

SYNTAX AND/OR PRAGMATICS:
PP-SCRAMBLING IN TONGAN AND THE THEMATIC HIERARCHY

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The present study investigates the syntactic and pragmatic aspects of scrambling in Tongan (Polynesian). Scrambling in Tongan is understood as information focus movement to [Spec, T], and is licensed by two features on T, the EPP and information focus. Scrambling of a PP, however, sometimes results in ungrammaticality even if the relevant PP represents new information. We propose that this is not due to syntactic reasons, but because of the mismatch between the morphosyntax and information structure of the resulting phrase. Specifically, we argue that encoding of information structure must observe two hierarchies: the thematic hierarchy as a markedness scale of discourse topicality and the givenness hierarchy, according to which old/given information must be realized in a morphologically reduced form. Our findings show that pragmatic factors can affect not only the felicitousness, but also the grammaticality of a given construction, suggesting that the interaction between syntax and pragmatics is more dynamic than is generally assumed.

1. INTRODUCTION

It has long been noted that in Tongan (Polynesian) the basic VSO freely alternates with VOS. Traditionally, VOS was viewed as an equivalent of passive (Churchward 1953, Lynch 1972).¹ Otsuka (2003, to appear), however, argues against the passive analysis and proposes instead that VOS in Tongan should be understood as an instance of scrambling, whose effect is that of information focus. In this approach, scrambling in Tongan is taken to be information focus movement, a syntactic operation that puts the constituent (phrase) representing new information in the designated information focus position, i.e., [Spec, T].

Not only NPs, but also PPs may undergo scrambling in Tongan. PP-scrambling in Tongan, however, does not seem to be readily accounted for in terms of information focus alone. There are instances in which scrambling results in ungrammaticality even if the relevant PP represents new information. Roughly, PP-scrambling in Tongan is restricted in the following manner. First, a PP can be scrambled freely in intransitive constructions, but not in transitive (ergative) constructions. Second, the goal argument of a ditransitive verb may freely undergo scrambling. The first observation suggests that scrambling of a PP over an ergative subject is prohibited. However, this condition is overruled if the relevant PP is the goal argument of a ditransitive verb. This in turn suggests that arguments, but not adjuncts, can be scrambled. Yet, this condition does

¹ The main motivation for the passive analysis is that Tongan does not have any other construction that has an effect similar to that of passive (i.e., foregrounding the patient). In particular, the so-called Polynesian passive that involves variants of a morpheme *-Cia* does not exist in Tongan.

not take effect in intransitive constructions. Formulating a syntactic rule to account for these facts proves quite challenging a task.

The current study investigates a range of data concerning PP-scrambling in Tongan and puts forward an analysis that accounts for the seemingly complex and conflicting constraints on this syntactic operation. We propose that some instances of scrambling are considered ungrammatical not because of syntactic reasons, but because of the mismatch between the morphosyntax and information structure of the resulting construction. In the current approach, scrambling in Tongan is viewed as information focus movement, a means to derive a syntactic construction that is compatible with the corresponding information structure. Note also that pragmatics imposes a set of conditions so as to ensure that a certain information structural status is represented by an appropriate linguistic form. For example, it is required that old/given information should be realized morphologically in a reduced form such as a pronoun or a (discourse) topic variable. Thus, in Tongan, there are at least two morphosyntactic means to encode information structure: a) scrambling the phrase representing new information and b) pronominalization of the phrase(s) representing old/given information. These two operations must not cancel out each other. In other words, whenever scrambling takes place, the resulting construction must also satisfy the pronominalization requirement. Our investigation shows that illicit instances of PP-scrambling in Tongan are so judged because they violate this condition.

The paper is organized as follows. In Section 2, we discuss the basic facts about scrambling in Tongan and Otsuka's (2003, to appear) analysis of the relevant data. Some problematic examples of PP-scrambling are discussed in Section 3. In Section 4, an alternative approach is proposed. It will be shown that a single pragmatic condition can account for the constraints on PP-scrambling that are too complex to be explained in a strictly syntactic approach. Section 5 provides the conclusion.

2. SCRAMBLING AS INFORMATION FOCUS MOVEMENT

The unmarked constituent order in Tongan is VSO. PPs typically occur sentence-finally. Thus, the unmarked order is VS(O)PP if a PP is present in a verbal construction, as shown in (1) below. Case marking is ergative.²

- (1) a. Na'e 'alu 'a Sione ki Tonga.
 PST go ABS Sione to Tonga
 'Sione went to Tonga.'
- b. Na'e tuku 'e Sione 'a e tohi 'i he loki.
 PST leave ERG Sione ABS REF book in REF room
 'Sione left a book in the room.'

² The following abbreviations are used in this article: ABS = absolutive, DIR = directional, ERG = ergative, PERS = personal, PRS = present, PST = past, REF = referential, S = singular, 3 = third person. Standard Tongan orthography uses the inverted apostrophe (´) to indicate the glottal stop. Long vowels are written with a macron (¯).

We assume that the verb is in C as a result of V-to-T-to-C movement and that the subject raises to [Spec, T] due to the EPP on T (Otsuka 2000, 2005).

Scrambling, i.e., the alternation between VSO and VOS, is permissible, as illustrated in (2).

- (2) a. Na'e lau 'e Sione 'a e tohi.
 PST read ERG Sione ABS REF book
 'Sione read a book.'
- b. Na'e lau ['a e tohi]_i 'e Sione t_i.
 PST read ABS REF book ERG Sione
 'Sione read a book.'

Scrambling of a PP is also permissible. Compare (3) below with (1a).

- (3) Na'e 'alu [ki Tonga]_i 'a Sione t_i.
 PST go to Tonga ABS Sione
 'Sione went to Tonga.'

When uttered in isolation, native speakers do not perceive any semantic difference between the two variants. They are considered equally grammatical. Given an appropriate context, however, native speakers do distinguish the two. While VSO is used to respond to subject *wh*-questions, VOS is chosen to respond to object *wh*-questions. The use of VOS as an answer to a subject *wh*-question is considered infelicitous. These facts suggest that the effect of scrambling is that of information focus in the sense of Kiss (1998). That is, the phrase occurring immediately after the verb is interpreted as new information.

Taking VOS as an instance of scrambling, we assume that this alternative constituent order arises as a result of movement of the object NP. The relevant movement shows the properties of A-movement with respect to locality, binding, and weak crossover effects. First, as shown in (4), long-distance scrambling across a clause boundary is impossible.

- (4) a. 'Oku tui 'e Mele [na'e fili 'e Sione 'a Pila]
 PRS believe ERG Mele PST choose ERG Sione ABS Pila
 'Mele believes that Sione chose Pila.'
- b. *'Oku tui 'a Pila_i 'e Mele [na'e fili 'e Sione t_i]
 PRS believe ABS Pila ERG Mele PST choose ERG Sione
 Intended meaning: 'Mele believes that Sione chose Pila.'

Second, scrambling affects binding relations, as illustrated in (5).³ In (5b), the scrambled pronoun *ia* cannot be coreferential with the subject *Sione*, presumably due to the violation of

³ Tongan does not have a set of reflexive pronouns. The same form can be interpreted as either pronominal or anaphoric. When a pronoun is used as an anaphor, it is often accompanied by an adverb *pē* "only". However, the presence of *pē* does not necessarily induce the reflexive interpretation.

Principle C. This means that the pronoun cannot reconstruct, indicating that the movement involved is A-movement.⁴

- (5) a. Na'e fili 'e Sione_i 'a ia_{i/j} pē.
 PST choose ERG Sione ABS 3.S only
 'Sione chose him/himself.'
 b. Na'e fili 'a ia_i pē 'e Sione_{i*/j} t_i.
 PST choose ABS 3.S only ERG Sione
 'Sione chose him/*himself.'

Finally, scrambling does not show weak crossover effects, as evidenced by the grammaticality of (6).

- (6) Na'e fili 'a e taha kotoa_i 'e he'ene_i tamai t_i.
 PST choose ABS REF one every ERG his father
 'His_i father chose everyone_i.'

Based on these facts, Otsuka (2003, to appear) proposes that scrambling in Tongan should be understood as information focus movement, which puts new information in the designated focus position, [Spec, T]. This movement is obligatory and is licensed by two features on T: the EPP and information focus. VOS arises when the object represents new information: the scrambled object is in [Spec, T], while the subject remains in situ, i.e., in [Spec, vP]. The proposed approach conforms to the general trend to reconsider the conventional view of scrambling as an optional movement (Bailyn 2003, 2004; Grewendorf and Sabel 1999; McGinnis 1999; Miyagawa 2001, 2003; Müller 1997, among others).⁵ In particular, it follows Miyagawa's (2001) analysis of scrambling in Japanese as an obligatory movement triggered by the EPP on T. Based on the evidence concerning the interpretation of the universal quantifier relative to sentential negation, Miyagawa shows that in a scrambled sentence, the object is in [Spec, T] while the subject remains inside vP.

⁴ In fact, the binding facts are a little more complicated. When the pronoun occurs as the ergative argument, scrambling shows no effect on binding relations, as illustrated below.

- (i) a. Na'e fili 'e ia_i pē 'a Sione_{i*/j}.
 PST choose ERG 3.S only ABS Sione
 'He/*himself chose Sione.'
 b. Na'e fili 'a Sione_i 'e ia_{i*/j} pē t_i.
 PST choose ABS Sione ERG 3.S only
 'He/*himself chose Sione.'

There seems to be a language-specific constraint in Tongan that requires the antecedent to bear ERG Case (or alternatively, agent theta-role). A similar constraint is observed in other Austronesian languages such as Malagasy and Tagalog, where only agents can be the antecedent (Joachim Sabel, p.c.).

⁵ Some have proposed that "scrambled" sentences are not a result of movement. In their approach, a "scrambled" NP is taken to be base generated in a non-theta position and receives theta-role later either by lowering into a theta-position at LF (Bošković and Takahashi 1998) or through Case checking (Fanselow 2001).

Note also that the idea that (A-)scrambling involves information focus is not novel. Several other researchers have proposed a similar idea on independent grounds. For example, Reinhart (1995) and Neeleman and Reinhart (1998) argue that the effect of scrambling in Dutch is to remove a phrase from the position associated with information focus. Along the same lines, Miyagawa (to appear) argues that scrambling in Japanese has the effect of “anti-focus”, moving a phrase away from the position of nuclear stress, which he argues signals information focus in this language.⁶ The current proposal differs from these approaches in that the target of scrambling, i.e., [Spec, T], is taken to be the position associated with information focus, rather than the escape hatch for an unfocused constituent. Zubizarreta (1998) and Bailyn (2003, 2004) propose a similar view, arguing that T may carry various pragmatic related features such as focus and topic, which forces scrambling. Finally, Belletti (2004) also relates free subject inversion in Italian to information focus. She argues that there is an IP-internal information focus position, to which postverbal (i.e., inverted) subjects move. Although Belletti considers the focus position in question to be part of *vP* periphery and not as high as T, her observation corroborates the current proposal to the extent that it identifies a position associated with information focus, separate from and lower than the focus position(s) in the CP periphery.

As mentioned above, in the current analysis scrambling involves two features on T, the EPP and the information focus feature. A question arises as to how the EPP is checked when the scrambled category is a PP. This question can be easily answered if we consider the movement of a PP to involve pied-piping of a preposition in a way similar to Collins’s (1997) analysis of locative inversion in English.^{7,8}

⁶ Crucially, Miyagawa (to appear) assumes that [Spec, T] in a scrambled sentence serves as a topic (old information) position rather than a focus (new information) position. In his analysis, T is associated with identificational focus, not informational focus. In the absence of the identificational focus feature, whatever moves to [Spec, T] will be interpreted as topic due to the nuclear stress rule. In Miyagawa’s system, T acquires the focus feature by means of feature percolation from C. The current approach differs from his in that the information focus feature originates on T.

⁷ Miyagawa (to appear) suggests that the locative PP in English is not in the “basic” Spec of TP, arguing that the locative PP behaves differently from other categories in the subject position: for example, the locative PP does not allow auxiliary inversion in questions. There is, however, a crucial difference between locative inversion in English and PP scrambling in Tongan; while the former is permissible only with unaccusatives and passives, there are no such restrictions on PP scrambling in Tongan.

⁸ Another question is whether the two features must be checked by a single item or they can be checked independently. Our data suggest that the two features must be checked by a single item. The very function of the EPP is to force the movement of a category to the relevant Spec. Thus, once this feature is checked, no further movement should be permitted. That is, the EPP cannot be checked twice, unless the language in question permits multiple Specifiers. Therefore, in principle, if we assume that the two features can be checked independently, we are forced to assume also that the information focus feature can be checked in situ. However, this cannot be the case. Suppose the EPP is satisfied by the subject moving to [Spec, T] and the information focus feature on the object is checked in situ. We would expect it to be possible for the object in a VSO construction to be interpreted as new information. We have seen that this is not possible: VSO cannot be used to answer object *wh*-questions. In the following discussion, we assume that the two features need to be checked simultaneously.

3. CONSTRAINTS ON PP-SCRAMBLING IN TONGAN

While the information focus analysis outlined above accounts for the scrambling of NPs in Tongan nicely, when we turn to PP scrambling, the picture gets a little murky. Scrambling of PPs in Tongan is constrained in the following three ways. First, scrambling of an oblique object is permissible if the relevant object is a *ki* PP, but not *i* PP. Second, scrambling of a PP is not permissible in transitive constructions. Third, scrambling of the direct object is restricted in ditransitive constructions.⁹ The question is whether we can account for these facts solely in syntactic terms.

Let us take a look at the scrambling of oblique objects. There are two kinds of oblique objects in Tongan: Those which take a preposition *ki* ‘to’ and those taking *i* ‘in’. These oblique objects occur in the so-called Polynesian middle constructions (Chung 1978). Middle constructions are similar to transitive constructions in that the oblique object is obligatory. On the other hand, they are like intransitive constructions in that the subject is marked as ABS. As illustrated below, scrambling of a *ki*-PP is permissible (7a), while that of an *i*-PP results in ungrammaticality (7b).

- (7) a. Na‘e sio [ki he ika]_i ‘a Mele t_i.
 PST see to REF fish ABS Mele
 ‘Mele saw a fish.’
 b. *‘Oku sai‘ia [‘i he ika]_i ‘a Mele t_i.
 PRS like in REF fish ABS Mele
 ‘Mele likes fish.’

The contrast between transitive and intransitive constructions is illustrated in (8) below. Scrambling of a PP is permissible in intransitive constructions, but impossible in transitive constructions, as shown in (8a) and (8b), respectively.

- (8) a. Na‘e mohe [‘i he loki]_i ‘a Mele t_i.
 PST sleep in REF room ABS Mele
 ‘Mele slept in the room.’
 b. *Na‘e kai [‘i he peito]_i ‘e Mele ‘a e ika t_i.
 PST eat in REF kitchen ERG Mele ABS REF fish
 ‘Mele ate a fish in the kitchen.’

Finally, compare (9) below with (8b).

- (9) Na‘e ‘oange [kia Sione]_i ‘e Mele ‘a e ika t_i.
 PST give to.PERS Sione ERG Mele ABS REF fish
 ‘Mele gave a fish to Sione.’

⁹ By ditransitive, I refer to dative object constructions. Double object constructions do not exist in Tongan.

On the surface, (9) and (8b) are structurally identical: a PP is scrambled over two NPs, the subject as well as the direct object. However, while (8b) with a transitive verb is ungrammatical, (9) with a ditransitive verb is grammatical.

Syntactically, two generalizations can be drawn from the above facts. First, the data apparently show an ERG-ABS asymmetry: a PP cannot be scrambled over an ergative subject. This could be understood as a manifestation of syntactic ergativity. Given that Tongan exhibits syntactic ergativity with respect to relativization and one type of coordination involving *pea* (Otsuka 2000, 2003), it is not so far-fetched an idea. Second, the data also suggest that there is an argument-adjunct asymmetry. That is, PP-scrambling is permissible if the PP in question is an argument, but not if it is an adjunct. This, too, looks promising, for such an asymmetry is also observed with regard to other syntactic operations crosslinguistically.

Such a syntactic approach proves in vain, however. The two generalizations can be easily refuted by counterexamples. It would be mistaken to postulate that ergative NPs block the movement of a PP, as ergative NPs do not always form a barrier to scrambling. For example, an absolutive NP can be scrambled over an ergative NP without any problem. Furthermore, as shown in (9) above, they do not block the scrambling of a PP as long as it is the goal argument of a ditransitive verb. Similarly, it would be erroneous to state that adjunct PPs may not be scrambled. As we have seen above, scrambling of an adjunct PP is permissible as long as the relevant construction is intransitive. Moreover, an adjunct PP can be scrambled even in transitive constructions if the subject is a clitic pronoun instead of a full NP. See (10) below.

- (10) Na'a ne kai [‘i he peito]_i ‘a e ika t_i.
 PST 3.S eat in REF kitchen ABS REF fish
 ‘He ate a fish in the kitchen.’

There is another way to summarize the relevant data: scrambling of an adjunct PP over an ergative NP is prohibited. In a configurational approach, one may postulate that the scrambled category may not skip more than one NP in a higher position. In a transitive construction, an adjunct PP necessarily skips two, the subject and the object. Yet, it is difficult to provide a rationale for such a constraint. The null hypothesis would be that DPs in these higher positions count as “closer” to the probe, T, thereby inhibiting the adjunct PP from entering into an Agree relation with T. However, given that the relevant feature is information focus, this sounds rather odd. Suppose we stipulate that checking of the EPP takes precedence over checking of the information focus feature. This would explain why the DPs in higher positions count as closer to the probe. Nevertheless, it fails to explain why it is OK to skip one such position, but not two. Hence, the problem remains unsolved.

4. PRAGMATIC FACTORS

We are thus forced to turn to something other than syntax, namely, pragmatic factors. Recall that scrambling in Tongan is viewed as information focus movement in the current approach. It is a syntactic operation, but crucially, the motivation has to do with pragmatics: it is a means to

encode information structure. Of course, scrambling is not the only morphosyntactic means to encode information structure. For one thing, not all languages permit scrambling. More generally, the information structural status of a phrase is reflected in its morphological form, observing the givenness/accessibility hierarchy (Ariel 1990, Gundel, Hedberg and Zacharski 1993). Given that scrambling involves information structure, the outcome of this syntactic operation must be compatible with the pragmatic conditions concerning information structure. In other words, I propose that the outcome of a given syntactic derivation is subject to pragmatic filters to qualify as grammatical.¹⁰ In Tongan, encoding of information structure is two-fold. On the one hand, syntax requires that new information should undergo information focus movement to [Spec, T]. On the other, pragmatics requires that information structure observe a) the thematic hierarchy as a markedness scale of discourse topicality and b) the givenness/accessibility hierarchy that accounts for correlations between the cognitive status of an entity and the form of the NP that refers to it. Grammaticality of a given construction is determined comprehensively in terms of these pragmatic as well as syntactic conditions.

The notion of thematic hierarchy has been rather controversial, particularly with respect to the relative positions of theme and goal. There are basically two approaches to the thematic hierarchy in the literature. In the first approach, the thematic hierarchy is considered to be an encoding of the typical order of composition of a verb with its arguments. This position is typically represented by Baker (1989). In this hierarchy, goal is ranked lower than theme (11).

(11) Agent > Theme > Goal > Location

In the second approach, it is regarded as a markedness scale of discourse topicality. This position is typically represented by Givón (1984). In this hierarchy, goal is ranked higher than theme.

(12) Agent > Goal > Theme > Location

Rappaport-Hovav and Levin (2000) argue that the observed conflict arises because there are actually two kinds of goals: recipients, which are typically animate, and spatial goals, which are not. They also point out that animates are inherently more topic-worthy than inanimates. Thus, goals that are recipients are naturally ranked higher than themes in the second type of hierarchy. Given that our focus here is information structure, the relevant notion of thematic hierarchy is the second type. Therefore, I propose the thematic hierarchy in (13) below, in which recipients and spatial goals are ranked separately, reflecting the insight of Rappaport-Hovav and Levin (2000).

(13) Agent > Recipient > Theme > Spatial goal > Location

¹⁰ In this respect, I diverge from the view that information structures is a concern of the interface only and that an information structure is something that is imposed on the outcome of a syntactic derivation. Rather, I propose that syntax and pragmatics interact more dynamically. Pragmatics interferes with syntax even before the interface level; some pragmatic considerations are dealt with in the core syntax (e.g., information focus movement). Furthermore, grammaticality, primarily a syntactic notion, is subject to pragmatic considerations. That is, some legitimate syntactic objects may be ruled out by pragmatic conditions as “ungrammatical”.

This hierarchy is taken to reflect the relative salience of entities, that is, likelihood of representing old information. Specifically, we expect that if a phrase represents new information, anything ranked higher in the hierarchy are likely to represent old information.

The other relevant requirement is that old information must be realized in a morphologically reduced form. Here we may think of a givenness hierarchy, provided in (14) below.

- (14) $\emptyset > \text{Clitic} > \text{Pronoun} > \text{Demonstrative} > \text{Definite} > \text{Indefinite} > \text{Proper name}$

It is assumed that the higher in the hierarchy a given form is ranked, the more accessible the entity to which the form refers to. The most accessible is a topic variable, which is morphologically null, shown as \emptyset in (14). Given the two hierarchies, we may postulate the following pragmatic constraint: when a phrase undergoes information focus movement, any phrase ranked higher in the thematic hierarchy should be realized as a pronoun or a topic variable. Below, I will show how this pragmatic requirement accounts for the illicit instances of PP-scrambling in Tongan discussed in Section 3.

4.1. Scrambling of Adjunct PPs

Let us consider the scrambling of adjunct PPs. In the ungrammatical example (8b) repeated here, what occurs in the new information position bears the location role. The other arguments, agent and theme, are both ranked higher in the thematic hierarchy than location, thereby interpreted as old information. Note, however, neither of them is pronominal, violating the givenness hierarchy. This is the reason why this sentence is considered ill-formed.

- (8b) *Na'e kai ['i he peito]_i 'e Mele 'a e ika t_i.
 PST eat in REF kitchen ERG Mele ABS REF fish
 'Mele ate a fish in the kitchen.'

Agent >	(Recipient >)	Theme >	(Goal >)	Location
*[-pron]		*[-pron]		Info foc

In contrast, (10), which is grammatical, differs from (8b) minimally in that the agent argument is realized as a pronoun.

- (10) Na'a ne kai ['i he peito]_i 'a e ika t_i.
 PST 3.S eat in REF kitchen ABS REF fish
 'He ate a fish in the kitchen.'

Agent >	(Recipient >)	Theme >	(Goal >)	Location
[+pron]		*[-pron]		Info foc

Considering (10), we may postulate that the pragmatic requirement in question can be violated once, but only once.

4.2. Scrambling of Goal PPs

Let us turn to goal PPs. Consider (9) repeated here.

- (9) Na'e 'oange [kia Sione]; 'e Mele 'a e ika t_i.
 PST give to.PERS Sione ERG Mele ABS REF fish
 'Mele gave a fish to Sione.'

Agent >	Recipient >	Theme >	(Goal >)	(Location)
*[-pron]	Info foc	[-pron]		

Here again, a PP is scrambled over two NPs: agent and theme. Note, however, the thematic role of the scrambled PP is that of recipient. Since agent is ranked higher than recipient, the fact that the agent argument is not a pronoun raises a problem. However, the non-pronominal theme is not problematic, for theme is ranked lower than recipient. The relevant pragmatic requirement is violated only once in (9). Hence, the sentence is judged grammatical.

We have seen that a simple solution to the complicated facts about the PP-scrambling in Tongan becomes available if we take pragmatic factors into consideration. All the ungrammatical instances of PP-scrambling we have seen can be explained in term of the pragmatic constraint that requires that old information be realized in a morphologically reduced form. The apparent asymmetry between ergatives and absolutes arises due to the fact that the ergative generally corresponds to the agent. Thus, scrambling of a PP across an ergative subject results in the violation of the postulated pragmatic constraint in an unmarked context, i.e., involving a transitive verb and a non-pronominal theme argument. The other seemingly syntactic asymmetry, the one between adjuncts and arguments, is also accountable in a similar fashion. Adjunct PPs are generally locations or spatial goals, while argument PPs are recipients. The essential difference between the two classes is obvious given the thematic hierarchy proposed in the current analysis: relative to theme, location and spatial goal are lower, but recipient is higher. As a result, scrambling of adjunct PPs (i.e., locations and spatial goals) is always contingent on the morphological status of the theme argument, while scrambling of argument PPs (i.e., recipients) is unaffected whether the theme is pronominal or not.

4.3. Further Support for the Information Focus Analysis

There is some additional evidence to support the information focus analysis put forward in this paper. First set of evidence concerns the acceptability of theme-scrambling in a construction that contains a PP. When the PP corresponds to the recipient, scrambling of the theme argument is less acceptable, as illustrated in (15). In the current approach, this fact is expected. In (15), two higher ranked NPs are not realized as pronouns, failing to satisfy the relevant pragmatic condition.

- (15) ?*Na'e 'oange [‘a e tohi]_i ‘e Sione t_i kia Mele.
 PST give.DIR.3 ABS REF book ERG Sione to.PERS Mele
 ‘Sione gave a book to Mele.’

Agent >	Recipient >	Theme >	(Goal >)	(Location)
*[-pron]	*[-pron]	Info foc		

In contrast, scrambling of the theme argument is more acceptable when the thematic role of the PP is that of spatial goal. Compare (16) with (15) above.

- (16) Na'e lī [‘a e veve]_i ‘e Mele t_i ki tu‘a.
 PST throw ABS REF rubbish ERG Mele to outside
 ‘Mele threw the rubbish outside.’

Agent >	(Recipient >)	Theme >	Goal >	(Location)
*[-pron]		Info foc	[-pron]	

In (16), information focus is on the theme argument. The non-pronominal agent violates the relevant pragmatic requirement. The fact that the goal is not pronominal raises no problem, however, for it is ranked lower than the item bearing information focus. As a result, the sentence is grammatical.

Furthermore, it turns out that scrambling of a PP is less acceptable when the PP in question is not a recipient, but a spatial goal. Compare (17) below with (9).

- (17) ?*Na'e lī [ki tu‘a]_i ‘e Mele ‘a e veve t_i.
 PST throw to outside ERG Mele ABS REF rubbish
 ‘Mele threw the rubbish outside.’

Agent >	(Recipient >)	Theme >	Goal >	(Location)
*[-pron]		*[-pron]	Info foc	

In (17), information focus falls on the spatial goal. Thus, the two NPs, agent and theme, are both ranked higher than the new information. The lower acceptability of this sentence is due to the fact that the two higher ranked phrases are not realized as pronouns, violating the pragmatic requirement.

Another set of facts concerns the effect of scrambling on the interpretation of the DPs involved in terms of definiteness. It should be noted that in Tongan, definiteness is indicated phonologically. The so-called “definite” articles *he/e* in Tongan only indicate referentiality. Definiteness is indicated by what Churchward (1953) called definitive accent. Informally, the relevant phonological process appears to be stress shift: in a definite DP, stress falls on the final

vowel rather than the regular penultimate.¹¹ The so-called definitive accent is indicated in standard Tongan orthography by an acute accent symbol (´): *he siana* ‘a man’ vs. *he sianá* ‘the man’. The use of this symbol is inconsistent in informal writing, however. Therefore, generally, in writing, an NP with a definite article, e.g., *he siana* in (18) below, is ambiguous in terms of definiteness. In the current investigation, the definitive accent symbol was intentionally omitted in the sentences used to elicit data. The informants were asked to read each sentence aloud so that definitive accent would be assigned as desired. When a given DP is pronounced with or without definitive accent, the informant was asked to judge the sentence with the alternative pronunciation. It turns out that there is a correlation between scrambling and the interpretation of NPs.

Scrambled goals tend to be interpreted as indefinite rather than definite. In (18), the preferred pronunciation of the scrambled PP is one without definitive accent.

- (18) Na‘e ‘oange [ki he siana/?sianá]_i ‘e Sione ‘a e ika t_i.
 PST give.DIR.3 to REF man ERG Sione ABS REF fish
 ‘Sione gave a fish to a/?the man.’

This contrast can be naturally explained if we assume that the scrambled PP is new information and is more likely to be indefinite than definite.

In contrast, the theme in situ in the same construction tends to be interpreted as definite rather than indefinite. The preferred pronunciation of the theme is *e iká* with definitive accent instead of *e ika*.

- (19) Na‘e ‘oange [ki he siana]_i ‘e Sione ‘a e ?ika/iká t_i.
 PST give.DIR.3 to REF man ERG Sione ABS REF fish
 ‘Sione gave ?a/the fish to a man.’

This supports our claim that old information remains in situ instead of moving to the information focus position, [Spec, T]. Had the theme argument *e ika* been new information, it would have been scrambled instead of the goal argument.

5. CONCLUSION

The preceding discussion has shown that the scrambling facts in Tongan can be fully understood only if pragmatic as well as syntactic factors are taken into consideration. Scrambling in Tongan is primarily a syntactic operation: it moves a constituent that represents new information to the designated information focus position, [Spec, T]. It is assumed that two features on T are responsible for this operation: the EPP and information focus. A given item that has a matching

¹¹ Taumoeolau (2002) proposes that the relevant phonological process is in fact final vowel lengthening rather than stress shift. Her intuition as a native speaker is corroborated by the phonetic investigation by Anderson and Otsuka (2003), in which a definitively accented vowel is shown to be significantly longer than its unaccented counterpart.

feature, [information focus], enters into an Agree relation with T. The EPP on T then licenses the movement of the category in question. This much is syntactically constrained. The relevant movement must abide by the economy principles such as Last Resort and the Minimal Link Condition (Chomsky 1995).

At the same time, there is compelling evidence that this syntactic operation is subject to pragmatic filters. That is, even if the output of a given derivation is syntactically legitimate (i.e., violating no economy principles and leaving no uninterpretable features unchecked), the sentence can still be judged ill-formed. Descriptively, illegitimate instances of scrambling involve scrambling of a PP over an ergative subject. Syntactically, this seems to suggest that scrambling in Tongan shows an ergative-absolutive asymmetry and an argument-adjunct asymmetry. However, we have shown that neither of these syntactic descriptions is entirely accurate. On the one hand, scrambling over an ergative subject is possible if the PP is the recipient argument of a ditransitive verb. On the other, scrambling of an adjunct is permissible in an intransitive construction and also in a transitive construction with a pronominal subject. Moreover, we have also observed that scrambling of the direct object in a ditransitive construction results in degraded acceptability. It is thus impossible to formulate a single syntactic condition to rule out all these illicit instances of scrambling. We have shown that these complex facts can be reduced to a single constraint if we assume that the relevant factor is not syntactic, but pragmatic. Namely, there is a pragmatic requirement that old information be realized in a morphologically reduced form, reflecting the givenness hierarchy.¹²

Our findings demonstrate some theoretical implications regarding the relation between syntax and pragmatics. First, it suggests that the interaction between syntax and information structure is not limited to the interface level; rather, information structure can also affect syntactic processes. In the current study, it is argued that some information structural factors can be formally incorporated in syntax as formal features: e.g., [information focus] licenses scrambling, a syntactic operation. Second, it also suggests that pragmatic considerations can affect not only the felicitousness, but also the grammaticality of a given construction. Unless syntax can provide some equally simple and comprehensive solution to the scrambling phenomena in Tongan, it seems necessary to permit more dynamic, two-way interaction between pragmatics and syntax. Just how independent syntax should be, and actually is, from pragmatics is a question calling for further research.

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¹² One remaining issue is the asymmetry between the two types of oblique objects: while *ki*-PPs can be freely scrambled, scrambling an *i*-PP is generally considered impermissible, as shown in (7) above. At this point, I have no explanation for this phenomenon. I hope to return to this issue in future research.

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