improve significantly if it is parsed in such a way that the scrambled elements form an intonation phrase” (Koizumi, 2000: 239) and cites the example (7) above (his (34 = 36)) as an instance of acceptable multiple scrambling. He does not discuss the acceptability of multiple scrambling which affects only a portion of the set of arguments/adjuncts of a predicate. We agree with Koizumi that (particularly in the case of multiple scrambling) a scrambled element must form an intonation phrase (to facilitate proper parsing), which in turn suggests that a scrambled element must form some sort of constituent. But we do not accept his conclusion that the constituent has to be a VP headed by the trace of a raised verb. The existence of examples like those in (8) strongly suggests that the fronted element, although it is a constituent, is not a VP, since it is simply impossible to form a VP by picking only a portion of the verb’s arguments/adjuncts, leaving the rest behind in the embedded clause.

Furthermore, there are numerous cases in Japanese where kinds of “constituents” that are not attested in languages like English are indeed observed, quite independently of the possibility of verb raising. To cite just one example (see also the discussion in Section 3.3.4 below), consider the following situation. Suppose the speaker A asks the question (TOP = Topic, GEN = Genitive, Q = Question Morpheme, PRT = Particle):

- (9) Kono kurasu no hitotati-wa dooyuu purezento-kookan-o
 this class-GEN people-TOP what kind gift-exchange-ACC
 kono aida-no paatii-de yatta no? Gutaitekini agete mite yo.
 the other day-GEN party-at did Q concretely list-try-PRT

‘What kind of gift-exchanges did the people in this class do at the party the other day? Please tell me some concrete cases.’

This question can be answered in various ways; for example, by uttering the following sentence. (CL = Classifier, CON = Conjunction Marker)

- (10) Taroo-ga [Hanako-ni mannenhitu-o 2-hon] to [Tomoko-ni tokei-o 2-tu],
 -NOM -to fountain pen-ACC -CL CON -to watch-ACC-CL
 sorekara, Ziroo-ga [Hanako-ni hon-o 1-satu] to [Tomoko-ni syasinsyuu-o 2-satu],
 and -NOM -to book-ACC-CL CON -to photo album-ACC-CL

ato, Hanako-mo [Taroo-ni syasinsyuu-o 1-satu] to [Ziroo-ni hon-o 1-satu] da-yo.
 and -also -to photo album-ACC-CL CON -to book-ACC-CLbe-PRT

Lit. ‘It was that Taro, [two fountain pens to Hanako] and [two watches to Tomoko], and Ziro, [one book to Hanako] and [two photo albums to Tomoko], and also Hanako, [one photo album to Taro] and [one book to Ziro].’
 ‘(The situation was such that:) Taro gave two fountain pens to Hanako, and two watches to Tomoko. Ziro gave a book to Hanako and two photo albums to Tomoko. And also, Hanako gave a photo album to Taro, and a book to Ziro.’

According to Koizumi’s analysis, all the bracketed phrases in (10) are VPs (or vPs) headed by the trace of a verb which has been raised in an across-the-board fashion. But it is simply impossible to come up with the relevant verb here. It is not clear which verb is to be stipulated; there is no candidate in (10), not even in the previous sentence (9).

Given these considerations (along with many others, some of which are to be discussed below), the reasonable conclusion is that verb raising has nothing to do with the constituency of the relevant elements. While we maintain with Koizumi that the relevant elements must be constituents of some sort, we conclude that they are not VPs/vPs and that the postulated verb raising has nothing to do with their constituency. Therefore, the data discussed in Koizumi (2000) cannot constitute compelling evidence for the existence of string vacuous V-to-T raising in Japanese.

In the remaining sub-sections, we examine more specific aspects of Koizumi’s arguments. Of his three arguments mentioned above ((i) coordination, (ii) pseudo-cleft, and (iii) scrambling), the argument based on coordination (or the connective particle constructions) seems most revealing and significant. Thus, we examine the properties of connective particles in Japanese separately later in Section 3.2.3, after a brief discussion of the other two arguments in Sections 3.2.1 and 3.2.2.

3.2.1. Pseudo-cleft constructions

Koizumi argues that the remnant of V-to-T raising can be the focus of a pseudo-cleft construction, as shown in (11). (NL = Nominalizer)

- (11) a. Mary-ga John-ni ringo-o 3-tu age-ta.
 -NOM -DAT apple-ACC-CL gave
 ‘Mary gave three apples to John.’
 b. Mary-ga age-ta no-wa [John -ni ringo-o 3-tu] da.
 -NOM gave NL-TOP [-DAT apple-ACC -CL] is
 Lit. ‘It is [three apples to John] that Mary gave.’
 c. [Op_i [SUB t_i V-v-T]] no-wa [v_P IO DO (3-CL) [v e]_i] da

In (11b), the indirect object *John-ni* ‘to John’ and the direct object *ringo-o* ‘apples’, along with the numeral quantifier *3-tu* ‘three’, are located in the focus position. Koizumi hypothesizes that (11b) has the schematic structure (11c), where elements in the focus position constitute a syntactic constituent co-indexed with the operator

in the topic phrase. Koizumi argues that the indirect and the direct object form a syntactic constituent, namely a remnant VP headed by the trace(s) of a verb, as a result of the string vacuous V-to-T movement that he postulates.

The validity of his argument depends crucially on the analysis of pseudo-cleft constructions presented above.⁹ However, at the present level of our understanding of this construction, it is still unclear whether the elements located in the focus position of pseudo-cleft constructions (the bracketed portion of (11b) above) must be a single constituent. Alternatively, we can analyze the structure as an instance of topicalization of nominalized clause as shown in (12).

- (12) a. Mary-ga age-ta no-wa [John-ni ringo-o 3-tu] da
 -NOM gave NL-TOP [-DAT apple-ACC -CL] is
 Lit. 'It is [three apples to John] that Mary gave.'
 b. [SUB t_j t_k age-ta]-no_i-wa IO_j DO_k 3-tu [s e]_i da

The representation in (12b) indicates that the topic part of the pseudo-cleft construction in (12a) is moved to the front of the sentence as an instance of topicalization.

Sakai (2000b, 2001) presents the same line of analysis for other closely related constructions in Japanese. He points out that the particle *-no* overtly marks the process of predicate nominalization, which has the effect of de-focusing the predicate. According to this analysis, nominalization by the particle *-no* plays an important role in predicate ellipsis phenomena in Japanese, as in (13).

- (13) a. Taroo-wa Hanako-ni ringo-o age-ta.
 -TOP -DAT apple-ACC gave
 'Taro gave an apple to Hanako.'
- Kumiko-ni-mo da.
 -DAT-also is
 '(Taro gave an apple) To Kumiko, too.'
- b. Taroo-wa dareka-ni ringo-o age-ta.
 -TOP someone-DAT apple-ACC gave
 'Taro gave an apple to someone.'
- Demo, dare-ni da-ka wakara-nai.
 but whom-DAT is-Q know-not
 'But I don't know/it is unknown to whom.'

Sakai argues that so-called pseudo-gapping constructions such as (13a), discussed by Kim (1997) and Kim and Sohn (1998) (or stripping by Hoji, 1997), or sluicing constructions like (13b), analyzed by Takahashi (1994), Nishiyama et al. (1996), and

⁹ See also Kuwabara (1996) for an analysis of cleft constructions similar to Koizumi's.

Fukaya and Hoji (1999), are derived by the deletion of nominalized predicates, as depicted in (14).

- (14) a. Kumiko-ni-mo [~~ringo o age ta~~]_{no} da.
 -DAT-also is
 ‘(Taro gave an apple) To Kumiko, too.’
- b. Demo, dare-ni [~~ringo o age ta~~]_{no} da-ka wakara-nai.
 but whom-DAT is-Q know-not
 ‘But I don’t know/it is unknown to whom.’’

Sakai argues that this analysis is in fact supported by the theory of focus of negation/question sentences proposed by Kuno (1983) and Takubo (1985). These authors observe that the unmarked focus of negation/question is assigned to the predicate in Japanese, and that the predicate must be nominalized by the particle *-no* if the other (non-predicate) elements in a sentence are to be assigned a focus interpretation. Predicate nominalization, therefore, has an effect of defocusing the predicate in Japanese. Since deletion is not allowed for focused elements, as pointed out by Kuno (1978), predicate nominalization applies and defocuses a predicate, thereby making the predicate available to the ellipsis process. The predicate nominalization analysis has a clear advantage over alternative analyses in accounting for the obligatory presence of the copula *-da* in (14)¹⁰: Copula is required because there is a nominalized predicate before ellipsis applies. On the other hand, the obligatory presence of the copula *-da* remains a mystery in other approaches.

The pseudo-cleft constructions can be regarded as a sub-case of predicate nominalization constructions, i.e., if the nominalized predicates undergo topicalization instead of deletion, we obtain the pseudo-cleft constructions. The relationship between these constructions is schematically represented in (15).

- (15) a. Taroo-mo ringo-o tabe-ta.
 -also apple-ACC ate
 ‘Taro also ate apples.’
- Predicate Nominalization → Taroo-mo ringo-o tabeta-no da.
 -also apple-ACC ate-NL is
- b. Taroo-mo ringo-o tabeta-no da.
 -also apple-ACC ate-NL is
- Predicate Ellipsis → Taroo-mo [~~ringo o tabeta no~~]_{no} da.
 -also apple-ACC ate-NL is
- Predicate Topicalization → [Ringo-o tabe-ta-no]_i-wa Taroo-mo t_i da.
 apple-ACC ate-NL-TOP -also is

¹⁰ The presence of *-ka* seems to have the function of saving the structure without *-da*. Thus, example (14b) [as opposed to (14a)] is only a little bit degraded (but not totally ungrammatical) if there is no *-da*.

Given this analysis of pseudo-cleft constructions, it is not surprising at all that elements in the focus position do not form a syntactic constituent. They are in fact remnants of predicate topicalization. The following example provides an additional piece of support for this analysis. (AUX = Auxiliary)

- (16) a. Taroo-ga Hanako-ni Russell-no hon-o yomu-yooni
 -NOM -DAT -GEN book-ACC read-AUX
 nessin-ni susume-ta
 earnestly recommended
 ‘Taro earnestly recommended Hanako to read Russell’s books.’
- b. Taroo-ga yomu-yooni nessin-ni susumeta-no-wa
 -NOM read-AUX earnestly recommended-NL-TOP
 Russell-no hon-o Hanako-ni da.
 -GEN book-ACC -DAT is
 Lit. ‘It is Russell’s books, to Hanako, that Taro earnestly recommended to read.’

Both the matrix argument *Hanako-ni* and the embedded argument *Russell-no hon-o* are located in the focus position of (16b). In order to make these elements form a constituent by V-to-T raising, the embedded predicate would have to raise to the position of the matrix T. However, the embedded predicate does not raise to the matrix T, as clearly shown by the intervening adverbial expression *nessin-ni*. Elements in the focus position therefore cannot be a constituent even if the V-to-T raising is assumed. These kinds of examples abound, and they clearly indicate that elements in the focus position of pseudo-cleft constructions are not necessarily a single syntactic constituent, or at the very least, that the alleged V-to-T raising has nothing to do with their “constituency.” Therefore, Koizumi’s argument based on pseudo-cleft constructions cannot be a convincing argument for string vacuous V-to-T raising in Japanese.

3.2.2. Remnant scrambling

Another argument presented by Koizumi is concerned with scrambling of a remnant VP (see our discussion in Section 3.2 above). Koizumi first points out that application of more than one long-distance movement from within the same clause violates the Subjacency Condition as it is formulated by Chomsky (1986) and Lasnik and Saito (1992). However, Japanese allows so-called multiple scrambling out of a single clause, as illustrated in the following examples.

- (17) a. Hanako-ga Taroo-ga Zi-roo-ni sono hon-o watasi-ta to omotte-iru.
 -NOM -NOM -DAT that book-ACC handed that think
 ‘Hanako thinks that Taro handed that book to Ziro.’

- b. Ziroo-ni_i sono hon-o_j Hanako-ga Taroo-ga t_i t_j watasi-ta to omotte-iru.
 -DAT that book-ACC -NOM -NOM handed that think

In (17b), both the direct object and the indirect object of the embedded clause are scrambled to the beginning of the matrix clause, and the sentence is still acceptable. Koizumi suggests that the possibility of multiple scrambling can be readily explained if we assume that the fronted elements in the multiple scrambling cases actually form a single constituent, a “remnant” VP headed by the trace of a raised verb. In support of this analysis, he points out that certain conditions are imposed on multiple long distance scrambling (see our discussion in Section 3.2). Thus, multiple scrambling is degraded if scrambled phrases do not form an intonation phrase, and floated numeral quantifiers cannot be “scrambled” if they are not accompanied by the object they are associated with.¹¹ (Judgments are Koizumi’s. See note 12.)

- (18) a. Taroo-ga Hanako-ga hon-o 3-satu katta to omotte-iru.
 -NOM -NOM book-ACC -CL bought that think
 ‘Taro thinks that Hanako bought three books.’
 b. *3-satu_i Taroo-ga Hanako-ga hon-o t_i katta to omotte-iru.
 -CL -NOM -NOM book-ACC bought that think
 c. Hon-o_i 3-satu_j Taroo-ga Hanako-ga t_i t_j katta to omotte-iru.
 book-ACC-CL -NOM -NOM bought that think

Koizumi points out that the ungrammaticality of example (18b) is naturally explained if multiple long distance scrambling is actually an instance of scrambling of a remnant VP. The remnant VP is scrambled as a whole in (18c), whereas only a portion of the VP is scrambled in (18b), leading to the ungrammaticality (but see our discussion in Section 3.2).

Koizumi’s argument based on scrambling is rather theory-internal and hinges on various (factual and theoretical) assumptions, including a particular interpretation of the Subjacency Condition. Furthermore, although the requirement that a scrambled element be a constituent seems well-grounded, it is highly questionable that the constituent is a (remnant) VP, as we discussed in Section 3.2 above. An alternative view, which dates back to Fukui (1986) and which, in our view, still seems plausible, is that Japanese is equipped with a “free merger” mechanism which, subject to other syntactic and interpretive constraints, freely merges (or “adjoins” in the older terms used in Fukui’s earlier works) an element with an existing element, creating a new constituent. Thus, Japanese phrases are “never closed,” to use Fukui’s (1986) terms. Applications of this “free merger” mechanism are severely restricted in a language like English, perhaps due to the existence/properties of functional categories. In other words, Japanese, thanks to the lack of agreement-inducing functional heads, makes maximal use of Merge, made available by UG. Complex constituents such as *hon-o 3-satu* [in (18c)] and *Hawai-de Masami-ni* [in (8a)] are created by Merge (or

¹¹ Koizumi attributes this observation to Miyagawa (1989).

“pair-Merge,” i.e., “adjunction”), and then undergo other processes like scrambling.¹² In fact, Sohn (1994) argues that adjunction of an argument to another argument is possible in languages like Korean and Japanese. If this type of adjunction to arguments is possible, the moved constituent in the relevant examples would be an NP instead of a VP, having no bearing on the verb raising issue.¹³

Summarizing so far, Koizumi’s (2000) arguments based on cleft and scrambling constructions are not convincing enough to draw any conclusion regarding the existence of string vacuous V-to-T raising in Japanese. In the next subsection, we examine his argument based on coordination.

3.2.3. Coordination and connective particles

In Japanese, a set of particles are used for conjunctive or disjunctive connections of more than one element. Koizumi presents a most direct and interesting argument for the postulated string vacuous V-to-T raising based on the structure created by one such connective particle.

Koizumi (1995, 2000) points out that a remnant VP can be connected by one of these particles, *-to*. Consider first the following examples in English and Japanese.

(19) * Mary three apples and Susan two bananas, John gave for breakfast.

(20) [Hanako-ni ringo-o 3-tu] to
 -DAT apple-ACC -CL CON

[Kumiko-ni banana-o 2-hon] Taroo-ga age-ta.
 -DAT banana-ACC -CL -NOM gave

Lit. ‘Three apples to Hanako and two bananas to Kumiko, Taro gave.’

The ungrammaticality of example (19) indicates that the DO/IO combination, *Mary three apples* or *Susan two bananas*, does not form a constituent, because coordination is allowed only if coordinated elements are syntactic constituents (of

¹² We maintain that the deviance of examples like (18b) is due to the difficulty of associating the fronted numeral quantifier in the matrix clause and the noun phrase in the embedded clause that it is supposed to modify, rather than due to the “non-constituency” of the fronted elements. While the exact mechanism of this interpretive association is yet to be worked out, it is clear that the nature of the deviance exhibited by examples like (18b) is not caused by purely syntactic factors such as constituency. In fact, we would not assign a “*” to (18b) (although it is certainly hard to associate the two elements in this particular example), and lexical adjustments would surely improve the acceptability of the example. Note also that no arguments have ever been put forth, to the best of our knowledge, that a “fronted” numeral quantifier such as *3-satu* in (18b) has been actually “moved/scrambled” from the trace position in the embedded clause. Instead, the numeral quantifier could have been simply merged at the beginning of the sentence, and then submitted for interpretation. This remark applies to alleged “scrambling” of non-arguments generally.

¹³ Koizumi takes up Sohn’s analysis and argues against it (Koizumi, 2000: 248–257). Sohn’s work is based on Saito’s (1994) adjunction analysis of “LF saving effect,” and is mainly concerned with the distribution of *wh*-phrases. Koizumi’s criticism is directed toward this particular aspect of an “adjunction” analysis, and it does not argue against the general “free merger” view advocated by Fukui (1986) and subsequent works.

the same type), as originally pointed out by Chomsky (1957). In (20), by contrast, the DO/IO combinations *Hanako-ni ringo-o 3-tu* and *Kumiko-ni banana-o 2-hon* can be connected by the particle *-to* and the resulting structure is in fact grammatical.¹⁴

Koizumi argues that the possibility of such constituents in Japanese indicates the existence of string vacuous V-to-I raising in the language. As we have briefly discussed in Section 3.2, he claims that V is moved to the position of T by across-the-board V-to-T raising, as illustrated in (21) below.

- (21) Taroo-ga [Hanako-ni ringo-o 3-tu t_V] to
 -NOM -DAT apple-ACC -CL CON
- [Kumiko-ni banana-o 2-hon t_V] age_V -ta.
 -DAT banana-ACC -CL give -PAST
- Lit. 'Taro gave three apples to Hanako and two bananas to Kumiko.'

In (21), the DO/IO combinations accompanied by a numeral quantifier ("*Hanako-ni ringo-o 3-tu*" and "*Kumiko-ni banana-o 2-hon*") form a constituent headed by the trace of a raised verb, i.e., a remnant VP. It is these remnant VPs, according to Koizumi, that are connected by the particle *-to*.

Koizumi argues that the adjunction-to-argument analysis has difficulty in handling the connective particle constructions, since it is usually not possible to move elements into coordinated constituents. He also points out that this type of connective construction can be scrambled or clefted as illustrated by the following examples, indicating that the DO/IO combinations constitute syntactic constituents.

- (22) a. Taroo-ga [Hanako-ni ringo-o 3-tu] to
 -NOM -DAT apple-ACC -CL CON
- [Kumiko-ni banana-o 2-hon] age-ta.
 -DAT banana-ACC -CL gave
- Lit. 'Taro gave three apples to Hanako and two bananas to Kumiko.'
- b. [Hanako-ni ringo-o 3-tu to Kumiko-ni banana-o 2-hon]_i
 -DAT apple-ACC -CL CON -DAT banana-ACC -CL
- Taroo-ga t_i age-ta.
 -NOM gave
- c. Taroo-ga age-ta-no-wa
 -NOM gave-NL-TOP
- [Hanako-ni ringo-o 3-tu to Kumiko-ni banana-o 2-hon] da.
 -DAT apple-ACC -CL CON -DAT banana-ACC -CL is

¹⁴ The presence of numeral quantifiers seems to have an important factor in legitimizing these coordinate structures. Koizumi (1995, 2000) attributes this effect to the morphological properties of connective particles which require a nominal host.

Lit. ‘It is [three apples to Hanako and two bananas to Kumiko] that Taro gave.’

Putting these observations together, Koizumi concludes that there is sufficient evidence for the existence of string vacuous V-to-T raising in Japanese.

Koizumi’s argument offers quite interesting observations on some of the properties of connective particle constructions. However, it seems premature to draw any definite conclusion from his argument with respect to the existence of string vacuous V-to-T raising in Japanese. In the following subsection, we point out that Koizumi’s analysis in fact faces serious problems if we consider a broader range of data from connective particle constructions in Japanese.

3.3. Problems with Koizumi’s analysis of connective constructions

Despite its initial appeal, Koizumi’s analysis faces at least four serious problems, apart from the general problem that we discussed in Section 3.2. We go over these problems in this subsection and show that Japanese connective particle constructions exhibit rather peculiar properties.

3.3.1. The particle *-mo* ‘also’

The Japanese language has another kind of connective particle, *-mo* ‘also’ as illustrated in (23) below.¹⁵

- (23) a. Taroo-ga ringo-to banana(-to)-o tabe-ta.¹⁶
 -NOM apple-CON banana (-CON)-ACC ate
 ‘Taro ate apples and bananas.’
- b. Taroo-ga ringo-mo banana-mo tabe-ta.
 -NOM apple-also banana-also ate
 ‘Taro ate apples and bananas.’

In these examples, both the particle *-to* and the particle *-mo* play a role in connecting two constituents. Despite its functional similarities to the particle *-to*, *-mo* cannot connect the direct and indirect objects. Observe the following examples.¹⁷

¹⁵ The study of the particle *-mo* has a long history in the generative study of Japanese. See Kuroda (1965, 1970) for a detailed analysis of syntactic and/or semantic properties of the particles *-mo* ‘also,’ *-dake* ‘only,’ and *-sae* ‘even.’ See also Nishigauchi (1990), Kawashima (1994), Aoyagi (1998a, b), among others, for more recent developments on the analysis of these elements.

¹⁶ As can be seen from these examples, there are certain differences between these particles with respect to their distributional properties. For instance, the occurrence of the particle *-to* after the second conjunct is optional, whereas the second occurrence of *-mo* is obligatory.

¹⁷ There is another particle *-mo* ‘as much as,’ which is homophonous with the particle *-mo* ‘also’ under discussion. The example (24a) is grammatical if the particle *-mo* in these examples is taken to mean ‘as much as.’ The particle *-mo* in this sense has nothing to do with coordination, as shown by the fact that it can be used in a sentence like *Taroo-ga gohan-o 4-hai mo tabeta* ‘Taro ate as much as four bowls of rice,’ where there is simply no coordination structure.

- (24) a. *Taroo-ga [Hanako-ni ringo-o 3-tu] mo
 -NOM -DAT apple-ACC -CL also
 [Kumiko-ni banana-o 2-hon] mo age-ta.
 -DAT banana-ACC -CL also gave
 Lit. ‘Taro gave three apples to Hanako and two bananas to Kumiko.’
- b. Taroo-ga [Hanako-ni ringo-o 3-tu age] mo
 -NOM -DAT apple-ACC -CL gave also
 [Kumiko-ni banana-o 2-hon age] mo si-ta.
 -DAT banana-ACC -CL give also did
- c. Sono hi-ni Taroo-wa [hon-o 5-satu yomi] mo
 that day-on -TOP book-ACC -CL read also
 [sake-o 4-hon nomi] mo si-ta.
 Sake-ACC -CL drink also did
 ‘On that day, Taro read five books and (also) drank four bottles of sake.’

The particle *-mo* shows rather striking differences in these examples. First, coordination by *-mo* is not constrained by the categorial status of the coordinated elements. Thus, as in (24b), it is possible to combine two (or more) VPs if the verbal stem is repeated in the second conjunct. Furthermore, the verbs of the connected VPs need not be identical, as illustrated by example (24c), which we take to be a case of genuine VP-coordination where verbal stems clearly stay in their original positions. Now it is not at all clear how Koizumi’s analysis can be extended to these properties of *-mo*, since in his account, all of these cases are on a par with the cases of the particle *-to*, i.e., they are uniformly analyzed as cases of “VP-coordination.”

3.3.2. The particle *-katu* ‘and’

Japanese also has a set of elements which are used exclusively for predicate coordination. The particle *-katu* ‘and’ is one such element. Consider the following examples.

- (25) a. Taroo-ga [zyuusu-o nomi] katu [okasi-o tabe] ta.
 -NOM juice-ACC drink and cake-ACC eat PAST
 ‘Taro drank (a glass of) juice and ate (a piece of) cake.’
- b. Taroo-ga [Hanako-ni ringo-o 3-tu age] katu
 -NOM -DAT apple-ACC -CL give and
 [Kumiko-ni banana-o 2-hon age] ta.
 -DAT banana-ACC -CL give PAST
 Lit. ‘Taro gave three apples to Hanako and gave two bananas to Kumiko.’

In (25a), the particle *-katu* connects the direct object and the verbal stem. Example (25b) is a case in which the direct object, the indirect object, and the verbal stem are connected by *-katu*. The meaning of these examples clearly indicates that a single

past tense morpheme takes both of the two VPs as a complement, which in turn suggests that the verbal stem stays within the VPs connected by the particle *-katu*. If string vacuous V-to-T raising is obligatory, as in the case of European languages, it is rather surprising that the verbal stems stay within VPs in this kind of constructions.¹⁸ This poses another problem for Koizumi's claim that verbs in Japanese (obligatorily) raise into T (and then to C). As we noted in the preceding subsection, the particle *-mo* also connects two VPs with the verbal stem staying inside the VPs. Taken together, these cases provide an extremely serious problem for Koizumi's string vacuous V-to-T raising analysis.

3.3.3. Case particles

As we have seen, Koizumi's analysis crucially assumes that the categorial status of constituents connected by the particle *-to* is VP. However, as the following examples indicate, case particles can be assigned to the connected constituents.¹⁹

- (26) a. Taroo-ga [Hanako-ni ringo 3-tu to
 -NOM -DAT apple -CL CON

Kumiko-ni banana 2-hon (to)]-o age-ta.
 -DAT banana -CL (CON)-ACC gave

Lit. 'Taro gave [three apples to Hanako] and [two bananas to Kumiko].'

- b. [Tookyoo-kara daigakusei 3-nin to
 -from college student -CL CON

Oosaka-kara kookoosei 2-ri (to)]-ga ki-ta.
 -from high school student -CL (CON)-NOM came

Lit. '[From Tokyo three college students] and [from Osaka two high school students] came.'

¹⁸ It is not the case that the verbal stem stays within VP in order to satisfy the morphological property of *-katu*. In the following examples, the verbal stems stay within VP quite independently of the morphological properties of the particle *-katu*.

- (i) Taroo-ga syokudoo-o pikapika-ni katu daidokoro-o seiketu-ni soozu-si-ta.
 -NOM dining room-ACC shining and kitchen-ACC clean cleaned
 'Taro made the dining room shiny and the kitchen clean.'
- (ii) Taroo-ga syokudoo-o pikapika-ni-soozu-si katu daidokoro-o seiketu-ni soozu-si-ta.
 -NOM dining-ACC shiny-clean and kitchen-ACC clean cleaned
 Lit. 'Taro cleaned the dining room shiny and cleaned the kitchen clean.'

The example (i) indicates that an element like *pikapika-ni* 'shining(ly)' can be followed by *-katu*. The example (ii) shows that a verb (*soozu-suru* 'clean') need not raise to T even in this construction.

¹⁹ Fukushima (2001) independently observes this fact and argues that the connected constituents are NPs rather than VPs. He further proposes that these NP constituents are base-generated as such and that the correct interpretations of these constructions can be obtained by the semantic rules he postulates. We leave a close examination of possibilities of this kind for future research.

There are strict restrictions on the assignment of case particles in Japanese. In particular, the nominative particle **-ga** can be assigned only to nominal categories (noun phrases, postpositional phrases, and some instances of clausal projections headed by a nominal element such as **-ka** ‘Q’; see Fukui (1986) for more detailed discussion), and the accusative particle **-o** can only be assigned to noun phrases (and some clausal projections headed by a nominal head). There is simply no attested case in which these case particles are assigned to a VP. Thus, the grammaticality of the examples in (26) strongly suggests that the phrases connected by the particle **-to** are not VPs, but rather, some sort of nominal constituents.

3.3.4. Infinitival complements and NP complements

Finally, the particle **-to** can connect elements which appear not to be syntactic constituents in a wide variety of cases. They are not limited to the contexts of V-to-T raising, as shown in the following examples.

- (27) a. Taroo-ga [Hanako-ni ringo-o 3-tu] to
 -NOM -DAT apple-ACC -CL CON

[Kumiko-ni banana-o 2-hon] katte-kuru-yooni (teinei-ni) tanon-da.
 -DAT banana-ACC -CL buy-bring-AUX (politely) asked

Lit. ‘Taro (politely) asked Hanako to buy and bring three apples and Mayumi to buy and bring two bananas.’

- b. Hahaoya-ga [Hanako-ni ringo(-o) 3-tu] to
 mother-NOM -DAT apple(-ACC) -CL CON

[Kumiko-ni banana(-o) 2-hon]-no oyatu-o age-ta.
 -DAT banana(-ACC) -CL -GEN snack-ACC gave

‘Their/someone’s mother gave a snack of three apples to Hanako and (a snack of) two bananas to Kumiko.’

In (27a), the particle **-to** connects *Hanako-ni*, an argument of the matrix verb *tanomu* ‘ask’, and *ringo-o 3-tu* ‘three apples’, which is the direct object of the embedded predicate *katte-kuru* ‘buy-bring’. These two arguments could not possibly form a constituent even if the embedded verb string-vacuously raised to the embedded T.²⁰ Note that the raising of the embedded V to the matrix T is highly unlikely, given the fact that adverbial expressions such as *teinei-ni* ‘politely’ can freely intervene between the two predicates. In (27b), the particle connects an argument of the verb *ageru* ‘give’ (viz., *Hanako-ni* and *Kumiko-ni*) and an argument of the noun *oyatu* ‘snack’ (viz., *ringo(-o) 3-tu* and *banana(-o) 2-hon*). In this type of example,

²⁰ Koizumi (1995, 2000) presents an example which indicates that the matrix argument and the embedded argument cannot be connected by **-to** if the embedded clause is finite. But this restriction does not hold in the case of infinitival complements. We return to the case of finite subordinate clauses in Section 4.

verb raising is simply irrelevant and there is no way to form a constituent containing one argument from a predicate and another from a noun.

3.4. Summary and conclusion

In this section, we have examined in detail Koizumi's (2000) arguments for the existence of string vacuous V-to-T (to C) raising in Japanese. We first pointed out that his arguments are based on certain assumptions that may not be warranted. Specifically, all of his arguments hinge on the central assumption that certain "syntactic" processes operate on a syntactic constituent, and that the constituent in question is a VP. Koizumi argues that there are at least three such processes in Japanese, (i) coordination, (ii) (pseudo-)clefts, and (iii) scrambling. We have examined each case closely and have shown that in all of these cases, Koizumi's analysis faces serious problems. In particular, we have argued that there is mounting evidence that it is not a VP, but rather a certain nominal category, that undergoes the processes Koizumi discusses. This result effectively nullifies his arguments for the existence of string vacuous V-to-T raising in Japanese.

It has also been shown in our discussion that there are even cases in which verb raising should not be postulated. For example, if we deny the existence of syntactic V-to-T raising, the impossibility of connecting the direct and the indirect object by the particle *-mo* is expected, because these elements do not form a syntactic constituent. The presence of a verbal stem within a VP in the case of connection by *-katu* is also not surprising at all, if we assume that the V-T complex is formed in the "phonological (PF) component" as a result of Morphological Merger in a theory which does not postulate string vacuous V-to-T raising in the narrow syntax of Japanese.

Thus, we must conclude that Koizumi's arguments for the presence of overt verb raising in Japanese do not hold, and that there is still no compelling evidence for overt verb raising in the language. In the absence of such supporting evidence, we should continue to assume that there is no overt verb raising, and, given the Visibility Guideline introduced in Section 2, that there is no active functional head T in Japanese.

Having established these points, we will go on in the following section to briefly explore alternative analyses of the phenomena Koizumi discusses, particularly the coordination cases involving *-to*.²¹

4. A reduction analysis and constituencies in the PF component

In this section, we present an alternative account for connective constructions with the particle *-to*, based on the idea that these constructions are formed by PF

²¹ For the other two cases (viz., the cases of scrambling and pseudo-clefts), we have already suggested (see Section 3.2.2) an alternative analysis of unusual constituencies in Japanese in terms of the "free merger/adjunction" mechanism of Fukui (1986).

operations.²² Specifically, we propose that (i) they involve reduction/deletion of identical predicates and (ii) a string of elements is reanalyzed into a constituent by Phrase-Level Merger in the PF component.

A considerable number of recent works on conjunction/disjunction structure (Wilder, 1997; Schwartz, 1999, among many others) propose the so-called “reduction analysis,” according to which a set of elements in one of the conjuncts can be deleted under certain identity conditions. In the reduction analysis, a set of elements which do not form a syntactic constituent appear to form a constituent connected by conjunction/disjunction markers in the surface form. Koizumi (1995, 2000) considers the reduction analysis for structures associated with *-to*, which claims, when applied to this construction, that examples like (20) above can be derived from the deletion of identical predicates as depicted in (28).

- (28) Taroo-ga [Hanako-ni ringo-o 3-tu ~~age~~] to
 -NOM -DAT apple-ACC -CL give CON
 [Kuniko-ni banana-o 2-hon age]-ta.
 -DAT banana-ACC -CL give-PAST
 Lit. ‘Taro gave three apples to Hanako and two bananas to Kumiko.’

Koizumi rejects the reduction analysis on the basis of the fact that the constituent connected by the particle *-to* can be scrambled or clefted, as shown in (29) below.

- (29) a. [Hanako-ni ringo-o 3-tu to Kumiko-ni banana-o 2-hon]_i
 -DAT apple-ACC -CL CON -DAT banana-ACC -CL
 Masao-ga [Taroo-ga t_i age-ta]to it-ta.
 -NOM -NOM gave that said
 Lit. ‘Three apples to Hanako and two bananas to Kumiko, Masao said that Taro gave.’
- b. Taroo-ga age-ta no-wa [Hanako-ni ringo-o 3-tu] to
 -NOM gave NL-TOP [-DAT apple-ACC -CL] CON
 Kumiko-ni banana-o 2-hon] da.
 -DAT banana-ACC -CL is
 Lit. ‘It is [three apples to Hanako] and [two bananas to Kumiko] that Taro gave.’

²² By “PF” (or the “phonological component”), we mean the components of grammar “on the PF side,” i.e., the set of operations applying after TRANSFER/Spell-Out (cf. Chomsky, 2001a, b), including (part of) this operation itself, which eventually lead the derivation to the interface PF expression. There are different sub-components of the “phonological component,” with various distinct properties, but we put side the details here and continue to use the term “PF” to refer to the collection of operations which are performed outside of the narrow syntax.

Here, we focus on the scrambling construction in (29a), because we have already argued in Section 3.3 that elements in the focus position of pseudo-cleft constructions (29b) need not be a single constituent. The fronted elements in (29a) do not form a syntactic constituent of the usual kind according to the reduction analysis. The constituent connected by the particle *-to* contains the verbal stem *age-* in the structure represented in (28). Given the standard assumption that only constituents can undergo movement, the reduction analysis should be rejected, Koizumi argues.

Recent developments of the theory of scrambling, however, enable us to take a fresh look at the situation. Ueyama (1999) and Hayashishita (2000) (cf. also Saito, 1989) claim that some instances of scrambling have no effect in LF and thus should be analyzed as a PF operation.²³ If their analysis is tenable, the elements fronted by scrambling need not be a constituent of the usual kind during the narrow syntax. Marantz (1984, 1988, 1989) and Halle and Marantz (1993) propose that there is an operation called Morphological Merger, which combines two morphological units into a single unit in the PF component. We propose that the same operation applies to a sequence of phrase-level units and reanalyzes them into a single constituent in the PF component. After the Phrase-Level Merger, or “PF reanalysis,” scrambling applies to the reanalyzed constituent and a structure like (29a) is derived in the PF component.²⁴

The idea that constituent structures are not exactly identical in the narrow syntax and in the PF component is also supported by the recent development of the theory of linear order advanced by Kayne (1994), Chomsky (1995), and Fukui and Takano (1998), among others. These works assume that constituent structures in the syntactic component (narrow syntax and LF) do not contain information on the linear (temporal) order of constituents [but see Saito and Fukui (1998) for an opposing view; see also Fukui (2001) for a general overview on the issue of linear order in phrase structure].

The linearization algorithm determines the surface order of constituents based on their structural properties. In other words, constituent structures based on hier-

²³ The idea that scrambling is a PF operation is not at all new. Ross (1967) originally proposes scrambling as a rule in the stylistic (i.e., part of the PF) component [see Inoue (1978) for a similar view]. There have been occasional “PF analyses of scrambling” proposed in the literature (see, for example, Chomsky, 1995: Chapter 4, Section 5.7.3.). On the other hand, Harada (1977) and Saito (1985), among others, present empirical evidence that at least some instances of scrambling involve movement in the narrow syntax. However, as far as we are aware, no strong argument has been presented for the claim that scrambling *must* be exclusively a (narrow) syntactic operation. One possible objection to the PF analysis of scrambling comes from the fact (which, incidentally, is by no means clear and which requires much closer examination) that scrambling appears to obey at least some of the island constraints. However, the status of island constraints is far from clear in the current framework, and there is even a possibility that some of these constraints are operative in the PF component. See Agbayani (1998) and Hoshi (2000) for observations that PF operations obey island constraints. See also Fukui (1996) and Kasai and Takahashi (2001) for arguments that the Subjacency Condition applies in PF.

²⁴ The idea of PF reanalysis (or “readjustment rules” in the phonological component) has numerous predecessors in the history of generative grammar. See Chomsky and Halle (1968), Chomsky (1977), Hornstein and Weinberg (1981), and Kayne (1981), among many others.

archical dependencies without linear order are re-interpreted in the PF component as constituent structures based primarily on linear order with little or no hierarchical structure. It is thus not at all surprising that a string of elements which does not form a constituent in the narrow syntax is reanalyzed during the process of linearization.

As an operation in the PF component, Phrase-Level Merger/PF reanalysis must satisfy conditions on the linear order of constituents. Although in-depth explorations into the nature of PF derivations are a topic for future research, we can assume that at least the following two conditions hold: A string of elements is a PF constituent only if (i) they are string adjacent, and (ii) the derived constituent complies with the head parameter. Notice that these conditions are fulfilled in the following structure only if identical elements including the predicate *age-* ‘give’ are deleted and the derived constituent is headed by the nominal *3-tu* ‘three’ or *2-hon* ‘two’.

- (30) Taroo-ga [_{VP} Hanako-ni ringo-o 3-tu ~~age~~] to
 -NOM -DAT apple-ACC -CL give CON
- [_{VP} Kumiko-ni banana-o 2-hon age]-ta.
 -DAT banana-ACC -CL give-PAST
- Taroo-ga [_{NP} Hanako-ni ringo-o 3-tu ~~age~~] to
 -NOM -DAT apple-ACC -CL give CON
- [_{NP} Kumiko-ni banana-o 2-hon] age-ta.
 -DAT banana-ACC -CL give-PAST

The case assignment pattern shown in (31) strongly supports the PF reanalysis account, because case particles are assigned to the reanalyzed constituents.

- (31) Taroo-ga [_{VP} [_{VP} Hanako-ni ringo 3-tu ~~age~~] to
 -NOM -DAT apple -CL give CON
- [_{VP} Kumiko-ni banana 2-hon age]-ta]
 -DAT banana -CL give-PAST
- Taroo-wa [_{NP} [_{NP} Hanako-ni ringo 3-tu ~~age~~] to
 -TOP -DAT apple -CL give CON
- [_{NP} Kumiko-ni banana 2-hon] (to)]-o age-ta.
 -DAT banana -CL (CON)-ACC give-PAST

Notice that the case particle *-o* is assigned to the whole string of elements connected by the particle *-to*, i.e., *Hanako-ni ringo 3-tu to Kumiko-ni banana 2-hon (to)*. As we discussed above (Section 3.3.3), Koizumi’s analysis cannot explain this fact, since coordinated elements are remnant VPs under his analysis and the case particle *-o* can

only be assigned to a nominal element, never to a VP. Given the PF reanalysis just proposed, we can now claim that case particles are assigned to the reanalyzed NPs, along the lines of morphological case marking originally proposed by Kuroda (1965, 1978, among others).

The advantage of the PF reanalysis account becomes even more evident if we consider the other problematic cases for Koizumi's analysis. First, the PF reanalysis account naturally explains why these "unusual" constituents cannot be connected by the connective particle *-mo*. The particle *-mo* differs from the particle *-to* in that it carries clear quantificational force and must therefore be present in the LF representation, whereas the particle *-to* has no comparable semantic content. Thus, coordinate structures with the particle *-mo* have to be created in the narrow syntax. The DO/IO combinations, however, do not form a "real" constituent in the narrow syntax. The structure is thus ruled out as illegitimate.

Second, the fact that the connective particle *-kato* connects VPs with the verbal stem(s) in situ [cf. (25)] is not at all surprising under the PF reanalysis approach. The fact simply indicates that Japanese does not have V-to-T raising in the narrow syntax and that a V-T complex is formed by Morphological Merger as argued by Fukui and Takano (1998), Aoyagi (1998a, b), and Sakai (1996, 1998, 2000a). See Yoon (1994) for the claim that Korean does not have V-to-T raising. Sells (1995) also presents some arguments that there is no V-to-T raising, from a different (i.e., lexicalist) perspective.

Finally and most importantly, the reduction-and-reanalysis account correctly predicts the grammaticality of examples involving no V-to-T raising, which is a mystery under Koizumi's analysis. The relevant examples in (27) are repeated here as (32).

- (32) a. Taroo-ga [Hanako-ni ringo-o 3-tu] to
 -NOM -DAT apple-ACC -CL CON

[Kumiko-ni banana-o 2-hon] katte-kuru-yooni (teinei-ni) tanon-da.
 -DAT banana-ACC -CL buy-bring-AUX (politely) asked
 Lit. 'Taro (politely) asked Hanako to buy and bring three apples and
 Kumiko to buy and bring two bananas.'

- b. Hahaoya-ga [Hanako-ni ringo(-o) 3-tu] to
 mother-NOM -DAT apple(-ACC) -CL CON

[Kumiko-ni banana(-o) 2-hon]-no oyatu-o age-ta.
 -DAT banana(-ACC) -CL -GEN snack-ACC gave
 'Their/someone's mother gave a snack of three apples to Hanako and
 (a snack of) two bananas to Kumiko.'

These examples contain typical contexts for deletion of identical predicates. Consider the following English examples.

- (33) a. Mary [forced Tom [to go to Cambridge] and [~~forced~~ John [[~~to go~~ to Oxford]].
 [(Kuno, 1976a)]

- b. Ugliness [is one of [the symptoms of disease]], and beauty [~~is one of [the symptoms of health]]].~~

[(Terazu, 1975)]

As indicated, example (33a) represents a case of deletion of a matrix predicate (*forced*) accompanied by the embedded infinitival predicate (*to go*). In (33b), the matrix predicate and part of a complement NP get deleted, as depicted above. Observe further that predicate ellipsis is prohibited across a finite clause boundary, as illustrated by the ungrammaticality of (34) below. Correspondingly, it is also impossible to connect more than one constituent by *-to* across a finite clause boundary, as shown by the ungrammaticality of example (35).

- (34) *John thinks that Bill will see Susan
and Harry [~~thinks [that Bill will see Mary]]]. [(Abe and Hoshi, 1997)]~~
- (35) *Taroo-wa [Hanako-ga [ringo-ga 3-ta] to
-TOP -NOM apple-NOM -CL CON
[Kumiko-ga [banana-ga 2-hon aru] to itta to omotta.
-NOM banana-NOM -CL are that said that thought
Lit. ‘Taro thought that [Hanako (said that there are) three apples] and
[Kumiko said that there are two bananas].’ (Adapted from Koizumi, 2000)

These parallelisms strongly suggest that the same mechanism is at work in deriving both the Japanese examples in (32) and the English examples in (33), in support of our PF analysis.

In summary, the PF reduction analysis has clear advantages over the string vacuous V-to-T raising analysis. Empirical observations indicate serious drawbacks of V-to-T raising, and they strongly support the view that a V-T complex is derived by Morphological Merger in Japanese. This result suggests that the category T plays a quite different role in Japanese syntax compared to the functional head T attested in European languages. The category T in Japanese is never “visible” in the narrow syntax, inducing no verb raising.

5. Case marking in Japanese

The mechanism of assignment of case particles has been one of the central topics in generative studies on the Japanese language from the very beginning of their history. Kuno (1973) proposes a set of transformational rules for assignment of case particles. Kuroda (1965, 1978) argues that the patterns of case marking in Japanese can be explained in terms of the basic sentence types and the linear order of noun phrases.

These earlier proposals were further refined and elaborated considerably as generative studies on Japanese advanced in the 1980s and the 1990s. In this section, we present a quick overview of these developments.

5.1. Japanese case system in the principles-and-parameters approach

The phenomena of morphological case have attracted much attention from classical grammarians and traditional linguists over the centuries. Within the framework of generative grammar, the most significant contribution is an invention of the theory of (abstract) structural Case proposed by Rouveret and Vergnaud (1980) and Chomsky (1981). The theory of structural Case distinguishes between the abstract notion of structural Case and the concept of morphological case. Structural Case is motivated mainly for explaining the distribution of overt noun phrases. All overt noun phrases are supposed to be assigned Case even though the Case may not have any phonetic realizations. If a noun phrase does not receive Case, the structure containing it will be ruled out (the “Case Filter”). It is generally assumed in the literature that the functional head I(nfl) (inflectional elements, which consist of T and Agr) assigns nominative Case under government (or Spec-Head agreement). Transitive verbs assign accusative Case and prepositions assign oblique Case, both under government.

Takezawa (1987, 1998) is a representative attempt at applying the theory of structural Case to nominative case marking in Japanese. Takezawa points out an interesting correlation between the distribution of nominative case particles and the existence of tense morphemes, and he argues that the theory of structural Case successfully accounts for the distribution of nominative case markers and tense morphemes. Consider the following examples.

- (36) a. Taro-wa Hanako-ga/o totemo meewaku-da-to omotte-iru.
 -TOP -NOM/ACC very annoying-is-that think
 ‘Taro thinks that Hanako is very annoying.’
- b. Taro-wa Hanako-*ga/o totemo meewaku-ni omotte-iru.
 -TOP -NOM/ACC very annoying-as think
 ‘Taro considers Hanako (to be) very annoying.’

The embedded predicate has the present tense form of the copula *-da* in (36a), and the embedded subject *Hanako* can be marked either by the nominative case particle *-ga* or the accusative case particle *-o*. In (36b), by contrast, the predicate nominal is bare and it is accompanied by no tense particle, in which case the embedded subject NP (*Hanako*) can be marked only by the accusative case particle. Based on observations of this kind, Takezawa claims that assignment of the nominative case particle in Japanese hinges on the presence of a tense morpheme, and that Japanese nominative case is assigned by the functional head I (or T in current terms) in pretty much the same way that nominative Case is assigned by I in English.

While Takezawa’s account is successful in capturing certain important correlations between nominative case particles and tense morphemes in Japanese, it leaves a number of peculiar properties of Japanese case marking unexplained. Consider, for example, multiple identical case constructions, which is one of the most notable properties of Japanese case marking [see Fukui (1986) and references therein for more discussion].

- (37) a. Hiroshima-ga huyu-ga kaki-ga oisii.
 -NOM winter-NOM oyster-NOM be delicious
 ‘In Hiroshima, oysters are delicious in winter.’
 b. Yamada kyoozyu-no sensyuu-no gengogaku-no koogi
 professor-GEN last week-GEN linguistics-GEN lecture
 Lit. ‘Professor Yamada’s last week’s linguistics(’s) lecture’

Notice that nominative case particle *-ga* and the genitive case particle *-no* appear more than once within the domain of relevant “functional heads” in these examples (I/T for nominative, and D or its equivalent for genitive, according to the “standard” analysis).

Another peculiar property of Japanese case marking is a free alternation of case particles, as illustrated in (38) below (cf. also (36a) above).²⁵

- (38) a. Taroo-ga Kumiko-galo kawaii to omot-ta.
 -NOM -NOM/ACC pretty that thought
 ‘Taro thought Kumiko is pretty./Taro considered Kumiko to be pretty.’
 b. Hanako-ga/no siranai koto-o Taroo-ga sitte-iru.
 -NOM/GEN not-know thing-ACC -NOM knows
 ‘Taro knows something that Hanako does not know.’

Since English and other European languages do not generally exhibit these properties (multiple case marking and case alternations), the Japanese phenomena cannot be readily integrated into the government-based Case theory. Thus, earlier attempts to apply Case theory to Japanese have to introduce a number of stipulations in order to accommodate these properties in terms of the government-based Case theory.²⁶

In the face of these peculiar properties of Japanese case assignment, other researchers have explored a different approach toward Japanese case marking within the context of an overall comparative syntax of English and Japanese. They do not apply the English-type structural Case theory directly to Japanese. Rather, based on the facts of Japanese case marking, they propose a somewhat different mechanism which seems to be descriptively more adequate for the language. Thus, Saito (1982, 1983) argues that the particle *-ga* is assigned as a default case and *-o* is assigned as a marker of inherent case. Fukui (1986) claims that both *-ga* and *-no* are default cases which are assigned within VP and NP, respectively. Kuroda (1978, 1983, 1986) refines his earlier proposals and proposes the Linear Case Marking mechanism,

²⁵ See Kuno (1973, 1976a) and Harada (1971, 1976) for earlier discussions on case alternation phenomena in Japanese. See Sakai (1994) for an attempt to provide a unified account for case alternation (or “case conversion”) phenomena in Japanese. More recent treatments within the minimalist program include Watanabe (1996b), Ochi (2001) and Hiraiwa (2001a, b), among others.

²⁶ For example, Takezawa (1987, 1998) suggests that the possibility of licensing multiple case is parametrized, or that an object NP can be assigned a nominative Case because the VP projection of a stative V is “transparent” with respect to Case assignment. To the extent that these statements are descriptively adequate, we would certainly want them to be derived from more fundamental parametric properties.

which, applying cyclically, handles the distribution of case particles in terms of the canonical sentence patterns and the linear order of noun phases. Fukui and Nishigauchi (1992) develop a system of case marking according to which case is “licensed” (but not assigned) under government (which can be one-to-many, unlike Spec-Head agreement), and they try to connect the case alternation phenomena in Japanese with the optionality of scrambling in the language.

In all of these analyses, assignment of case particles in Japanese does not involve Spec-Head agreement, which was then standardly assumed to be one-to-one. (For more recent discussion on the possibility of “multiple agreement,” see, among others, Chomsky 2001a, b and Hiraiwa 2001a, b.) Thus, assignment of multiple identical case is not a mystery in these approaches. Free alternation is also expected because case marking in Japanese does not involve an obligatory operation of Spec-Head agreement.

It is important to note that in the approaches represented by the works just discussed, the above-mentioned peculiar properties of Japanese case marking are not regarded as isolated properties of the language. Rather, these properties are to be derived from deeper parametric differences between, say, the English-type languages and the Japanese-type languages. Thus, Kuroda (1988) attributes a set of differences between English and Japanese to the obligatoriness/optionality of agreement, i.e., agreement (or “Agreement,” in his terms) is obligatory in English, while it is optional in Japanese, from which the other properties of the languages follow. Fukui (1986, 1988, 1995a, b) argues that the major typological differences (including the properties of case marking) observed between Japanese and English (and other similar languages) can be deduced from different feature compositions of the functional heads in the lexicons of the languages. Japanese represents a rather extreme case, in which the role of “functional heads” in this language is almost zero, as far as “agreement” is concerned (see the discussion in Section 2.2). He points out that one of the major roles of a functional head is, from the point of view of phrase structure composition, to “close off” a phrasal projection by means of its agreement features. Since Japanese does not really have active functional categories with agreement features, he argues, the phrases/projections in Japanese are never closed. Thus, additional elements are rather freely merged with a lexical projection (viz., verb phrases and noun phrases), and they are marked by case particles by the default rules, either by *-ga* in the case of a clausal projection, or by *-no* in the case of a nominal projection. (See also the discussion in Section 3.2.2.) The existence of multiple identical case (or the existence of case alternations, for that matter) is not a parameter by itself. It is a property of a language which is correlated with other properties of the language and which is to be derived from deeper parametric properties of the language in question (such as the feature compositions of functional heads).

5.2. Case marking in the minimalist program

As we have discussed in Section 2.1, the minimalist program was advanced in the early 1990s, addressing the question: “To what extent is the human language faculty

an optimal solution to minimal design specifications, conditions that must be satisfied for language to be usable at all?” (adapted from Chomsky, 2001a: 1). For reasons discussed in Section 2, this research program forces us to examine all the concepts and mechanisms employed in UG against interface conditions and/or economy considerations, to see if they are truly motivated by these factors. As a result of these “minimalist scrutinies,” many of the concepts and mechanisms assumed in earlier versions of the principles-and-parameters model have been eliminated. Consider, for example, the concept of government, which plays a crucial role in Case theory. In the following configuration (where XP is the maximal projection of X, and YP is an arbitrary maximal projection distinct from XP):

(39) [XP A [X [YP ...B...]]

X governs (i) A, (ii) YP, and (iii) B, in the classical theory of government. In case (i), X governs A if the notion of government is based on “m-command” (cf. Chomsky, 1986, among others) rather than c-command. X governs YP, representing the “core” case of government [case (ii)]. In case (iii), X governs B if YP (or any other intervening maximal projection) is not a “barrier” for B. Of these three sub-cases of government, case (ii) remains valid even in the minimalist program, as an instance of sisterhood (defined by Merge, via a “more primitive” notion of “Immediately-Contain”). Case (iii) represents a non-local relation and ought to be eliminated in the minimalist program. Case (i) is a local relation holding within the same maximal projection, and therefore, can be maintained (at least for the moment).²⁷

Given the minimalist re-examination of government, Case theory is reformulated in terms of “feature checking” holding between a head and its Spec, based on the structural relation depicted as case (i) in (39).²⁸ It is also proposed in earlier minimalist analyses of Case theory that Case be checked within a projection of the functional head Agr, an abstract functional category that is responsible for checking agreement features of noun phrases (see Section 2.1). This version of Case theory is immediately applied to Japanese, with the crucial assumption that Japanese has the functional category Agr. Tada (1992), Watanabe (1993, 1996a), and Koizumi (1995) are a few of the representative works of this kind, but many other works on Japanese syntax in the late 1980s and the early 1990s also assume the existence of Agr in Japanese. Each of these works makes interesting observations and presents intriguing analyses, contributing greatly to the study of Japanese syntax (and UG). A common feature of these works, however, is that the existence of Agr in Japanese is somewhat aprioristically assumed and no empirical evidence is presented for its existence in the language.

²⁷ It is an extension of a core local relation directly derived from the properties of Merge (such as “Immediately-Contain” or “Contain”). Thus, this, too, should be eventually eliminated if we strictly keep to minimalist assumptions, in which case the notion of “Spec-Head relation” should also be re-examined.

²⁸ The other logical possibility, in fact a more desirable one (see the preceding note), is the case (ii) in (39). That is, theoretically, it would be even more desirable if Case theory can be reformulated on the basis of sisterhood alone, eliminating the need for the Spec-Head relation. See Chomsky (2001b) for some relevant discussion.

In a more recent framework, Chomsky (1995) argues, based in part on earlier proposals by Fukui (1995b; written in 1992), Iatridou (1990), and Thráinsson (1996; written in 1994),²⁹ that the category Agr be eliminated from UG, since it does not fulfill the interface conditions and its existence in the theory of grammar is not justified. The so-called “Agr-less Case theory” is developed, based on Chomsky’s claim that Agr should not exist in UG. According to this theory, Case features of nominative noun phrases and accusative noun phrases are checked by T and the “light verb” *v*, respectively. Couched in this framework, Ura (1994, 1996, 1999, 2000) develops a version of the theory of multiple feature checking (see also Chomsky, 1995), which does not require a one-to-one correspondence between a functional head and its Spec, allowing multiple Specs per head. Ura proposes that UG provides the feature [\pm multiple] and that the values for this feature are parametrized. If a language selects the [+] value for this feature, multiple Specs are allowed in the language; if, on the other hand, the [–] value is selected, the one-to-one correspondence is required between a head and its Spec. The former case is manifested in a language like Japanese, whereas English represents the latter case. Ura (1996) argues that cross-linguistic variation in raising constructions can be nicely handled under this proposal. Ura (1999, 2000) goes on to point out that dative subject phenomena are also elegantly accounted for in terms of his theory of multiple feature checking.

It should be noted that the theory of multiple feature checking virtually introduces two distinct checking mechanisms to narrow syntax. A careful consideration is thus called for to determine whether each of the two mechanisms is well-motivated as an ingredient of narrow syntax. It is also important to note that, once the feature [\pm multiple] is introduced and parametrized, the existence of multiple identical case in a given language is stipulated as such, rather than characterized as a phenomenon to be derived from something more fundamental, a possibility that has been explored in earlier works by Fukui (1986, 1988, 1995a, b) and Kuroda (1988), where the existence of “multiple specifiers” in Japanese, along with numerous other properties of the language, is shown to be derived from the lack of active functional heads in the language’s lexicon.³⁰

6. Case in the PF component

In this section we present pieces of empirical evidence for an alternative approach to Japanese case marking, essentially along the lines of Kuroda’s series of works mentioned before (see also Fukui and Takano, 1998, for relevant discussion). This

²⁹ These authors do not claim the total elimination of Agr from UG. Their specific claims vary, but the common point among these authors is that a functional head like Agr needs to be fully justified for each particular language, rather than just “assumed” as a universal entity.

³⁰ Further applications of “Agr-less Case theory” to Japanese syntax are explored in recent works. Thus, Hiraiwa (2001a,b) proposes an analysis of case alternations in Japanese in terms of “multiple Agree,” and argues that a phrase entering into a Case checking relation does not always raise to a Spec position of the relevant functional head in the narrow syntax (see Miyagawa, 1993, for a similar suggestion), implying that the operation Agree alone is in fact sufficient for Case checking.

is assumed to take place in the narrow syntax) cannot be involved in these examples, because the alleged target of Case (feature) checking does not form a constituent in narrow syntax.

As also noted in Section 3.3.1, the fact that these PF constituents are never connected by the particle **-mo** provides an additional piece of support for our analysis.

(41) a. *[Zimintoo-kara gaimu-daizin-ni Yamada-si] mo
 Liberal Democratic Party-from minister of foreign affairs-DAT-Mr/Ms also

Hosyutoo-kara zaimu-daizin-ni Suzuki-si] mo
 Conservative Party-from minister of finance-DAT -Mr/Ms also

syuunin-si-sita.

assumed

b. *[Kinoo kono-heya-de suugaku-no gakusei-tati] mo [ototoi
 yesterday this room-in mathematics-GEN student-PL also the day before

ano-heya-de buturi-no sensei-tati] mo kono atarasii konpyuutaa-o tukat-ta.
 that room-in physics-GEN teacher-PL also this new computer-ACC used

As we argued in Section 4, the particle **-mo** must be present in the LF representation because it has its own semantic content. This implies that the elements connected by the particle **-mo** have to be a constituent in the narrow syntax (i.e., the derivation of LF). The ungrammaticality of the examples in (41), as opposed to the grammaticality of the corresponding examples [cf. (40)], indicates that the bracketed portions are PF constituents but not syntactic constituents, to which case particles can be attached.

Note also that unlike case particles, postpositional particles such as **-kara** ‘from’ or **-de** ‘in’ cannot be attached to these PF constituents, as shown in (42).

(42) a. *[Gaimu-daizin-ni Yamada-si-ga Zimintoo] to
 minister of foreign affairs-DAT -Mr/Ms-NOM Liberal Democratic Party CON

[zaimu-daizin-ni Suzuki-si-ga Hosyutoo(-to)]-kara
 minister of finance-DAT -Mr/Ms-NOM Conservative Party-(CON)-from

syuunin-sita.

assumed

b. *[Kinoo suugaku-no gakusei-ga kono-heya] to [ototoi
 yesterday mathematics-GEN student-NOM this room CON the day before

buturi-no sensei-ga ano-heya(-to)]-de kono atarasii konpyuutaa-o
 physics-GEN teacher-NOM that room (CON)-in this new computer-ACC

tukat-ta.

used

This pattern is again expected under our approach, since the postpositional particles have clear semantic content and must be present in the LF representation. Thus, they cannot take syntactic non-constituents as their complements in the narrow syntax.

Given the general assumption that feature checking/agreement is a structural relation holding between a syntactic constituent and a head, the facts we just pointed out constitute a serious challenge to any approach that takes Japanese case marking as an instance of feature checking/agreement applying in the narrow syntax. Furthermore, the bracketed elements in these examples do not even occupy a unique checking position since they do not form a constituent in the narrow syntax.³²

On the other hand, these peculiar properties of Japanese case marking receive a natural explanation if we analyze the case marking mechanism in the language as a morphological process in the PF component: Case particles can be assigned to a constituent formed by an application of Phrase-Level Merger/PF reanalysis in the PF component. Thus, examples like those in (40)–(42) can be handled without any difficulty under this approach.

6.2. Case marking in light verb constructions

Another piece of evidence for the PF case marking analysis is found in the light verb construction. Grimshaw and Mester (1988) point out some interesting properties of the Japanese light verb construction, as illustrated below.

- (43) a. Taroo-ga Amerika-ni ryokoo-si-ta.
 -NOM America-to travel-did

³² Notice that these elements also exhibit case alternations as illustrated below.

- (i) Kokumin-wa [gaimu-daizin-ni Yamada-si -to
 people-TOP the minister of foreign affairs-as -Mr/Ms-CON
 zaimu-daizin-ni Suzuki-si (-to)]-ga/o husawasii-to omotte-iru.
 minister of finance-as -Mr/Ms (CON)-NOM/ACC suitable-that think
 Lit. ‘People think/consider [Mr. Yamada as the minister of foreign affairs] and [Mr. Suzuki as the
 minister of finance] to be suitable.’
- (ii) [Kinoo suugaku-no gakusei-to ototoi buturi-no sensei]-ga/no
 yesterday math students-CON the day before physics teacher-NOM/GEN
 tukatte-ita atarasii konpyuutaa-ga kesa kyuu-ni kowarete-simat-ta.
 used new computer-NOM this morning suddenly broke down
 Lit. ‘The new computer which [yesterday math students] and [the day before physics teachers]
 used suddenly broke down this morning.’

Given the general assumption that Move does not apply to non-constituents, these examples indicate that the case alternation phenomena at hand cannot readily be accounted for in terms of Move.

‘Taro took a trip to the United States.’

- b. Taroo-ga Amerika-ni ryokoo-o si-ta.
 -NOM America-to travel-ACC did

In (43a), the verbal noun *ryokoo* ‘travel’ is incorporated into the light verb *-suru* (the past form of this verb is *-sita*, as in the examples above), forming a complex predicate *ryokoo-suru*, which assigns a theta-role to the locative argument *Amerika-ni* ‘to the United States.’ In (43b), on the other hand, the verbal noun is not incorporated into the light verb *-suru*, as evidenced by the accusative case marker *-o* attached to the verbal noun. However, the theta-role is assigned in the same way to the locative argument. This poses a problem for the Projection Principle of Chomsky (1981) (or for the Uniformity of Theta Assignment Hypothesis in Baker, 1988), which essentially requires that identical thematic relationships between items are represented by identical structural relationships between those items.

To resolve this problem, Grimshaw and Mester propose a mechanism of “argument transfer,” which transfers the theta-role structure associated with the verbal noun to the light verb *-suru*. Extending this analysis further, a series of recent works by Saito and Hoshi (2000), Hoshi (1999, 2001), and Saito (2000) develop a new line of approach to the light verb construction within the framework of minimalism.³³ Since neither the level of D-structure nor the Projection Principle is maintained in the minimalist program, theta-roles can in principle be assigned derivationally in the course of the derivation. Thus, Hoshi and Saito argue that the verbal noun is incorporated into the light verb by covert verb raising, and that theta-role assignment to the locative noun phrase is carried out derivationally, as schematically represented in (44).

- (44) Taroo-ga Amerika-ni t_i ryokoo_i-si-ta.
 -NOM America-to travel did

This “LF verb incorporation” analysis is theoretically superior to the argument transfer analysis in that by employing the general mechanism of head movement, it is not necessary to have recourse to the special additional mechanism of “argument transfer” only for the particular purposes of the light verb construction. However, the LF verb incorporation analysis faces a problem in accounting for the following examples, which involve the coordination of an argument and a verbal noun by the particles *-to* or *-mo*.

- (45) a. Taroo-ga kotosi-no natu [Amerika-ni ryokoo] to
 -NOM this year-GEN summer America-to travel CON
 [Doitu-ni ryuugaku] (-to)-o sita.
 Germany-to study abroad (-CON)-ACC did
 Lit. ‘This summer, Taro did [a travel to the United States and a study abroad in Germany].’

³³ See Kuroda (2002) for a detailed discussion of their analysis.

Again, if case marking takes place in the phonological component, as we have suggested, there is no problem in explaining this kind of example. The argument noun phrase and the verbal noun form a small clause constituent in the narrow syntax, and the quantificational particle is attached to this small clause as depicted in (49) below.

- (49) Taroo-wa [_{Small Clause} doko-ni ryokoo]-mo si-nakat-ta.
 -TOP anywhere-to travel-MO did not

Note that the argument *doko-ni* is located inside the scope of *-mo* in (49). Since the particle blocks adjacency between the verbal noun and the light verb, Morphological Merger does not apply to these elements. The reason why the particle is attached to the verbal noun in PF is that it is a clitic, as argued by Aoyagi (1998a, b). Thus, the observation made by Kishimoto (2001) provides still another piece of evidence for the PF case marking approach to Japanese.

Summarizing, we have seen that there are cases where case particles are attached to a constituent which is presumably formed by PF reanalysis. Thus, to the extent that our PF reanalysis is correct, these cases constitute evidence that case marking in Japanese takes place in the phonological component, i.e., case marking in the language must apply after PF reanalysis has taken place. Various properties of the light verb construction in Japanese were also examined in this section with regard to case marking, and we have argued that a careful examination of the properties of this construction also leads to the same conclusion that case particles in Japanese are assigned in the PF component.

7. Concluding remarks

The notion of functional categories plays an extremely important role in current linguistic theory, both with respect to universal principles and parametric variation. Yet, there is virtually no substantive general theory of these categories, which makes the discussion on these categories somewhat obscure. This paper is an attempt to clarify some of the central issues concerning functional categories, particularly as these elements pertain to Japanese syntax.

After briefly going over the major developments of the concept of functional categories in linguistic theory, we have proposed, based on various earlier works (see the discussion in Section 2.1), the following general guideline for postulation of functional categories in a given language.

(3) The Visibility Guideline for Functional Categories

A functional category has to be visible (i.e., detectable) in the primary linguistic data.

There are three ways that a functional category can be visible in the primary linguistic data. One is to have phonetic content and to be pronounced, thereby

becoming directly visible at PF. The other two ways are indirect ways of becoming detectable in the overt data. That is, a functional category can be detectable indirectly, either by triggering a movement of a phrasal projection (and thus affecting the canonical word order), or by affecting the shape of a neighboring head (via head movement, generally). We have also noted [see (4)] that the first possibility (direct detectability) and the other two (indirect detectability) seem to be mutually exclusive, i.e., a functional category can be visible either directly or indirectly, but not in both ways. From this generalization, it follows that if a functional head has phonetic content, it doesn't induce feature checking, triggering no head or phrasal movement.

We then discussed the issues concerning functional categories in Japanese. As soon as the notion of functional categories was put forth in the mid-1980s, it was hypothesized that Japanese does not have active functional categories in the lexicon (Fukui, 1986). On the other hand, much recent work on Japanese syntax (either in the “government-binding” framework or in the minimalist program) simply assumes the existence of functional categories in the language. We have argued that in the absence of a substantive general theory of functional categories, a meaningful question to be addressed at the present stage of our understanding is the following empirical question.

- (5) Does Japanese exhibit formal and mechanical “feature checking phenomena” which are comparable in nature to those attested in other languages (such as English and other European languages)?

Thus, if a phenomenon seemingly related to a functional category (either phrasal movement, head movement, or some sort of “agreement”) is to be identified in Japanese, it is necessary to determine whether the given phenomenon is of the same nature as the attested cases of agreement/movement induced by a functional category, i.e., whether it is of formal and mechanical nature that should be handled by Agree (or some such mechanism) or head movement.

In fact, very few arguments have ever been put forward in favor of the existence of active functional categories in Japanese in the relevant sense just defined (in (5)), despite the fact that many researchers working on Japanese syntax simply “assume” their existence. Koizumi (2000) is one of the few such serious attempts. We examined in detail his arguments for string vacuous overt V-to-T(-to-C) raising in Japanese, and argued that his arguments suffer from various empirical problems (see Section 3). An alternative approach in terms of PF reanalysis was proposed and the discussion was then extended to the issues of case marking in Japanese. We have argued that case particles in Japanese are assigned to the elements created by PF reanalysis (Morphological Merger), which entails that case marking in the language takes place in the phonological component rather than in the narrow syntax.

Thus, we must conclude that the empirical arguments for the existence of active functional categories in Japanese have yet to be presented. In the absence of compelling evidence for postulating a formal and mechanical “feature checking” mechanism in Japanese, we must at this point answer negatively question (5) above, and the minimalist guidelines (particularly the Visibility Guideline (3)) force us to continue

to assume that Japanese lacks active functional categories. The hypothesis that Japanese lacks active (agreement-inducing) functional categories is advanced by Kuroda (1988) and Fukui's series of works, and essentially the same conclusion is independently reached in recent works by Hoji (1998a,b, 2002) based on a careful examination of the phenomena in Japanese that are not covered in this paper. Our discussion in this paper confirms the conclusion that there is no compelling reason yet for questioning the hypothesis.

We have focused the discussion on the functional head T, and have not delved into the issues concerning the other possible functional categories in Japanese. But our discussion can readily be extended to the other candidates for functional categories in the language (cf. also the discussion in Section 2.1). The elements in Japanese which can be reasonable candidates for these functional heads (e.g., *-ka* for C, *-ga* for K(ase), *-no* for D, etc.) have invariable phonetic shape, and there is no known evidence that these elements trigger agreement/feature checking phenomena. In fact, if Fukui and Takano's (1998) generalization [see (4) in Section 2.1] is tenable, these elements in Japanese should not participate in agreement/feature checking (because they have invariant phonetic shape). Thus, we are again led to the (tentative) conclusion that Japanese lacks active functional categories in the lexicon.

What does this conclusion tell us about the overall picture of Japanese grammar, as it relates to UG? Our discussion in this paper suggests that many of the processes taking place in the narrow syntax of English and other similar languages are found in the phonological component of Japanese grammar. More precisely, the role of narrow syntactic mechanisms seems to be transferred to the mechanisms in the phonological component (case marking is a case in point). Interestingly enough, Takeda (1999) argues that the formation of relative clauses in Japanese takes place not in the form of feature checking (operator movement) in narrow syntax, but rather, in terms of type-shifting in the "semantic component." Fukui and Takano (2000) argue that various differences between English and Japanese noun phrases, particularly the relative clause structures, receive a unified account if Japanese, as opposed to English, lacks the N-to-D raising process (due to the lack of D in its lexicon), inducing no relevant "feature checking."³⁴ Ono (2002) examines the properties of exclamatory sentences in English and Japanese, and argues that this construction involves a kind of feature checking in English, while no such operation takes place in Japanese, due to the existence in the latter (and the lack thereof in the former) of an overt element (*no da*) that marks the construction. If the analyses presented in these works are on the right track, then the role of narrow syntactic operations is transferred not only to the phonological component, as we have suggested in this paper, but also to the "semantic component" in the grammar of Japanese, particularly with respect to "operator movement" constructions. That is,

³⁴ Harada (2002) presents some acquisition data that support the analysis of relative clauses presented in Fukui and Takano (2000). See Watanabe (2002) for an overview of various issues concerning "operator constructions" in Japanese.

more important processes occur in Japanese grammar “closer to” semantic and phonetic representations, as compared to the corresponding processes in English.³⁵

This situation arises because the operation Agree apparently does not apply in Japanese, due to the lack of the features that trigger its application (uninterpretable features). Thus, although Agree is made available by UG (and hence available in Japanese grammar as well), the operation remains (almost) totally unused in Japanese. Although it is unclear at this point whether this situation is natural or strange (calling for some discussion), let us consider some of the related issues here.

Agree is an operation in narrow syntax that is responsible for feature checking (see Chomsky, 2000, 2001a, b). The need for this operation (and also the need for uninterpretable features) is grounded on the existence of the dislocation property (transformations) in natural languages. Chomsky often suggests (see Chomsky, 1965, 2000, among many others) that interface conditions require that such notions as “topic-comment,” “presupposition,” “focus,” “new/old information,” etc. (collectively called the “surface structure” properties) be encoded into a linguistic expression produced by the human language system. These properties often involve the “edge” of constructions, which in turn requires the relevant element to be at the “edge” of a phrase/clause, yielding the need for dislocation of elements. The existence of uninterpretable features is required as a drive for dislocation/movement, and the formal operation Agree is called upon to handle feature checking.

While the first step of this reasoning seems universally true (i.e., the interface conditions require such notions as “topic-comment,” etc.), there is no a priori reason that every language has to meet the requirement exactly in the same way, for example by placing the element at the “edge.” Thus, Japanese has a specific element to mark the topic (*-wa*), which nullifies the need for marking a topic by placing it at the beginning of a sentence. Although we cannot go into the details here, various case particles supplied by the Japanese lexicon (as well as the mechanism of complex predicate formation, in some cases) can actually express the other “surface” properties mentioned above. If so, there is simply no need in these respects for “dislocation” in Japanese; hence no need for uninterpretable features as a drive for movement. Thus, the operation Agree need not (and perhaps does not) apply in the narrow syntax of Japanese.

However, this does not mean that Agree is unavailable to the speakers of Japanese. To the extent that the operation is made available by UG, it should be available even in Japanese. In fact, a classical work by Harada (1973; see also Harada, 1972) demonstrates that the relationship between the Q-marker *-ka* and *wh*-phrases in Japanese exhibits properties very similar to those of Agree, though with important

³⁵ It has been occasionally claimed among Japanese linguists that “Japanese is a ‘discourse-oriented’ language where discourse principles play much more prominent roles than grammatical principles do,” that “there is no ‘grammar’ of Japanese, only morphology,” etc. Of course, these claims cannot be accepted as such. As it turns out, however, the discussion in this paper suggests that there may be some truth to these remarks, although our conclusion by no means decreases the importance of formal syntactic approaches to Japanese. It is also worth pointing out that the general characteristics of Japanese grammar we are entertaining in the paper have much in common with the ideas of the “configurationality parameter” proposed by Hale (1980, 1982, 1983).

differences which show that the phenomenon does not belong to narrow syntax.³⁶ Thus, the grammar of Japanese makes use of a formal operation very similar in nature to Agree, although the operation does not seem to apply in narrow syntax. This suggests that what UG provides is a general (downward) “search mechanism” which meets specific locality conditions, and that the particular operation Agree as it is formulated for feature checking purposes in narrow syntax is a realization of this general search mechanism when it applies to a specialized relation (feature checking) in a specific component of grammar (narrow syntax). Japanese happens to lack this particular realization of the mechanism, but it is nevertheless equipped with the general search procedure, applying in a different component of the grammar.

As we briefly discussed in Section 2, earlier work by Fukui and Kuroda shows that various characteristics of Japanese can be deduced from the fundamental parametric property of the language, i.e., the lack of formal agreement. Chomsky (2000: 131, 2001a,b) suggests that the operation Spell-Out is associated with agreement. More specifically, the timing of Spell-Out is related to the existence (and deletion) of uninterpretable features. Given the existence of uninterpretable features, Agree must apply to delete the features, and then Spell-Out must apply at the following phase level. Thus, if a language does not have the relevant uninterpretable features, then the timing of Spell-Out is not narrowly constrained and the operation can apply rather freely in the derivation (to the extent that the derivation will not crash). A case in point is Japanese. It is fairly clear that noun phrases in Japanese lack (interpretable) ϕ -features, which results in the non-existence of uninterpretable ϕ -features of T (see also Zushi, 2002, for related discussion). Furthermore, Fukui and Takano (1998) argue that Japanese noun phrases do not have uninterpretable Case features to be deleted under feature checking. With overt case particles available in the lexicon, noun phrases in Japanese do not have to undergo feature checking to delete Case features (see Fukui and Takano, 1998 for details). If this is indeed the case, and if the class of “phases” include (some) noun phrases (and possibly some adpositional phrases as well), then it follows that Spell-Out can optionally apply either, say, at the object noun phrase level (spelling it out to the phonological component, prior to the rest of the sentence), or at the vP/CP level. The former option yields a “scrambled” sentence (such as *pizza-o Taroo-ga tabeta* ‘Taro ate pizza’), while the latter option leads to a “canonical” SOV order (such as *Taroo-ga pizza-o tabeta* ‘Taro ate pizza’). In this way, the plausibility of the hypothesis that agreement does not take place in Japanese (or that Agree does not apply in the narrow syntax of Japanese) is further increased by showing that by interacting with other well-motivated principles and properties of Japanese, the hypothesis elegantly accounts for another salient property of the language, i.e., the existence of scrambling.³⁷

The issues are all empirical. Thus, the conclusions discussed in this section are all tentative, subject to further empirical investigation. The existence of active func-

³⁶ For example, the linking between *-ka* and a *wh*-phrase does not exhibit island effects, and is sensitive to some sort of semantic factors (his “monkey wrench predicate constraint”). See Fukui (2000) for relevant discussion.

³⁷ See Kasai (2002) for an analysis of scrambling along the lines sketched here.

tional categories/formal and mechanical feature checking in Japanese is still open to discussion, calling for novel empirical discoveries about the nature and properties of Japanese grammar. At the present stage of our understanding, however, the facts about Japanese seem to lead us to the conclusions that we have arrived at in this paper.

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