

## Canonical Types and Noun Phrase Configuration in Fijian\*

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### 1. Introduction

This paper examines a set of observations governing the distribution of nominal expressions in Fijian clause structure. Special attention is given to the semantic types of the nouns involved, especially in establishing their patterning in the positions for the grammatical functions object and subject. The object position is shown to be more restricted in Fijian, essentially limited to proper names and certain pronominals. This asymmetry is interpreted in a type-theoretic framework as a consequence of the well-motivated syntactic asymmetry, namely that subjects take scope over objects. In sum, the two main claims put forth in this paper are:

- (i) The restrictions on possible objects and subjects in Fijian may be stated in terms of restrictions of possible semantic types;
- (ii) The observed non-uniformity in the distribution of nominals may be explained as an asymmetry inherited from Fijian clause structure.

#### 1.1 Object-Subject Asymmetries

Many contemporary syntactic frameworks posit an asymmetric structural relationship between the predicate and the nominal expressions of a sentence: object NPs generally form a constituent with the predicate which excludes the subject. In the domain of noun phrase quantification, there is a related asymmetry in the way that quantifier phrases are interpreted. Quantifier phrases (QPs) are generally treated as denoting sets of sets (Barwise and Cooper 1980), hence, they are of type  $\langle\langle e \ t \rangle, t \rangle$ . Because of this type specification, subject QPs may combine directly with the intransitive verb phrase via Functional Application in any Montague-style semantics (1a). Interpreting object quantifiers, however, is more complicated, essentially because of the type mismatch between the QP and the local transitive verb of type  $\langle e, \langle e \ t \rangle \rangle$  (1b).

- (1) a.  $[ \text{QP}_{\langle\langle e \ t \rangle, t \rangle} \text{ VP}_{\langle e \ t \rangle} ]_{\text{IP}}$       b.  $[ \text{V}_{\langle e, \langle e \ t \rangle \rangle} \text{ QP}_{\langle\langle e \ t \rangle, t \rangle} ]_{\text{VP}}$

In order to compute the interpretation of an object QP, together with a transitive verb, additional mechanisms are called for (e.g., either Quantifier Raising as employed in Kratzer and Heim 1994, or Type-Lifting as in the approach taken in Partee and Rooth 1983 and Hendriks 1988). The important point here is that the asymmetric syntactic representations for the grammatical functions of a sentence are inherited by the semantic component, which in turn requires special effort in calculating the meaning of an object QP.

The force of this point is not to suggest a weakening of the homomorphism requirements on the mapping from the syntax to the interpretive component. Nor is it to call into question the widely believed assumption that subjects asymmetrically take scope over objects—there are very good

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reasons for wanting to maintain these assumptions. Rather, this observation will provide the necessary background for posing the question which will serve as the point of departure in this paper. Assuming the canonical or 'unmarked' types for nominal and predicative expressions given in (2), the leading question is, what if a given language lacked the linguistic devices necessary for quantifying over nominals in the object position? What would this 'quantificationally defective' language look like?

- (2) CANONICAL TYPES
- |    |                   |   |
|----|-------------------|---|
| a. | quantifier phrase | $\langle\langle e \ t \rangle, \ t \rangle$ |
| b. | transitive verb   | $\langle e, \langle e \ t \rangle \rangle$  |
| c. | intransitive verb | $\langle e, \ t \rangle$                    |
| d. | pronoun, trace    | $\langle e \rangle$                         |
| e. | name              | $\langle e \rangle$                         |

The type-theoretic framework makes the clear prediction that the distribution of nominal expressions would be more restricted in the object position than in the subject position. This is because possible objects are restricted to just those elements which may combine directly with the transitive verb expression via function-argument application. Because transitive verbs denote a function from entities of type  $\langle e \rangle$  to predicates of type  $\langle e \ t \rangle$ , only expressions like pronouns, proper names, and potentially null elements, may be interpreted in a position closely bound to the transitive verb. In contrast, the set of possible subjects in this hypothetical language will include all the expressions which are in the set of possible objects, in addition to generalized quantifiers, which may combine directly with the intransitive verb because of its higher type.

- (3) POSSIBLE GRAMMATICAL FUNCTIONS
- |    |                    |   |
|----|--------------------|---|
| a. | Possible objects:  | entities of type $\langle e \rangle$  |
| b. | Possible subjects: | entities of type $\langle e \rangle$ , or $\langle\langle e \ t \rangle, \ t \rangle$ |

It should be emphasized here that the restrictions on possible objects are semantic in nature, but to be more thorough, the asymmetric syntactic representations for the core grammatical functions also factor in establishing this claim. It is only because the direct object is more closely bound to the transitive verb in the syntax that the semantic restriction applies to this specific grammatical function. The general prediction, then, within this view of the syntax-semantics interface, is that nominals closely bound to transitive verb predicates will be restricted to entities denoting individuals in a language lacking certain quantificational devices. The main goal of this paper is to provide empirical evidence in support of this claim from Fijian clause structure.

## 1.2 *Pronominal Argument Languages*

Before formulating more specific research questions for this paper, it will be helpful to draw a parallel between the semantic restriction on the object position and some of the properties of so called pronominal argument languages. In an effort of provide a more restrictive theory for syntactic parameters of configurationality, a group of researchers have approached a wide range of languages with the guiding assumption that the use of pronominals in a language will be a factor in determining the structural positions for nominal expressions (Jelinek 1984, 1989, 1993, 1995a, 1995b, Baker 1994, 1995, Junker 1994, Heinholtz and Russell 1995). The languages under examination here generally have a rich pronominal system, free, or quasi-free word order, and allow some nominal expressions to freely drop. While the specific proposals differ in the details, they all share one central hypothesis, namely that the agreement markers in these languages are pronominal arguments which function in some sense as the primary arguments of the predicate. This assumption leads to the limitation of noun phrase constituents to positions adjoined to the predicate phrase because the canonical argument positions are supplanted by the agreement morphology. To

summarize the results of this hypothesis, the interpretation of the agreement morphemes as pronominal arguments has implications for the syntactic behavior of other nominals in the sentence, effectively forcing the full NPs into adjoined positions where they may freely drop or permute to different positions in the sentence.

Now that some of the syntactic observations characterizing this class of languages have been sketched, we may consider the type-theoretic interpretation of these observations which will be developed in this paper. Pronominal elements refer to individuals, and so they denote entities of type  $\langle e \rangle$ . In PA languages, the agreement morphemes are analyzed as pronominal arguments, and therefore they will be analyzed as type  $\langle e \rangle$  in the semantic component. With these assumptions in place, the main structural characteristics of pronominal arguments made stated roughly as follows.

(4) PRONOMINAL ARGUMENT LANGUAGES

- a. Nominals more closely bound to the predicate must be of type  $\langle e \rangle$ .
- b. Nominals in a more distant relationship to the predicate may be of a higher type.

The requirement in (4a) restricts the set of elements bound to the verb to pronouns (or potentially proper names), effectively excluding common nouns and quantifiers from acting as arguments of the verb. This fact may now be interpreted on a par with the observation that objects are restricted to elements of type  $\langle e \rangle$  in the hypothetical language described above: these are the only elements which may directly combine with the predicate to yield a well-formed expression for the larger clause. Furthermore, the observation in (4b) may be viewed in the same light as the possibility of interpreting subject QPs *in situ*—in both cases, the position of the noun phrase relative to the predicate enables it to combine with the predicate without the aid of any special semantic rules.

There are a few qualifications to be made before moving on. First, the semantic type restriction on possible arguments for the predicate in a PA language seems to apply only to the internal argument, that is, the argument which will be applied first to the transitive verb. Combining the transitive predicate with an agreement marker results in a meaning for the predicate phrase like that of an intransitive verb:  $\langle e, \langle e \ t \rangle \rangle + \langle e \rangle \rightarrow \langle e \ t \rangle$ . This partially saturated predicate may now combine with either an element of a generalized quantifier type meaning, or an expression of an individual type—both are permitted by the elementary rules of semantic composition. Therefore, the assumptions employed above in the type-theoretic approach would seem to predict, nothing else said, a non-uniform restriction on possible arguments which is not generally attested in PA languages. The state of affairs in Fijian, however, seems to call for such a non-uniform application of the semantic restriction. Possible objects in Fijian are more restricted than possible subjects, justifying the type-theoretic approach to PA languages which is *inherently* asymmetric.

A second clarification, to be elaborated on below, is that the type-theoretic restriction on possible arguments allows a wider class of elements than has been observed to occur in argument positions in PA languages. In particular, the requirement that predicates combine with elements of type  $\langle e \rangle$  not only allows pronominal objects, but also proper names. Names are generally treated as rigid designators, following Kripke 1972, and hence they are of type  $\langle e \rangle$  as well. While the distribution of names relative to pronominal expressions has received little attention in recent work on PA languages, a fundamental observation in Fijian syntax is that proper names pattern like pronominals in a wide range of contexts. For example, object pronouns directly follow transitive verbs (5), as do proper names when the object refers to a specific person in the utterance context (6).

- (5) e    saa    rai-ci    **ira**    a    gone    a    qase  
 3sg   ASP    see-TR   3pl    D    child    D    old person  
 'The old person saw the children' (unmarked interpretation)

- (6) a.    era    rai-ci    **Jone**    tiko    na    gone    (Bauan, Pawley 1983)  
 3pl    see-TR   Name   ASP    D    child  
 'The children are watching John'

- b. au aa tu'u-ni **Eroni** vei Nana Maa (Boumaa, Dixon 1988)  
 1sg ASP tell-TR Name P Name  
 'I told about Eroni to Nana Maa'

The importance of studying this observation alongside other observations restricting the behavior of nouns is that it evidences the generality of the semantic restriction on internal arguments, namely that they may only be expressions of type <e>. In sum, Fijian is an interesting case to study with the type-theoretic approach to NP configurationality in mind because of the observed asymmetries in the distribution of nominals and the fact that proper names and object pronouns pattern as a class.

### 1.3 Overview

The rest of this paper has two major sections and a final section which summarizes the main results of the paper. Section 2 presents a sketch of Fijian clause structure and employs the guiding idea that the subject and object markers are pronominal arguments of the verb. This hypothesis will be shown to account for a range of characteristics of Fijian syntax, namely the primacy of the grammatical function (GF) markers, the optionality of full NPs, and the absence of overt case marking. Two problems for this hypothesis are then brought to the fore, namely the divergent phonologies of the GF markers and the semi-predictable character of word order in Fijian. Section 3 proposes to address these problems by giving the GF markers different syntactic classifications, which in turn leads to a non-uniform syntactic parsing of the subject and object. This asymmetric clause structure is finally shown to provide an adequate structure for characterizing the distribution of nominal expressions, correctly limiting possible objects to individual denoting expressions.

## 2. Fijian as a Pronominal Argument Language

In this section, a brief sketch of Fijian clause structure is given (§2.1) and subsequently the Pronominal Argument Hypothesis (PAH) is developed and employed as a means of accounting for some basic features of Fijian syntax. In §2.2, a clear statement of this hypothesis is given, and then it is applied to Fijian in §2.3. The summary in §2.4 lists the successes and failures of using the PAH.

### 2.1 A Sketch of Fijian Clause Structure

Fijian is a Malayo-Polynesian language spoken in the island group of Fiji.<sup>1</sup> Typologically, it is a verb (predicate) initial language with very little inflectional morphology and an elaborate system of pronominal marking. The major type of clause in Fijian contains a predicate head and one or two grammatical function (GF) markers which give information about the subject of the clause, and if the predicate is transitive, information about the object. The subject marker occurs clause initially, and may be separated from the predicate by one or more particles giving temporal or aspectual information about the event described by the sentence. If the information about the object of the verb comes in the form of a GF marker, it directly follows the transitive verb, and this object marker may be followed by a set of post-head modifiers or adverbials. Full NPs may also

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<sup>1</sup>Most of the example sentences used in this paper are drawn from the descriptions and texts given in Dixon 1988, and so they represent the western dialect of Boumaa. All of the observations supported by these examples are found in the standard Bauan dialect, and probably many other nonstandard dialects. The references consulted in making these comparisons were: Geraghty 1983, Schütz 1986, Arms 1974, Pawley 1986 [1975], Churchward 1941, and Milner 1956.

occur clause finally, and they are interpreted 'in apposition to' a grammatical function marker, meaning that they expand the reference of a GF marker.

(7) GF<sub>SUB</sub> (Tns/Asp) Pred (-TR GF<sub>OBJ</sub>) (Adv) (NP) (NP)

The rest of this section will test out the hypothesis that the GF markers are pronominal arguments and that the clause final NPs are in adjunct positions. It will be shown that the morphological analysis of person pronouns in Fijian supports such an analysis, and further, it will have positive consequences the fact that the appositional NPs are always optional and are not marked for morphological case. The semi-predictable word order patterns in Fijian, however, complicates the analysis, which is also discussed below.

Before studying Fijian in greater detail, however, it is necessary to establish the cluster of properties the PAH is intended to account for. This is done directly below.

## 2.2 *One Type of Nonconfigurational Language*

Beginning with Hale 1983, the term 'nonconfigurational' has been used to characterize languages with syntactic features strikingly different from English and other well-known Indo-European languages. While Hale provided a long list of syntactic traits (9), the main tests for diagnosing a language as nonconfigurational (NC) has in practice been: (a) free word order, (b) use of discontinuous expressions, (c) and null anaphora.

- (9) DIAGNOSTICS OF NONCONFIGURATIONALITY (Hale 1983)
- a. free word order
  - b. the use of discontinuous expressions
  - c. free or frequent pronoun drop
  - d. lack of NP movement transformations
  - e. lack of pleonastic NPs
  - f. use of a rich Case system
  - g. complex verb words of verb cum AUX systems

The 'Dual Representation' approach taken in Hale's work correlated these characteristics by defining a model which applied syntactic constraints at two distinct levels of representation, namely the level of lexical structure (LS) and the level of phrase structure (PS). The set of syntactic constraints, chiefly Chomsky's 1981 Projection Principle, is said to hold in NC languages only at the level of LS, allowing, for example, NPs to delete or permute in linear order in the mapping from LS to PS. In sum, the constellation of structural characteristics defining NC languages is the result of a very restrictive theory of the mapping of lexical structures to phrase structures.

The wholesale clustering of these features has been shown to be empirically unjustified on the grounds that languages simply do not group into two discrete groups (see Speas 1990 and references therein). For example, Italian is a language with relatively strict word order patterns and it lacks discontinuous expressions, and yet this language licenses null anaphora and has a rich inflectional system. Malayalam, on the other hand, is a language which might be characterized as a NC language in having free word order and pro-drop, but it doesn't allow discontinuous NPs and has a rather impoverished agreement system. The observation that natural languages may not be distinguished solely on the basis of the categories, configurational and nonconfigurational, has lead Speas to posit a set of distinct parameters responsible for these non-correlating syntactic features.

(10) CONFIGURATIONALITY PARAMETERS (Speas 1990)

- a. Case Morphemes
- b. Null Topic
- c. Obligatory Agreement
- d. V-to-I in syntax
- e. Incorporated pronouns
- f. LF Focus
- g. KPs modify
- h. pronouns precede antecedents
- i. c/m command

The Pronominal Argument Hypothesis may be viewed as a middle ground between the wholesale correlation of syntactic properties predicted by the Dual Representation approach, and the Configurationality Parameters Theory, which predicts, by and large, no necessary correlations. By making the agreement morphemes the primary arguments of the predicate, obligatory agreement can be positively correlated with a limited set of configurational characteristics.

(11) THE PRONOMINAL ARGUMENT HYPOTHESIS (PAH)

Agreement morphemes are pronominal, acting as the primary arguments of the predicate.

The analysis of the agreement morphemes as pronominal arguments leads to an analysis of the full NPs as adjuncts. The standard account of this analytical move is that the pronominal arguments absorb abstract morphological Case, within the theory of morphological Case outlined in Chomsky 1981, and therefore, since the Case requirements for the NPs may not be satisfied in an argument position, PA languages compel adjunction of the full NPs to the clause (Jelinek 1984, 1993, Baker 1994). One of the main issues to be taken up in section 3 is how to establish the primacy of the pronominal arguments without these Case-theoretic assumptions.

The consequences of the PAH for clause structure may be examined, however, independently from the framework within which it is implemented, so let us now become clear on how the adjunction of the NPs constituents accounts for a cluster of nonconfigurational features.

(12) A CLUSTERING OF PROPERTIES

- a. Pronominal arguments (~ Rich agreement)
- b. NPs may freely 'drop' (~ Null anaphora)
- c. Free word order
- d. Absence of overtly marked morphological case

Because adjoined NPs are interpreted as modifiers, they are not necessary components of the sentence, and so full NPs in adjoined positions may be freely dropped. Also, free word order is a consequence of NP adjunction. The set of requirements governing the sequencing of words in a sentence has always been more rigorously defined for arguments than for adjuncts. Some caveats should of course be mentioned here, particularly in the distribution of different classes of adverbs, but the central idea is clear: argument positions (A-positions) represent canonical positions for the grammatical functions, whereas, adjoined positions (A'-positions) are less fixed in their linear order (Jelinek 1984 *et seq*). Lastly, the PAH has also been argued to account for the absence of case marking on the full NPs (Baker 1995). Case morphology is usually assumed to be assigned, or checked, under strict structural conditions ( e.g., Government in the framework of Government and Binding syntax, or in a Spec-Head relation employed in the Minimalist Program), and these

conditions are not met between the predicate head and an adjoined NP. To summarize, the PAH predicts that if the agreement morphemes are analyzed as the primary arguments of the predicate, full NPs can only occupy A'-positions. This results in the cluster of syntactic properties given above in (12).

A few comments are in order regarding some additional patterns observed in PA languages. The PAH has been said to account for the use of discontinuous expressions in various languages, the idea being that more than one NP can refer to the same entity in adjoined positions (Jelinek 1984). This claim has been challenged in recent work, both on empirical and theoretical grounds (Baker 1994, Heinholtz and Russell 1995), and the results seem clear that discontinuous constituency is not a reliable feature of PA languages. Also, it has been claimed that PA languages lack certain types of quantification (in Jelinek 1995a for Straits Salish, and in Baker 1995 for Mohawk), a claim which has been refuted in recent work by Heinholtz and Russell 1995. In light of these findings, it seems more prudent to ignore the use of quantification in these languages for the moment. To close, the set of characteristics listed above in (12) will be the diagnostics employed below in considering the usefulness of the PAH in describing Fijian clause structure.

## 2.3 *Pronouns and Configurationality in Fijian*

### 2.3.1 The Pronominal System

The first step in applying the PAH to Fijian clause structure is to consider the hypothesis that the agreement morphemes, or what have been referred to above as the grammatical function (GF) markers, may be interpreted as pronominal arguments of the predicate. To this end, let us first examine the GF markers alongside the regular cardinal pronouns (i.e. pronouns which take an article when they head their own noun phrase). The general observation is that the GF markers are either homophonous, or morphologically related to, the cardinal pronouns.

#### (13) PERSONAL PRONOUNS (from Dixon 1988, ignoring some dialect mixing)

SINGULAR	1		2	3
subject	<i>au ~ u</i>		<i>o</i>	<i>e</i>
object	<i>au</i>		<i>i'o</i>	<i>e'a</i>
cardinal	<i>yau</i>		<i>i'o</i>	<i>e'a</i>
DUAL	1 incl.	1 excl.	2	3
subject	<i>(e)taru</i>	<i>'eirau</i>	<i>(o)mudrau</i>	<i>(e)rau</i>
object	<i>'eetaru</i>	<i>'eirau</i>	<i>'emudrau</i>	<i>rau</i>
cardinal	<i>'eetaru</i>	<i>'eirau</i>	<i>'emudrau</i>	<i>(i)rau</i>
PAUCAL	1 incl.	1 excl.	2	3
subject	<i>tou</i>	<i>'eitou</i>	<i>(o)mudou</i>	<i>(e)ratou</i>
object	<i>'etatou</i>	<i>'eitou</i>	<i>'emudou</i>	<i>iratou</i>
cardinal	<i>'etatou</i>	<i>'eitou</i>	<i>'emudou</i>	<i>(i)ratou</i>
PLURAL	1 incl.	1 excl.	2	3
subject	<i>(e)ta</i>	<i>'eimami</i>	<i>(o)munuu</i>	<i>(e)ra</i>
object	<i>'eta</i>	<i>'eimami</i>	<i>'emunuu</i>	<i>ira</i>
cardinal	<i>'eta</i>	<i>'eimami</i>	<i>'emunuu</i>	<i>(i)ra</i>

Ignoring the singular forms for the moment, the object markers are generally the same shape as the cardinal pronouns, with the exception of the optionality of *i* observed initially in the third person forms for the cardinal pronouns. Furthermore, a morphological analysis of the nonsingular forms has been advanced in which the object markers and the cardinal pronouns, on the one hand, relate to the subject markers in that they share the same basic pronominal roots.

## (14) NONSINGULAR PRONOMINAL ROOTS (Dixon 1988)

	1 incl.	1 excl.	2	3
dual	taru	irau	mudrau	rau
paucal	{ta, Ø}tou	itou	mudou	ratou
plural	ta	imami	munuu	ra

The remainder of the pronominal forms may be analyzed as drawing from the roots in (14) and formed by prefixing the (sometimes optional) vowels shown in (15). In only one case is there a need to resort to disjunctive bracketing, marking the omission of *ta* in the subject marker for the first person inclusive paucal form. The morphological breakdown proposed below for the nonsingular pronouns is again inspired by Dixon's work, but it differs in treating the object markers and cardinal forms as a unified class.

(15) MORPHOLOGICAL ANALYSIS FOR NONSINGULAR PRONOUNS<sup>2</sup>

	1 incl.	1 excl.	2	3
Sub	(e)+R	'e+R	(o)+R	(e)+R
Obj, Card	'e+R	'e+R	'e+R	{i, (i)}+R

To summarize the analysis, while there are a few minor irregularities, the morphological relatedness of the subject markers and the object and cardinal pronouns stems from the assumption that they are formed with the same pronominal roots. The homomorphism observed between the object markers and the cardinal pronouns is reflected in the claim that they employ the same basic roots, and further, that they receive the same prefixal vowels.

Moving now to the singular forms, it is simply noted that the object and cardinal forms differ subtly in the first person pronouns, cf. *au* with *yau* from the chart in (13). The singular subject markers, on the other hand, may generally be monosyllabic, which highlights a second important difference between the subject markers and the object and cardinal pronouns: the members of the latter class always contain at least two vowels. One reflex of this observation is that the object markers and the cardinal pronouns are always self-standing phonological words, whereas the monosyllabic subject markers are either proclitic to subsequent phonological words, or bound to a preceding complementizer (Dixon 1988: §3.2.4). Section 3 will discuss the syntactic implications of the different phonological status of the subject and object markers. At this point it is sufficient to say that the singular personal pronouns do not contradict the main conclusion derived directly above, namely that the object markers and the cardinal forms form a class which excludes the subject markers.

To return to the main theme of this section, the morphological relatedness of the GF markers to the regular personal pronouns is consistent with the claim that the GF markers are pronominal arguments. Because all the nonsingular pronouns share a common set of roots (a claim which can be extended to the singular forms), the pronominal status of these forms, presumably encoded in their semantic type, may be attributed directly to the roots, which has the positive consequence of providing for greater parsimony in the grammar of the pronominal system. In sum, the morphological relationships observed across the paradigms listed above supports a treatment of the GF markers as pronominals, on a par with the cardinal pronouns.

<sup>2</sup>Clarification on the bracket notation is in order: the parentheses "()" are used to indicate that the initial vowel is simply optional, while "{}" represents the disjunction between prefixing *i* to the object pronouns or the optional prefixation of *i* with the cardinal forms.

### 2.3.2 Appositional Mode

If the Pronominal Argument Hypothesis is correct for Fijian, the analysis of the GF markers as pronominal arguments should compel the adjunction of full NPs, with the effect that their use is optional. Full NPs are never necessary elements of Fijian sentences—this is a fundamental property of Fijian clause structure referred to as 'appositional mode'. The following discussion will show how this mode of sentence construction is employed by first showing how 'basic sentences' (or "predicate phrases") are formed, and then how the clause final full NPs may be added to the basic sentence via appositional mode.

Simple indicative clauses are formed in Fijian by combining a verb (or a predicate of a different word class) with GF markers giving person and number information about the subject and object of the sentence. Also, transitive verbs are formed by applying a transitive suffix (-TR) to a bare intransitive root, as shown in the examples below.

- (16) a.     au     rai  
          1sg    see  
          'I am looking'
- b.     au     rai-ca  
                  1sg    see-TR  
                  'I see (him/her/it)'
- (17) a.     au     la'o  
          1s     go  
          'I am going'
- b.     au     la'o-va  
                  1sg    go-TR  
                  'I am going for (it...)'

Reference to the object of a transitive predicate may be expressed by an object marker which must directly follow the transitive suffix. Object markers are distinguished from cardinal pronouns in that they do not take an article. Thus, *o ira* is unacceptable as the expression of the third person plural object within the basic sentence in (18a).

- (18) a.     au     rai-ci   ira  
          1sg    see-TR  3pl  
          'I see them'
- b.     e     rai-ci   au  
                  3sg    see-TR  1sg  
                  'He/she sees me'

When the object is third person singular, the transitive suffix *-Ca* may be used (16-17). Elsewhere *-Ci* is used, along with an object marker (18).<sup>3</sup> Abstracting away from this allomorphic variation, the behavior of the GF markers may be stated as follows: (i) every clause contains a subject marker, and (ii) if the predicate is transitive, pronominal reference to the object may come in the form of an object marker, or the *a*-final transitive suffix may be used with the interpretation of the object as third person singular.

These basic sentences may combine with clause final NPs, with the result of expanding the reference of GF marker to which the NP is in apposition. For example, reference to the subject marker in a basic sentence like *era la'o* 'they go', may be further expanded by adding clause final NPs.

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<sup>3</sup>The standard analysis of the different forms of transitive suffixes is that third person singular is marked by a morphologically complex form containing the TR suffix and pronominal *a*, and the suffixal vowel *i* is elided in this merging (Arms 1973, Pawley 1986 [1975]).

- (19) a. era la'o [a gone]  
 3pl go D child  
 'The children are going' (lit. They are going, the child)
- b. era la'o [e walu a gone lalai yai]  
 3pl go 3sg eight D child little Dem  
 'These eight little children are going'

The appositional mode of constructing larger sentences from basic sentences is not limited to the expansion of the reference of the subject marker. As shown by the following examples, a clause final NP may be interpreted in apposition to an object marker. The sentences in (20) are in fact ambiguous, with the anaphoric reference back to a GF marker determined by the context in which the sentence is used.

- (20) a. e rai-ca [a gone]  
 3sg see-TR D child  
 'he/she/it sees the child' or 'the child sees him/her/it'
- b. e rai-ci ira [a gone]  
 3sg see-TR 3pl D child  
 'he/she/it sees the children' or 'the child sees them'

The ambiguity of reference of the clause final NPs is also evident in rare sentences with two NPs.

- (21) e rai-ca [a gone] [a cauravou]  
 3sg see-TR D child D youth  
 'The youth sees the child' unmarked interpretation  
 'The child sees the youth'

While the clause final NP is typically interpreted as expanding the meaning of the subject marker, the reverse interpretation is also found in texts, indicating that both VOS and VSO interpretations are possible.

This lesson on the appositional mode of sentence construction has summarized two fundamental characteristics of Fijian clause structure, namely that the clause final NPs are optional, and they are interpreted as expanding the reference of obligatory GF markers. These characteristics are positive diagnostics for PA languages because if the GF markers are analyzed as pronominal arguments, the clause final NPs must occur in adjoined positions. This analysis therefore makes the correct prediction that the full NPs should be optional.

### 2.3.3 Word Order

At this point, it seems quite valid to think of Fijian as a PA language: analyzing the GF markers on a par with the regular pronouns leads to an insightful characterization of the pronominal system. Furthermore, this analysis provides an avenue for explaining the appositional process of combining clause final NPs with a basic sentence. The PAH makes the additional prediction that the (adjoined) NP constituents will be freely ordered with respect to each other, and with respect to the predicate. As will be shown directly below, this is not entirely true in Fijian, and will constitute one of the complicating factors in the analysis of its clause structure.

It is difficult to postulate a basic word order pattern for Fijian, at least in examining the distribution of the full NPs. One problem is that sentences with more than one NP constituent are extremely rare. In the textual study conducted by Dixon, only about 2 or 3 percent of the clauses in texts had explicit object and subject NPs. And of those rare cases, roughly one in four sentences had fronted NPs, yielding the pattern [ NP Pred NP ]. Some conclusions may tentatively be drawn, however, from these sentences and the elicitation order of the NP constituents.

When a clause contains both an appositional subject and object NP, one observed pattern is for the appositional subject NP to be clause final. The following examples show this VOS word order pattern.

- (22) a. T4.170: 323  
 saa 'ila-a sara gaa [ a 'aa ] [ o mata.ni.vanua ]  
 ASP know-TR MODIF MODIF D thing D messenger  
 'Then the messenger knew the thing'
- b. T4.19: 334  
 Ia, ni saa rogo-ca [ o 'ea a+i- rogo qoo ] [ o Raatuu-i ca'au ],  
 Well, WHEN ASP hear-TR D 3sg D+ news THIS D Title-POSS reef  
 'Well, when the Raatuu of the reef heard the news, ...'
- c. T6.89a: 345  
 ...saa tu'u-na ti'o [ a o-na vosa ] [ o 'ea ]  
 ASP tell-TRASP D CLASSIF-3sg word D 3sg  
 '...(at this time), he spoke the following words'

Also, in elicitation sessions, Dixon found that his consultants most often gave VOS word order for sentences with more than one NP.

VSO word orders are also found, as with the following textual examples.

- (23) a. T6.32: 336  
 ...saa mani soli-a vuaa [ o Paatere Lorosio ] [ o 'ea a kuruse qoo ] ...  
 ASP THEN give-TR TO+3sg D Father Name D 3sg D cross THIS  
 '...and Father Lorenzo then gave this cross to him'
- b. T4.199: 326  
 Saa+qei faele.-ta'ina [ o 'ea ] [ a o-na moto ] ...  
 ASP+THEN file-TR D 3sg D CLASSIF-3sg spear  
 'Then he filed his spear...'
- c. T4.183: 325  
 Saa la'o mai, saa mai tu'u-na [ o 'ea ] [ a 'aa ]  
 ASP come HERE ASP COME tell-TR D 3sg D thing  
 e tu'u-na mai [ o Tui Waini'eli ] ...  
 3sg tell-TRHERE D King Place  
 'He has come here, he has come and reported the things that the kind of Waini'eli has said...'

Dixon concludes that a basic word order may not be determined on the basis of pattern frequency—sentences with two NPs are too infrequent, and sentences with VOS orders occurred with roughly

the same frequency as those with VSO patterns. The elicitation order is suggestive, however, of a basic VOS pattern, with the VSO order being derived by means of a rule of rightward NP shift. While there doesn't seem to be firm empirical ground in which to base a conclusion about the underlying word order, Dixon's tentative conclusion seems reasonable.

The distribution of NP constituents relative to so called 'peripheral constituents' (i.e., NPs introduced by prepositions that specify semantic roles like goal, addressee, instrument, etc.), is less restricted, however, as shown by the following examples. In the sentences directly below, a peripheral constituent (PC) precedes a NP in apposition to a subject marker.

- (24) a. T4.43: 310  
 Saa soli sara [ vei rau ] [ a 'ee-drau i'a ],  
 ASP give MODIF TO 3du D CLASSIF-3du fish  
 'amu sa la'o yadi.-va'i maa  
 THAT KIND ASP go choose-PASS THAT  
 'Their fish, which had been selected for them, was given to the two of them.'

- b. T4.44: 310  
 ...[ o ra ] viro wale mai [ i+na 'oro ] [ o ra a marama ] ...  
 D 3pl return MODIF HERE TO+D village D 3pl D woman  
 '...and they the women had to return home to (their) village...'

- c. T4.113: 318  
 Io, 'oto [ i qere ] [ o i'o tagane ]  
 Yes, lie AT THERE D 2sg man  
 'Yes, just keep lying there, you, fellow.'

The opposite order is attested in the next set of examples, however, showing that the position of the appositional subject NP relative to PCs is not strictly governed.

- (25) a. T4.45: 310  
 Saa tu'u-na ti'o [ o Raaluve.ni.Waini'eli ] [ vei Raavouvou.ni.Boumaa ]  
 ASP tell-TR ASP D Title TO Title  
 me 'ua ni va'a-.bera.bera.-ta'i i yaa,  
 SHOULD ASP THAT MAKE-slow-PASS AT THAT  
 a oo-drau va'a-.wati ee?  
 D CLASSIF-3du MAKE-spouse TAG

'The Raaluve of Waini'eli told the Raavouvou of Boumaa that it should not be delayed, their marriage, eh?'

- b. T4.72: 314  
 La'o yane o rau saa yaco ti'o [ a maarau ] [ mai Narova ]  
 go THERE D 3du ASP happen ASP D celebrations AT Place  
 'The two (youths) went there, and the festivities were in full swing at Narova.'

- c. T4.114: 318  
 Rubica sobu [ o 'ea ] [ i+na sautabu ] ..  
 go fast DOWN D 3sg TO+D chiefly graveyard  
 'He hurried down to the chiefly graveyard, ...'

While the texts in Dixon 1988 do not provide sufficient data to show the same word order behavior for appositional object NPs relative to PCs (obviously due to the rare cooccurrence of both constituents in the same sentence), Dixon clearly states (p. 244) that the same free word order is attested in this case, "Peripheral NPs may come in any order—both among themselves and in relation to the core constituents, subject and object."

Returning to the predictions of the PAH, the semi-predictable word order patterns fleshed out in the above discussion are only partially consistent with the expectations of this hypothesis. While word order permutations were observed in deriving a VSO pattern from the basic VOS order, and the patterning of the peripheral constituents relative to clause-final NPs was shown to be relatively free, Fijian still shows a strong preference for predicate initial clauses. These results should make one cautious in the applying the PAH to Fijian clause structure, as the assumptions inherent to the PAH predict free word order for the core constituents of the sentence.<sup>4</sup>

### 2.3.4 Absence of Case Marking and Agreement

One last observation relevant to the adjunction of NPs predicted by the PAH is the absence of morphological case, or any kind of inflectional marking for that matter, on the appositional NPs. Fijian has no case morphemes and so the clause final NPs are not marked overtly for morphological case.

Neither person nor number markings are present on the appositional NPs either. As shown by the following examples, the number of the entities referred to by the GFs are determined solely by the pronominal markers closely bound to the predicate.

- (26)
- |        |      |            |                                 |
|--------|------|------------|---------------------------------|
| e      | la'o | [ a gone ] | 'the child is going'            |
| erau   | la'o | [ a gone ] | 'the two children are going'    |
| eratou | la'o | [ a gone ] | 'the (few) children are going'  |
| era    | la'o | [ a gone ] | 'the (many) children are going' |
| SUB    | go   | D child    |                                 |

The absence of case marking and agreement morphemes on the appositional NPs is relevant because, in the predicted adjunction structures, the necessary conditions for said marking (as defined above in §2.2) are not met. This observation is therefore consistent with the PAH.

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<sup>4</sup>It seems relevant to mention a rule of leftward NP shift, 'Fronting', because of its potential for word order permutation. Fronting is a syntactic operation which may topicalize any NP constituent to a clause initial position. This process typically involves rendering the fronted constituent more rhematic, effectively bringing the NP into the foreground of the discourse context, as Topicalization does in many languages. Consider the following example in which the appositional object in (i) is fronted in (ii).

- |     |   |         |                 |        |         |                 |                  |
|-----|---|---------|-----------------|--------|---------|-----------------|------------------|
| i.  | au  | via     | talanoa.-ta'ina | [ a+i- | talanoa | lailai ]        | [ vei 'emudrau ] |
|     | 1sg   | WANT    | tell-TR         | D      | story   | little          | TO 2du           |
|     | 'I want to tell a little story to you two.'           |         |                 |        |         |                 |                  |
| ii. | [ a+i-  | talanoa | lailai ]        | au     | via     | talanoa.-ta'ina | [ vei 'emudrau ] |
|     | D   | story   | little          | 1sg    | WANT    | tell-TR         | TO 2du           |
|     | 'There is a little story that I want to tell to you.' |         |                 |        |         |                 |                  |

Despite the potential Fronting may have for creating predicate initial word orders, it seems best to ignore this process in our study of configurationality in Fijian. First, Dixon's textual study shows that the patterns resulting from this process are relatively marked. Moreover, Fronting is clearly a discourse rule with observable results in the topichood of the NPs involved, which is clearly different than the object shifting rule yielding VSO orders from an underlying VOS structure.

## 2.4 Summary

The following chart summarizes the results arrived at in the previous section, and compares the characteristics of Fijian clauses to those found in Mohawk (Baker 1995).

(27)	<u>DIAGNOSTICS FOR PA LANGUAGES</u>	<u>FIJIAN</u>	<u>MOHAWK</u>
a.	Rich (Pronominal) Agreement	+	+
b.	Optional full NPs	+	+
c.	Free Word Order	?	+
d.	No Case Morphology	+	+

The obligatory GF markers are interpreted as pronominal arguments of the predicate (§2.3.1), on a par with the regular cardinal pronouns, warranting a "+" for the first diagnostic of a PA language. The appositional mode of sentence construction described in §2.3.2 showed that the clause final NPs are optional, again positively diagnosing Fijian as a PA language. The discussion of word order in §2.3.3 was less conclusive, but it seems clear that Fijian has quasi-free word order, permitting VOS and VSO patterns. The order relative to the appositional NPs and the peripheral constituents was totally free, however, suggesting that an alternative analysis in which the subject and object NPs occupy A-positions is unlikely to be successful. The quasi-free character of these word order patterns is reflected in the "?" given in (27c). Lastly, the absence of case morphology further identifies Fijian as a PA language. This cluster of properties permits a comparison with the Iroquian language Mohawk, characterized in Baker 1994, 1995 as a pronominal argument language.

The general conclusion of this section is that the application of the Pronominal Argument Hypothesis to Fijian successfully explains a set of structural characteristics found in this language. There is a residue, however, which remains unaccounted for by the PAH, and these concerns will be addressed in the next section. First, Fijian word order is not totally free: the major type of clause examined in this section strongly prefers verb initial sentences, and further, the elicitation order is subject final (VOS). Second, there were two differences observed between the subject markers and the object markers. The object markers formed a morphological class which excluded the subject markers. Also, the phonological size requirements of the object markers do not apply to the subject markers. The next section will deal with these differences, and the quasi-free word order, by giving the GF markers a different syntactic classification, making an interesting set of predictions about their semantic and syntactic behavior.

### 3. The Role of Canonical Types in Deriving Appositional Mode

The analysis of Fijian clauses has been so far, to a certain extent, pre-theoretical. The PAH was informally introduced as a means of accounting for a clustering of syntactic features, and at the same time, identifying certain problems that this hypothesis raises. In this section, a formal framework is provided for deriving the results established in the characterization of Fijian as a PA language. This framework, which employs a type-theoretic vocabulary within a Montague-style semantics, will be shown to have a range of empirical consequences which distinguish it from the syntactic framework in which the PAH is traditionally implemented.

### 3.1 Type-driven Appositional Mode

#### 3.1.1 Formal Semantics

To begin, recall that the position directly following a transitive verb is reserved for the object pronouns. While subsequent discussion will show that certain other individual type expressions are also found in the object slot Verb+TR \_\_\_\_\_, this position is more restricted than the clause final positions for nominals. In particular, common nouns never directly follow transitives.<sup>5</sup>

#### (30) THE OBJECT SLOT

Verb + TR \_\_\_\_\_  
Object Pronoun  
\*Common Noun

This restriction is accounted for by the PAH by claiming that the object markers are pronominals and that they constitute the primary (internal) arguments of the predicate. Within a Case-theoretic frameworks the PAH is typically worked out, however, a fundamental question remains unanswered, namely, why *agreement markers* function as the primary arguments, and not, for example, some other piece of inflectional morphology. The main thesis to developed directly below addresses this question by paying special attention to the semantic types of the nominal and predicative expressions involved.

Maintaining the assumption inherent to the PAH that the GF markers are pronominal arguments, the unmarked semantic value for these pronouns will be variables ranging over the domain of individuals, hence they will be of type  $\langle e \rangle$ . In denoting individual type variables, the GF markers are distinguished from common nouns, which, on their canonical interpretation, denote simple intransitive predicates, i.e., functions from individuals to truth values:  $\langle e \ t \rangle$ . Transitive predicates, which in the ensuing discussion will be equated with transitive verbs, denote functions from individuals to intransitive predicates. These semantic types are the widely assumed unmarked semantic values for pronouns, transitives, and intransitives (Heim and Kratzer 1994, Partee and Rooth 1983, Partee 1987).

#### (31) CANONICAL TYPES

- |    |                      |  |
|----|----------------------|--|
| a. | Transitive Verb      | $\langle e, \langle e \ t \rangle \rangle$ |
| b. | Common Noun          | $\langle e \ t \rangle$                    |
| c. | Pronoun (and Traces) | $\langle e \rangle$                        |

These canonical types are reflected in the following lexical entries for the relevant word classes involved.

#### (32) A SAMPLE LEXICON

##### A. Transitive Verbs

- i.  $[[ \text{rai-ci} ]] = f: D_e \rightarrow D_{\langle e \ t \rangle}$   
For all  $a, b \in D_e$ ,  $f(a)(b) = 1$  iff  $b$  looks for  $a$ .

---

<sup>5</sup>Fijian does have a process of Object Incorporation which produces lexical compounds resembling this verb phrase construction, but Object Incorporation is only productive for a very small set of predicates. Further, when a common noun forms a compound with the predicate root, the transitive suffix is conspicuously absent, e.g. *ta'i-va* 'to fetch (something) in a container', *ta'i.wai* 'fetch water'. The absence of the transitive suffix and the weak productiveness of this rule suggests that it is an earlier syntactic process, quite different from the positioning of proper names in the object slot, which is fully productive, and involves the transitive morphology.

- ii.  $[[ \text{'aci-vi} ]] = f: D_e \rightarrow D_{\langle e \rangle}$   
 For all  $a, b \in D_e$ ,  $f(a)(b) = 1$  iff  $b$  calls  $a$ .

B. Common Nouns

- i.  $[[ \text{gone} ]] = f: D_e \rightarrow D_t$   
 For all  $a \in D_e$ ,  $f(a) = 1$  iff  $a$  is a child.
- ii.  $[[ \text{qase} ]] = f: D_e \rightarrow D_t$   
 For all  $a \in D_e$ ,  $f(a) = 1$  iff  $a$  is an elder.

C. Pronouns

- i.  $[[ \text{ira}_x ]]^g = \text{them}$
- ii.  $[[ \text{au}_y ]]^g = \text{me}$

The relevance of these entries to formulating the restrictions on nominals in the object slot is that the domain of the function denoted by transitives is type  $\langle e \rangle$ , and only pronouns, not common nouns, match this in semantic type. This distinguishes the two nominals in the formal semantics of verb phrase interpretation, as demonstrated in the following computations.

(33) COMPUTATION FOR TRANSITIVE VERB PHRASES

A.  $[[ \text{Verb+TR GF}_{\text{OBJ}} ]]$

1.  $\text{rai-ci}^* = \lambda x_e \lambda y_e [ \text{look for } (x) (y) ]$
2.  $\text{ira}^* = \text{them}$
3.  $( \text{rai-ci ira} )^* = \lambda y_e [ \text{look for } (\text{them}) (y) ]$   
 From (1) and (2) by Functional Application.

B.  $[[ \text{Verb+TR Common Noun} ]]$

1.  $\text{rai-ci}^* = \lambda x_e \lambda y_e [ \text{look for } (x) (y) ]$
2.  $\text{gone}^* = \lambda x_e [ \text{child } (x) ]$
3.  $( \text{rai-ci gone} )^*$  is undefined.

Object pronouns combine straightforwardly with transitive verbs by Functional Application (see for example Kratzer and Heim 1994 for the formulation of this rule) because these word classes translate into expressions of the right semantic type (33A). If a verb phrase, however, composed of a transitive verb plus a bare common noun is translated into the semantic component, this constituent yields a type mismatch, requiring special mechanisms to yield the right results (33B). The assumption, therefore, that Fijian lacks the syntactic or semantic rules necessary for interpreting these constructions (e.g., Quantifier Raising or Type Shifting, as discussed in the introduction) explains the lack of such verb phrases: the semantic rules cannot operate on these structures, and so they cannot receive a coherent interpretation in the semantic component of the grammar. Only pronominals may combine with transitives to form a verb phrase because the verb and its object must combine directly via function-argument application, and only pronouns are of the correct semantic value to achieve this. Thus, the assumed semantic types derive the restriction characteristic of PA languages, namely that nominals closely bound to the verb must be pronominal. In the next subsection, the observation that proper names pattern like the pronouns in the object position will establish the generality of the restriction that the object marker *be* is of type  $\langle e \rangle$ .

The semantic framework being sketched here also correctly characterizes the behavior of nominals which occur in full noun phrases. Thus, the semantics of clause final NPs which refer back to a GF marker is essentially the approach to NP quantification taken in Kratzer and Heim's work. In considering the following sentence, the object pronoun *'ea* 's/he' and the NP *a gone* 'the

child' are co-indexed to indicate the appropriate anaphoric relation in the interpretation of this sentence.

- (34) a.  $e$        $rai-ci$        $'ea$        $[a \text{ gone}]$   
           3sg    look-TR      3sg      D child  
           'He looks for the child'
- b.       $[e \text{ } rai-ci \text{ } 'ea_1]_1 [a \text{ gone}]$

Now, indices act like pronouns, they are variables which range over individuals.<sup>6</sup> The index on the clause final NP acts as a lambda abstractor, binding the index on the object pronoun, very much like semantic binding of pronouns by co-indexed quantifier phrases. Consider the following computation for the 'quantifying in' of the appositional NPs.

(35) COMPUTATION OF APPOSITIONAL NOUN PHRASES

1.       $(e \text{ } rai-ci \text{ } 'ea_1)^* = [ \text{look for } (x_1) \text{ (he)} ]$
2.       $1 = x_e$
3.       $(e \text{ } rai-ci \text{ } 'ea_1)_1^* = \lambda x_e [ \text{look for } (x_1) \text{ (he)} ]$   
           From (1) and (2) by Lambda Abstraction.
4.       $a^* = \lambda x_{\langle e \text{ } t \rangle} [ f_{\langle e \text{ } t \rangle} (x) ]$
5.       $gone^* = \lambda x_e [ \text{child } (x) ]$
6.       $a \text{ } gone^* = \lambda x_{\langle e \text{ } t \rangle} [ \text{child } (x) ]$   
           From (4) and (5) by Functional Application.
7.       $( [e \text{ } rai-ci \text{ } 'ea_1]_1 a \text{ } gone )^* = [ \text{look for (the child) (he)} ] = 1$  iff  
           he looked for the child.  
           From (3) and (6) by Functional Application.

The basic sentence in (34b)  $e \text{ } rai-ci \text{ } 'ea$  'he looks for him' denotes the proposition specified in (35.1), which is made into a predicative expression by means of Lambda Abstraction in (35.3). Assuming the meaning for the clause final NP given in (35.6), this nominal can be quantified in via Functional Application, yielding the right interpretation for this complex sentence formed by appositional mode. Indeed, the structures resulting from the appositional mode mirror those resulting from Quantifier Raising in the interpretation of quantifier-variable binding.

Now that the semantic framework has been developed for characterizing the necessary restrictions on the object slot, and for interpreting the appositional NPs, the questions raised at the close of section 2 may be addressed in tandem. First, the problems identified above concerning the different morphological behavior of the GF markers will be addressed, and the solution to this set of problems will suggest a way of accounting for the semi-predictable word order patterns. The first problem was that the object markers seemed to form a class with the cardinal pronouns, with regard to their morphological shape, and that this morphological class excluded the subject markers (§2.3.1). The null hypothesis for the word class of cardinal pronouns is that they are nouns (N) because they head NPs beginning with a determiner (D). And so, because the object markers are homophonous with the cardinal pronouns, it seems sensible to assume that the object markers are also nouns. This of course accords nicely with the syntactic assumptions tacitly made in the above account of the behavior of the object markers: they are assumed to be pronominal arguments which

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<sup>6</sup>Indices act like pronouns in the semantics for a very obvious reason which is somewhat obscured by the discussion above. Pronouns are referential, and so all pronouns bear indices. It's these indices which translate into variables ranging over the domain of individuals, not the pronouns themselves. This is the sense in which traces and pronouns have the same semantic function.

form a constituent with the verb stem. Both object pronouns and cardinal pronouns may receive the same syntactic category, N, in their respective positions in the clause.

### 3.1.2 The Thesis of NonUniformity

If the object markers and cardinal pronouns are characterized as Ns, how are they to be distinguished from the subject markers, which systematically assume a different form? The proposal to be defended immediately below is that the subject markers are the outputs of different word formation processes than those generating the object and cardinal pronouns. Recall from section 2.3.1 that both the GF markers shared the same pronominal roots, given in (14), but they differ in the prefixal vowels which they receive. These results are summarized in the following morphological analysis, repeated from (15).

#### (36) MORPHOLOGICAL ANALYSIS FOR PERSONAL PRONOUNS

	1 incl.	1 excl.	2	3
GF <sub>SUB</sub>	(e)+R	'e+R	(o)+R	(e)+R
GF <sub>OBJ</sub>	'e+R	'e+R	'e+R	i+R

The morphological constituents which form the GF markers are argued to be the output of the following lexical rules, which render the object markers as Ns, and the subject markers as the functional category Agr.

#### (37) LEXICAL RULES OF PRONOMINAL SYSTEM

A. GF <sub>SUB</sub> as Agr	B. GF <sub>OBJ</sub> as N
(i) [(e)+R] → Agr[ 1 incl.]	(i) ['e+R] → N[ 1 incl.]
(ii) ['e+R] → Agr[ 1 excl.]	(ii) ['e+R] → N[ 1 excl.]
(iii) [(o)+R] → Agr[ 2 ](iii)	['e+R] → N[ 2 ]
(iv) [(e)+R] → Agr[ 3 ](iv)	[ {i}+R ] → N[ 3 ]

The choice of distinguishing the GF markers in terms of syntactic categories is initially plausible on the basis of their phonological behavior. Recall from §2.3.1 that the object markers always form independent phonological words, whereas the subject markers may be monosyllabic and are usually proclitic to the following particles or verbal stems or merged with a preceding complementizer. If the subject markers are distinguished from the pronouns by being members of a closed inflectional class, their apparently aberrant phonological behavior can be adequately accounted for. (The next subsection will develop this argument more explicitly).

#### (38) SYNTACTIC CLASSIFICATION FOR PERSONAL PRONOUNS

a. GF <sub>SUB</sub> :	Agr
b. GF <sub>OBJ</sub> :	N
c. Cardinal Pronoun:	N

Furthermore, the classification of the object markers and the cardinal pronouns as noun heads, and the subject markers as Agr heads, provides an avenue for addressing the problem concerning the semi-predictable word order patterns in Fijian clauses. If the subject marker is analyzed as the head of an inflectional category—while it may function semantically as an argument of the verb—it will not be a syntactic argument because it does not occupy an A-position, e.g., the specifier position of Agr. The proposal given above therefore has the consequence of giving a *non-uniform* treatment of the configurational features of nominals. As shown in the schematic representation below, the object markers are pronominal arguments, occupying the argument position directly following the verb, which has the effect of forcing the appositional NP into an adjoined position within the VP. The subject markers are not pronominal arguments,

however, and so an appositional NP referring back to the Agr head must occupy a fixed final position.

(39) Fijian Clause Structure

Agr<sub>k</sub> [ [ V+TR NP<sub>i</sub> ] (NP<sub>i</sub>) ] NP<sub>k</sub>

The Agr head occurs clause initially and is bound by the clause final subject. Further, the N head occurs post-verbally and may be bound by an adjoined appositional NP. Thus, the asymmetric approach sketched here has the consequence that the subject position is an A-position, while the position occupied by an appositional object NP is an A'-position.

The non-uniform treatment of the GF markers therefore, in one stroke, addresses the morphological differences observed among the personal pronouns and posits a canonical clause final position for subjects. Thus, the representation above will yield the basic VOS pattern for the core sentence constituents, and it is assumed that Object Shift may permute the adjoined object to a final position to yield the VSO pattern. In sum, the mixed approach to the configurationality of nominal expressions distinguishes the GF markers morphologically, and at the same time, derives the semi-predictable word order of Fijian clauses.

3.2 *Further Implications of NonUniformity*

The syntactic characterization of the person pronouns in Fijian whereby the GF markers are treated as different word classes has further implications for the distribution of proper names, interrogative pronouns, and the phonological word status of the person pronouns. These are taken up directly below, providing further empirical support of the non-uniform approach to pronouns and NP configurationality in Fijian.

3.2.1 Pronouns and Proper Names

The semantic restriction on the object slot proposed above was that only nominal expressions of type <e> may combine directly with a transitive verb. This restriction was responsible for ruling out bare common nouns from occurring in this position, while correctly allowing the object pronouns, which are of this semantic type. Proper names are often assumed to be rigid designators, meaning essentially that they pick out the same individual across all various possible worlds (Kripke 1972). Rigid designators are of type <e>, and so if the object position is truly open to expressions of this semantic class, the prediction is that proper names should pattern with pronouns in the object slot. That is, they should directly follow the *i*-final transitive suffixes within the verb phrase. This prediction is in fact borne out in Fijian, which is part of a general pattern in which proper names behave in similar ways to the person pronouns.

First, proper names and person pronouns, on the one hand, are distinguished from common nouns by the kind of article they take when they head a full noun phrase. Common nouns, like *oro* 'village' take the article *a*, as shown in the following examples.

- |      |                 |              |
|------|-----------------|--------------|
| (40) | a oro           | a gone       |
|      | D village       | D child      |
|      | '(the) village' | '(the) child |

On the other hand, pronouns and proper names, both place names and person names, take the article *o* when they head their own NP.

- (41) a.     *o* Waitabu  
           D Place  
           'Waitabu'
- o* Jone  
           D Name  
           'John'
- b.     *o* yau  
           D 1sg  
           'me!'
- o* ira  
           D 3pl  
           'them!'

The fact that pronouns and names take the same article, which is different from the one used with common nouns, supports the standard characterization of these nominals as taking the same semantic type. If the article *o* will apply to both proper names and pronouns, the domain of the function denoted by *o* will necessarily characterize the type of both names and pronouns (without, of course, writing two different lexical entries for *o*).

(42) LEXICAL ENTRIES FOR ARTICLES

- a. Pronoun and Name Article  
 $[[\ o\ ]]$  =  $f: D_e \rightarrow D_e$   
 For all  $a, b \in D_e$ ,  $f(a) = b$  iff  $a$  is  $b$ .
- b. Common Noun Article  
 $[[\ a\ ]]$  =  $f: D_{\langle e\ t \rangle} \rightarrow D_{\langle e\ t \rangle}$   
 For all  $a, b \in D_{\langle e\ t \rangle}$ ,  $f(a) = b$  iff  $a$  is  $b$ .

The semantics of the two articles here will not be discussed any further, as their meanings are still somewhat controversial (Dixon 1988, Schütz 1985, cf. Arms 1974). The essential point here is that the assumption that names and pronouns have the same semantic value permits a unitary formulation of the interpretation of the article *o*.

The assumption that pronouns and names have the same canonical type also has the consequence that names and pronouns should have similar syntactic behavior. In this context, a repair to the observation sketched in the introduction is in order. Recall that it was noted that proper names, referring both to persons and locations, may occur directly following the transitive verb when the verb root is marked with an *i*-final transitive suffix. The sentences below, drawn from Dixon's grammar and texts, give ample exemplification of this fact, which is widely attested in the standard dialect, as well as in other Fijian dialects (Schütz 1985, Pawley 1986 [1975], Geraghty 1983).

- (43) a. Dixon 1988 : 267 (23.1)  
 au aa tu'u-ni Eroni vei Nana Maa  
 1sg ASP tell-TR Name P Name  
 'I told Nana Maa about Eroni'
- b. T4.88:315  
 Saa la'o yane e dua me la'i 'aci-vi Raaluve.ni.Waini'eli  
 ASP go THERE 3sg one SHOULD GO call-TR Title  
 'One (person) went to call the Raaluve of Waini'eli'

c. T4.53:311

O i'o 'ila-i Narova  
D 2sg. know-TR Place  
'Do you know Narova?'

d. T4.175:324

Ia, sa+na mai 'aba-ti Boumaa o Waini'eli  
WELL ASP+FUT COME besiege-TR Place D Place  
'And finally, that Waini'eli would come and fight (lit: besiege) Boumaa'

e. T4.183:325

ni o ira sa+na mai 'aba-ti Boumaa  
THAT D 3pl ASP+FUT COME invade-TR Place  
'... that they would come and fight (lit: invade) Boumaa'

f. T4.192:326

Ra saa la'o mai me+ra mai 'aba-ti Boumaa  
3pl ASP go HERE SHOULD+3pl COME besiege-TR Place  
'They were to come here, come and fight Boumaa'

g. T6.21:335

Saa la'o mai, me la'o mai me mai rai-ci Tui.Ca'au  
ASP go HERE SHOULD go HERE SHOULD COME see-TR Title  
'He came here, came here to come and see Tui Ca'au (title of Raatuu Golea)'

h. T4.40:310

Tala.talanoa to'a sa—o Raavouvou.ni.Boumaa saa taro-gi Raaluve.ni.Waini'eli—  
Redup-chat ASP ASP—Art Title ASP ask-TR Title  
Raaluve.ni.Waini'eli me saa wati-na.  
Title SHOULD ASP spouse-3sg  
'They chatted away—and then the Raavouvou of Boumaa asked the Raaluve of Waini'eli to be his wife.

i. T6.74:342

[...] qoo saa cabe-ti Viti mai, e aa cabe mai  
THIS ASP come ashore-TR Place HERE 3sg PAST come ashore HERE  
i+na ucu-na qoo  
AT+D peak of land-3sg THIS  
'... he had come ashore on Fiji, he had come ashore at this peak of land'

This observation is in fact one of the motivating factors in Arms 1973 and Pawley 1986 [1975] for treating the *i*-final transitive suffixes as the basic form, and the *a*-final ones as the result of combining the suffix with a third person pronoun *a*. Because the *i*-final form is used in a wider range of environments, namely with proper names, all other object markers, in passive constructions, and with reflexive verbs, this form is assumed to be underlying.

The implications of this observation for the issues at hand is that it attests the full range of possible objects predicted by the type-theoretic approach. The interpretation of basic sentences like

the one in (44) are computed on a par with the meanings of sentences where the object pronoun directly follows the verb.

- (44) e      rai-ci      Jone  
 3sg   look-TR      Name  
 'He is looking for John'

Because names denote rigid designators they are of the semantic type  $\langle e \rangle$ , and so they can combine directly with the transitive verb without the need of any semantic rules other than function-argument application.

(45) COMPUTATION OF PROPER NAME IN OBJECT POSITION

1.  $\text{rai-ci}^* = \lambda x_e \lambda y_e [ \text{look for } (x) (y) ]$
2.  $\text{Jone}^* = \text{John}$
3.  $( \text{rai-ci Jone} )^* = \lambda y_e [ \text{look for } (\text{John}) (y) ]$   
 From (1) and (2) by Functional Application.
4.  $e^* = \text{he}$
5.  $( e \text{ rai-ci Jone} )^* = [ \text{look for } (\text{John}) (\text{he}) ] = 1$  iff  
 he is looking for John.

From (3) and (4) by Functional Application.

It will be noted in the summary of this analysis that this consequence of the type-theoretic approach to restricting the object slot is not shared by plausible alternatives to it, in particular Case-theoretic approaches to PA languages, or syntactic theories of null anaphora.

Proper names only occur within the predicate phrase in the object slot, thus names do not substitute for the subject markers as they do for the object markers. This represents one additional reason for distinguishing the GF markers in syntactic category. A name in sentence initial position would yield a perfectly coherent interpretation: just as the agreement marker *e* combines with the VP in (45), the intransitive predicate denoted by the VP may combine with a name to yield a proposition. The failure of names to pattern with the subject marker must therefore be accomplished in the syntax, as it is, by restricting this position to Agr heads. Names are Ns, and so they are predicted not to occur clause initially.

### 3.2.2 Interrogative *cei*

The interrogative pronoun *cei* is employed in questions which call for an answer that is a name, a pronoun, or a common noun with human reference. Like pronouns and proper names, when *cei* heads a NP it follows the article *o*. If the lexical entries given above are correct, *cei* is predicted to behave like other pronouns of type  $\langle e \rangle$ . In particular, the expectation is for *cei* to substitute for proper names and pronouns in the object slot, and what is more, *cei* should not pattern with the subject markers because they are of a different syntactic category. This is in fact true: *cei* may directly follow *i*-final transitive suffixes in interrogatives where the object is being questioned (46), but when the subject GF is questioned, a subject marker is employed, and an independent NP headed by *cei* is fronted to a clause initial position (47).

- (46) o aa rai-ci      cei  
 D 2sg look-TR      WHO  
 'Who did you see?'

- (47) a. [ o cei ] e sabi-ci i'o  
 D WHO 3sg hit-TR 2sg  
 'Who hit you?'

b. T4.119:318

- Saa taro-ga [ o ira ] se [ o cei ] e ca'a-va ti'o,  
 ASP ask-TR D 3pl COMPL D WHO 3sg do-TR ASP  
 [ o cei ] e ca'a-va ti'o [ a 'aa maa ]  
 D WHO 3sg do-TR ASP D thing that  
 'They asked who had done it, who had done that thing.'

This final observation exhausts the survey of nominals which take the article *o*, and furthermore, it is exactly these elements which substitute for each other in the position directly following transitive verb. Thus, other interrogatives, for example *cava* 'what', always form NPs with the article *a*, and do not substitute with pronouns and names in the object slot. The semantic framework developed above predicts precisely this kind of behavior, both in the failure of *cei* to pattern with the subject Agr head (they are of different syntactic categories), and in the failure of other interrogatives which pattern with the common nouns to occur in the object slot (they are of different semantic type).

(48) CORRELATIONS WITH INTERROGATIVE PRONOUNS

- a. *cei*<sub><e></sub>: Behaves like object pronouns and names  
 b. *cava*<sub><e, t></sub>: Behaves like common nouns

While a full account of the semantics of questions in Fijian would stray too far from the main line of argumentation here, the observed correlations given above are consistent with the proposed restriction on nominal semantic types. Interrogatives with *cei* in the object slot will be treated on a par with the rest of the pronouns: *cei* will saturate the internal argument of the predicate denoted by the transitive verb. Conversely, *cava* will not combine with transitives because their predictive type meaning is not of the right type to combine directly with transitives of type <e <e t>>. In sum, the interrogative pronouns provide further evidence for the semantic and syntactic restrictions employed in describing the distribution of nominals in basic sentences.

3.2.3 Differential Phonological Word Status of the Person Pronouns

The GF markers are outputs of different morphological rules which are responsible for the different shapes they assume, and also for associating the person pronouns with different syntactic categories. The subject agreement marker is classified as the inflectional head Agr, while the object pronouns are categorized as Ns, on a par with the regular pronouns. These different syntactic classes also make possible an important distinction which will play a role in deriving the different phonological behavior of these pronominals.

The major differences lay in the behavior of the singular pronouns, which are repeated from (13) below.

(49) SINGULAR PERSONAL PRONOUNS

	1	2	3
subject	<i>au ~ u</i>	<i>o</i>	<i>e</i>
object	<i>au</i>	<i>i'o</i>	<i>e'a</i>

The first observation distinguishing the two classes is that only the subject forms may be composed of less than two vowels. This is related to a second important observation, namely that the object and cardinal forms always constitute an independent phonological phrase, receiving stress on the

penultimate syllable. The nonsingular subject personal pronouns usually have this status, but the singular forms are aberrant in their phonological behavior, being omitted or latching on to a neighboring word in a range of contexts (Dixon §3.2.4). For example, the third person subject pronoun *e* can never be more than a clitic to the next word, and it is dropped after a monosyllabic complementizer, e.g., *me* or *ni*. The second person subject marker exhibits a slightly different pattern of behavior, merging with the complementizers, e.g., [*me o*] → *mo*, and being proclitic to subsequent words in the elsewhere case. Lastly, the first person subject marker is *au* underlyingly, but drops the first vowel after a monosyllabic complementizer and coheres to it. Thus, [*ni au*] → *niu*, and [*me au*] → *meu*.

The differences in the minimal size of the pronominals, and consequently, their divergent phonological phrasing, may be accounted for by subjecting the open class forms to a word minima requirement commonly used in phonological analyses of this kind of phenomenon. Because all words are composed of at least one metrical foot, the phonological size constraint, Foot Binariness, will require that every word of the relevant class be composed of at least two moras (where this pair is either distributed over two syllables, or contained in one syllable composed of a long vowel or a diphthong).

- (50) Foot Binariness (McCarthy and Prince 1986, Hayes 1987)  
Feet must be binary at the syllabic or moraic level of analysis.

The cardinal and object pronouns are analyzed as nouns, and are thus categorized as members of an open word class. Foot Binariness will therefore apply to these pronominals, accounting for the observation that their lexical forms are always composed of at least two vowels (moras). This in turn accounts for the uniform status of the object and cardinal pronouns as independent phonological words: because they are all binary at some level of prosodic analysis they may support a well-formed foot, and hence, they satisfy the minimal requirement for prosodic word status (phonological word in Dixon's parlance).

The subject pronouns, on the other hand, are analyzed as Agr heads, and are thus inflectional morphemes of a closed word class. Foot Binariness is not, by hypothesis, operative in this class, predicting the observed subminimal lexical forms. All of the behavior of the monosyllabic forms described by Dixon, deletion, proclisis, cohesion with preceding complementizers, may now be motivated by the need for the monosyllabic pronouns to be parsed as well-formed phonological words in the phrasal phonology. It is common cross-linguistically for closed class and open class items to diverge in this way (Hayes 1995), providing outside evidence for this classification based on word minima observations. To conclude, the syntactic categories employed above in restricting the distribution of pronouns and names to the object slot provides an adequate word classification in accounting for their differential phonological status.

#### 4. Summary of Results

This section summarizes the results established in the analysis developed above, and briefly compares this analysis with a Case-theoretic treatment of configurationality in Fijian.

In the previous section, the proposal was advanced that the GF markers are the result of different morphological rules. These rules are responsible for the different morphological shapes observed in contrasting these two classes of pronominals, and also they classify the GF markers as different syntactic categories. This syntactic classification was shown to have a wide range of consequences, influencing both the phonological behavior of the different pronoun classes and their syntactic distribution when compared and contrasted with other nominals with a similar semantic type. The following list summarizes the assumptions made above regarding the word class and semantic type of the relevant nominal expressions.

## (51) SYNTACTIC CATEGORIES AND CANONICAL TYPES FOR NOMINALS

a.	Common Noun	N	<e t>
	Interrogative <i>cava</i>	N	<e t>
b.	GF <sub>OBJ</sub>	N	<e>
	Names	N	<e>
	Interrogative <i>cei</i>	N	<e>
c.	GF <sub>SUB</sub>	Agr	<e>

The observation that the object markers, proper names, and *cei* all patterned as a class post-verbally is accounted for in this analysis by their syntactic and semantic characterization (51b). They are exactly those nominals which may directly follow an *i*-final transitive verb and occur in NPs headed by the article *o* because they refer to individuals, i.e. Ns of type <e>. The individual type nominals are distinguished formally in this system from the common nouns and *cava* by means of their canonical type (51a). This correctly predicted that they are excluded from occurring in the object slot, and that they use a different article when they head their own NPs, i.e., *a* not *o*. Only the nominals in (51b) are licensed in the post-verbal position in transitive constructions because only they can be applied directly to the denotation of the transitive verb in the interpretative component of the grammar and yield a well-formed expression for the larger verb phrase.

In contrast to this semantic restriction on the denotation of post-verbal nominals, the distinction between the subject marker and the object markers is established in the syntax. For example, the account of the failure of names and interrogative *cei* to substitute for the subject marker inside a basic sentence is due to their different syntactic categorizations. The subject markers are analyzed as closed class functional categories (51c). This distinction in terms of word class had two further consequences: (i) it provides a coherent classification for distinguishing the phonological status of the GF markers, and (ii) it played a role in deriving the predictable component of the word order patterns observed for the core NPs constituents of the sentence.

An apparent drawback of this non-uniform syntactic classification is the related asymmetry with respect to null anaphora: the subject GF should be an obligatory expression (it occupies an A-position), while the object GF is optional (because it occupies a A'-position). This prediction, however, is actually not true, once the semantics of appositional NPs is carefully defined. Succinctly, the optionality of the appositional NPs is not derived from their structural positions; rather, NPs are optional because of their semantic function, and it is their semantics which derive their configurational properties. Thus, in previous analyses of this parameter, adjuncts are analyzed as restrictive modifiers, and so they are not necessary elements of the sentence. The semantics of the appositional NPs defined in section 3.1 is clearly compatible with this result. Hence, the constituent Agr' is a well-formed expression, denoting a proposition because the pronominal Agr head saturates the external argument of the verb. Further, the appositional subject NP co-indexed to the Agr head is interpreted exactly on a par with the appositional object NP: they both function to give more information about the GF marker (whether this is defined as restrictive modification, or some other semantic process, is not clear at present). The important point here is that if the optionality of NPs in the clause stems from its semantic function, as has always been the assumed, then the results in the case of Fijian appositional NPs are in fact quite uniform. To conclude, the syntactic classification necessary in the account of the distribution of nominals will not lead to non-uniformity in the configurational traits of the appositional NPs, if these traits are governed in the semantic framework like the one developed here.

It should be clear at this point how the results derived above distinguish the type-theoretic approach to the distribution of nominal expressions from a Case-theoretic account. The type-theoretic approach to the distribution of nominal expressions provides a genuine explanation of the patterning of pronouns and proper names post-verbally, stemming from the fundamental categories necessary for any compositional semantics. In Case-theoretic frameworks for implementing the Pronominal Argument Hypothesis, this syntactic patterning is completely unexplained. The

syntactic categories at the disposal in this theory do not provide the right classification for characterizing the observation that pronouns and proper names pattern as a class in the object position. Further, an appeal to an incorporation analysis of names closely bound to the transitive verb will presumably admit common nouns in this position as well, incorrectly extending the set of nouns to this semantic class. Indeed, this observation, which is rather fundamental in Fijian syntax, seems to call unmistakably for special attention to the semantic types of these nominals.

A second component of the canonical types approach which makes it different from the alternatives is its reliance on object-subject asymmetries in governing the distribution of nouns. The syntactic structures mapped in the interpretive component provide the semantics with transitive verb phrase constituents which do not include subjects. This representational asymmetry is indeed essential to characterizing the semantic restriction on post-verbal nominals, as different syntactic constituency for the grammatical functions without this property would surely have different consequences. Thus the semantic framework employed here derives a strong prediction related to this syntactic asymmetry, namely that the class of nominals permitted as object GFs should be more restricted than the set of possible subject GFs. As emphasized in the above discussion, the set of possible objects in Fijian is clearly more narrowly defined than the set of possible subjects. Possible objects, that is nominal complements to V+TR stems, are restricted to pronouns, proper names, and traces. Possible subjects on the other hand, i.e., NPs occurring in the specifier position of Agr, are all of the possible object nouns, NPs formed with common nouns, and potentially generalized quantifier type expressions.<sup>7</sup>

In comparing this result with the predictions of the standard syntactic approach to describing PA languages it is fair to ask, why do the agreement morphemes uniformly absorb Case, and consequently predict a set of configurational results for both the subject and object? Nothing inherent to the syntactic approach derives this result, and so, in the context of the observed asymmetries in Fijian, one is left wondering how to proceed. This is not to say that syntactic principles will not emerge as a way of accounting for the unbalanced distribution of nominal expressions in Fijian. For example, the bifurcation of the pronominal system in terms of their syntactic category proposed in this paper may provide an avenue for accounting for the observed object-subject asymmetries. On the semantic approach, however, the asymmetric distribution of nouns comes as a direct consequence of the type-theoretic denotations fundamental to the property of compositionality embedded in this framework.

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<sup>7</sup>Noun phrase quantification in Fijian has not been studied carefully within the formal framework employed in this paper, so the relevance of this point for Fijian has yet to be established. Preliminary research on the language seems to indicate an avoidance of using determiners like *few* or *many*, these English expressions being translated into Fijian with the use relative clauses. Thus, for example, *few villages* would be translated in Fijian as *e dua a 'oro*, which means literally, 'the village which is few'. Perhaps this mode of quantifying over nouns reflects a general pattern in the language, but at this point not a lot is known on this topic.

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