SUBJECT, OBJECT, AND INDIRECT OBJECT: TOWARDS A TYPOLOGY OF PAPUAN LANGUAGES

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1. INTRODUCTION

The purpose of this article is to examine the various strategies used in Papuan (Non-Austronesian) languages to encode and differentiate Subject, Object and Indirect Object, with a view to discovering what relationships between strategies may exist.[1]

The strategies for encoding Agent, Actor, Patient, Recipient, and Beneficiary roles in 35 Papuan (Non-Austronesian) languages were studied and compared. From this data, generalizations were made, some applying to the whole corpus, others to regional groupings. From these results, the universal applicability of Greenberg's universals correlating SOV

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[1] This paper began as a group research project, the objective of which was to establish a typology of direct and indirect object marking strategies. The initial researchers were M. Decker, E. Gasaway, J. Goddard, R. Johnston, G. Reesink, S. Tuominen, and C. Whitehead. The initial data collected was analysed by the author and subsequently expanded to bring 'subject' into the scope of the typology and to bring in data from further languages. Acknowledgement is made of the above for their help in starting this project, and to L. Bruce, M. Decker, E. Gasaway, R. Johnston and G. Reesink for their comments on the initial draft of this paper. A second draft was also commented on by John Haiman of the University of Manitoba, to whom the author's sincere thanks are also extended. Naturally, none of the above are accountable for anything in the paper as it now stands, the content of which is entirely the author's responsibility.
Throughout the paper the following conventions and abbreviations are used: ACT Actor, AGT Agent, BM Benefactive Marker, BEN Beneficiary, C-R cross-reference, DEM demonstrative, DEP dependent, DIFF different, FOC focus, FUT future, INTEN intention, MKD marked, NP noun phrase, PA past, PAT Patient, P/N person/number, PRO pronoun, PX prefix, REC Recipient, REF referent, RP remote past, SX suffix, UNMKD unmarked. Numerals 1, 2, 3 refer to 1st, 2nd and 3rd persons respectively, while the letters S, P, D, M and F associated with these persons refer to singular, plural, dual, masculine and feminine respectively. The abbreviated form PL is used in the case of 3rd person plural, as 3PL.

order with case marking and the existence of indirect object are called into question. It is proposed in conclusion that 'optional' case markers and person/number cross-referencing on verbs are essentially pragmatic rather than syntactic features, and it is further concluded that the argument for a distinct syntactic category of Indirect Object is not dependent on any single strategy in most Papuan languages.

It would seem advisable at the outset, however, to discuss what is meant by the terms Subject, Object, and Indirect Object. Faltz (1978: 76) has pointed out that "in contrast to *subject* and *direct object*, which seems to have some language-independent syntactic existence, *indirect object* can only be reasonably defined by its semantics (e.g. as referring to the recipient of an act of giving, sending, telling, etc.)." Similarly, Comrie (1981:5) concludes that the "cross-language evidence for a grammatical relation of Indirect object is much weaker than that for Subject and Direct object." Since even Subject and Direct Object do not encode the same semantic roles in all languages, this paper will talk in terms of Agent, Actor, Patient, Recipient, and Beneficiary rather than the syntactic terms used in the title. For the purposes of this paper, Agent is defined as the performer of a transitive predication; Patient is the entity affected by a transitive predication; Actor is the performer of an intransitive predication; Recipient is the entity (normally animate) receiving the Patient; and Beneficiary is the entity (again normally animate) for whose benefit the action, whether transitive or intransitive, is performed.

Section 2 will be a typology of the NP case-marking, pronoun, and verb cross-referencing strategies, beginning with a comparison of Agent, Actor, and Patient, then comparing Recipient with Patient and, finally, Beneficiary with Recipient. Section 3 will make generalizations about correlations between strategies. Section 4 will discuss some implications for linguistic theory arising out of the data: Greenberg's universal correlating SOV word order with case marking systems will be questioned, as will the existence of Indirect Objects as a grammatical category in Papuan languages, and it will be proposed that optional case markings and person/number cross-references on verbs have a significant function of assigning prominence.

2.1 AGENT, ACTOR, AND PATIENT

Comrie (1981:4) points out that there are four major possible groupings of these roles (his Subject here is called Actor): (i) all the same; (ii) Agent-Actor opposed to Patient; (iii) Actor-Patient opposed to Agent; (iv) all different. These will be referred to as Types I, II, III, and IV respectively. (There is, of course, the theoretical possibility of Agent-Patient opposed to Actor, which does not exist for any language (cf. Comrie 1975). And Comrie (1981:4) points out that some languages would subdivide the three roles under discussion here.)

2.1.1 NOUN PHRASE MARKING

Of the four possible groupings of these three roles only the first three occur; that is, no Papuan language case marks all three differently.

Table 1: *A-A-P Groupings According to Noun Phrase Markings*

Type	Agent	Actor	Patient	# of Languages
I	-	-	-	13
IIa	+α	+α	-	5½
IIb	-	-	+	6½
IIc	+α	+α	+β	3
III	+	-	-	7

[+ Case marked on NP; - Case not marked; α identity]

Table 1 shows how the languages researched group and mark the three roles. It will be noted that of the three, the grouping of Agent and Actor opposed to Patient is slightly the more frequent but is split into three sub-types on the basis of which roles are marked. Gahuku has a split system on the basis of two different noun classes which shows up as two halves on the table. All the markings represented in Table 1 are postpositions (either suffixes, post-clitics, or phrase final words). This is in line with Greenberg's universal No.5 (1966) which states that "with overwhelmingly greater than chance frequency,

languages with normal SOV order are postpositional". All the languages studied are SOV except Au which is SVO and has no case markings.

A further distinction needs to be made, however, between those languages which obligatorily require the markings and those for which it is optional. *It may be that the optional markings in question are really something other than case markings.* If so, the balance swings to a heavy proponderance of Type I, which does not differentiate between the three roles. The possibility of such interpretation is discussed in 4.2, where it is proposed that many of these markings are *prominence* and/or *animacy markers*. The resulting patterns would be as shown in Table 2.

Table 2: *A-A-P Groupings According to Obligatory NP Markings*

Type	Agent	Actor	Patient	# of Languages
I	-	-	-	28
IIa	+α	+α	-	1½
IIb	-	-	+	½
IIc	+α	+α	+β	1
III	+	-	-	4

2.1.2 PRONOUNS

Not surprisingly, the groupings according to pronoun systems are very similar to those established by noun phrase markings. Table 3 shows the pattern observed.

Table 3: *A-A-P Groupings According to Pronouns*

Type	Agent	Actor	Patient	# of Languages
I	α	α	α	7½ (17)
IIa	α+γ	α+γ	α	4½ (1)
IIb	α	α	α+γ	6½ (4½)
IIc	α+γ	α+γ	α+δ	2 (1)
IId	α	α	β	6½ (6½)
IIe	α	α	-	1 (1)
IIIa	α+γ	α	α	5½ (2½)
IIIb	α	β	β	1½ (1½)

In Table 3, α and β refer to distinctive sets of pronouns whereas γ and δ refer to case markings. With one exception, for those languages using case markings for both noun phrase and pronouns, the marking is the same; the exception is Korafe which marks Agent NP with the suffix -mi and Agent pronouns with the suffix -ne. The bracketed numbers show the results if optional markings are ignored.

Table 4a: *Correlation Between NP and Pronoun Groupings*

PRO / NP	I	IIa	IIb	IIc	IId	IIe	IIIa	IIId
I	7½(17)		1½(3½)	(1)	3(5½)	1(1)		
IIa		4½(1)			1(½)			
IIb			3(0)	1(0)	2½(½)			
IIc			2(1)	1(0)				
III							5½(7½)	1½(1½)

As the circling in Table 4a shows, twenty-two of the thirty-five languages are classified exactly the same way for both NP and pronoun. If Type II (Agent-Actor vs. Patient) is considered a unit, the consistency is even more remarkable: only 5½ (11) move and all of these move from Type I (no differentiation) for NPs to Type II (an Agent-Actor versus Patient grouping) for pronouns. This is shown in Table 4b.

Table 4b: *Correlations Between NP and Pronoun Groupings*

NP \ PRO	I	II	III
I	7½(17)	5½(11)	
II		15(3)	
III			7(4)

2.1.3 VERB CROSS-REFERENCING

All of the languages studied except two, cross-reference at least one of the roles for person and/or number within the verb or verb phrase. Again referring to the four basic groupings, the only one not found is Type III which groups Actor and Patient opposed to Agent. By far the most frequent grouping is Type II which cross-references Actor and Agent the same way but Patient differently. Table 5a shows the results.

Table 5a: *Cross-referencing in the Verb or Verb Phrase*

Type	Agent	Actor	Patient	# of Languages
I	-	-	-	2
IIa	α	α	-	7
IIb	-	-	α	1
IIc	α	α	β	22
IV	α	β	γ	3

One significant observation from the above table is that, of all languages with any cross-referencing, Barai is the only one that does not cross-reference Agent and Actor. Most of the languages studied have more than one set of affixes which cross-reference Agent and/or Actor; in most cases these affix sets differ in that they also show tense and/or aspect. The only language employing different sets for Agent and Actor is Anggor. The other two Type IV languages are Bine and Yele which have one affix set which cross-references Agent-Actor for all clause types and another set which cross-references Actor or Patient depending on the clause type.

Most of the five patterns of cross-referencing shown in Table 5a can be sub-divided according to whether the cross-referencing is by prefixes or suffixes. This is shown in Table 5b.

Table 5b: *Cross-referencing in Verb and Verb Phrases*

Type	Agent		Actor		Patient		# of Languages	
	Px	Sx	Px	Sx	Px	Sx		
I		-		-		-	2	Yessan-Mayo Podopa
IIa1	α		α			-	1	Vanimo
2		α		α		-	6	
IIb2		-		-		α	1	Barai
IIc2		α		α		β	7	
3		α		α	β		13	
4	α		α			β	1	Au
IV2		α		β		γ	1	Anggor
3	α	α	α	β		β	1	Bine
4		α	β	α	β		1	Yele
	3	28	4	29	14	11	34	

Waris does not show on this chart because it cross-references not with affixes but with suppletive verb stems. The significance of Table 5b is that it shows the overwhelming predominance of suffixation of Agent-Actor over prefixation of Agent-Actor - the only exceptions are Vanimo, Au, and Yele none of which are Trans-New Guinea Phylum languages. Patient cross-referencing however, is evenly distributed between prefixation and suffixation.

The relationship between NP and pronoun groupings and cross-referencing groupings is shown in Table 6.

Table 6: *Correlations Between NP-Pronoun Groupings and Verb Cross-referencing Groupings for Agent, Actor, and Patient*

NP pronoun / Verb	I	IIa	IIb	IIc	IV
I-I		2(3)	1(1)	4½(13)	
I-II	(1)	(1)		5½(7)	(2)
II-II	(0)	2(1)		10(2)	2(0)
III-III	1(1)	3(2)		2(0)	1(1)

The outstanding features of this table are the facts that all those languages with no case-marking systems in the NP and the majority of those making an Agent-Actor versus Patient grouping in NP do not distinguish between Agent and Actor on the verb. Languages grouping Actor and Patient in NP and pronouns have no such constraints.

2.2 RECIPIENT

Recipient was defined in the introduction as "the entity (normally animate) receiving the patient". Faltz (1978:76) was quoted as supplying verbs of *'giving'*, *'sending'*, and *'telling'* as examples of verbs which have such a role. However, the languages studied for this paper by no means treat the 'recipient' of such verbs homogeneously. The 'recipient' of a speech, in many languages, for instance, is encoded differently from the 'recipient' of a gift; for such languages an 'Addressee' role is significant. The data presented here is based on the 'recipient' only of verbs of giving since this information is most consistently available. (Appendix B makes note of the variations in some languages.)

The main criterion for classification is either same as or different from encoding of Patient. Again this will be looked at in three areas: NP, pronoun, and verb cross-referencing.

2.2.1 NOUN PHRASE MARKINGS

Table 7 takes the five types set up in Table 1 and shows which languages differentiate between Patient and Recipient and which do not.

Table 7: *NP Marking of Recipient as Compared to Patient*

A-A-P REC	I P UNMKD	IIa P UNMKD	IIb P MKD	IIc P MKD	III P UNMKD
same	11	3½	6½	2	4
DIFF	2	2	-	1	3

It should be mentioned that all of those differentiating between Patient and Recipient NP mark Recipient. Yupna marks both but with different suffixes. For four of the IIb languages, the suffix is obligatory where it was optional for Patient.

2.2.2 PRONOUNS

As in the case of Agent-Actor-Patient grouping, the NP and pronoun patterns of grouping Patient-Recipient are very similar. Table 8, therefore, is a composite of NP and pronoun patterns compared to the four types established in Table 4b.

Table 8: *NP and Pronoun Differentiation of Patient and Recipient*

A-A-P R-P	I-I	I-II	II-II	III-III	
NP & PRO both same	7½	3½	12	4	27
NP same PRO DIFF					
NP DIFF PRO same		1			1
NP & PRO both DIFF		1	3	3	7

The majority of languages do not differentiate between Patient and Recipient in NP markings or pronouns; this is especially so for those which do not differentiate between Agent-Actor-Patient NPs. Further, with the exception of Kapau, all languages either differentiate in both NPs and pronouns or do not differentiate in either. With regards to Kapau, Oates and Oates (1968) say the object pronouns are "similar to

the subject pronouns but distinguished from them ... by the addition of -i object person morpheme" (46), and also "only personal nouns (relationship terms and people) occur as indirect objects of a verb. They are suffixed by the object morpheme, -i" (47). Thus -i morpheme marks Recipient and Patient pronouns but no statement is made regarding object NPs. However, some examples they provide would indicate that -i marks all human Patients and Recipients, and this interpretation is reinforced by analogy with the related Menya. If this analysis is correct, then Kapau would group Agent-Actor-Patient as Type IIa (with the Patient marker 'optional') and Recipient and Patient would be undifferentiated by either NP markings or pronouns.

2.2.3 VERB CROSS-REFERENCING

Table 9 regroups the types from Table 5b according to how Patient is cross-referenced, if at all. Cross-referencing of Recipient is then compared to this grouping.

Table 9: *Recipient Cross-reference Compared with Patient Cross-reference*[1]

PAT / REC	No C-R I;IIa	Prefix IIc3;IV3	Suffix IIb;IIc2,4; IV2,4	Suppletive Stem	
same	8	14	6		28
DIFF no C-R					
DIFF separate C-R			3		3
DIFF suppletive stem	1		2		3
DIFF neutral SX (i.e. not P/N)				1	1

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[1] Franklin (1971) does not state that the verb *'give'* has suppletive stems but the following examples seem to imply it:

(1) aa-para naaki laapo-me ni gia-pe.
man-and boy two -AGT I give-they did
'The man and the boy gave (it) to me.'

(2) ne-me sapi-para mena laapo kala-lo.
I-AGT sweet potato-and pig two give(3rd person)*-I am*
'I am giving sweet potato and pig (to someone).'

Once again it is immediately evident that the vast majority of languages do not differentiate between Recipient and Patient with verb cross-referencing. It is also significant that languages which cross-reference Patient with a prefix use that same prefix for Recipient when one is present, whereas those which suffix Patient cross-referencing are fairly evenly divided between those which differentiate and those which do not. In every language which does not differentiate, Recipient is cross-referenced in preference to Patient, when they co-occur.

Table 10 summarises the overall comparison of Recipient and Patient marking systems. In accordance with the statement made in 3.2, Kapau is considered as not differentiating in either NPs or pronouns.

Table 10: *Correlation Between NP-Pronoun and Verb Cross-Referencing for Patient and Recipient*

	No verb C-R for either	Verb C-R same	Verb C-R DIFF
NP & PRO same	6	17	5
NP & PRO DIFF	2	3	2

Two out of three languages, therefore, mark Recipient in exactly the same way as Patient. This is not to say that, for all of these languages, there is ambiguity when both roles are present. For those 17 which do cross-reference in the same way, the cross-reference partially disambiguates between them. For these languages, it is significant that Patient is not always encoded in the same way in all clauses; this observation will be returned to later.

2.3 BENEFICIARY

The term Beneficiary actually includes two different semantic roles: 'on behalf of, instead' and 'for the benefit of'. From the data observed it would appear that only Barai (in one of two encoding strategies) and possibly Bine actually differentiate and, therefore, the term will be used to include both.

Four of the languages studied (Amele, Barai, Bine, and Menya) have two different strategies which they employ for encoding beneficiary. These will be counted as halves in the tabulations. Information on Beneficiary is not available for Vanimo, so the data covers only 34 languages.

2.3.1 NOUN PHRASE MARKINGS AND PRONOUNS

Since all the languages consulted are consistent in either differentiating or not differentiating between Recipient and Beneficiary in NPs and pronouns, no division will be made.

Table 11: *Recipient and Beneficiary NP and Pronouns Compared*

	REC = PAT unmarked	REC marked = PAT	REC marked ≠ PAT	Total
BEN=REC	8	4½	4½	17
BEN≠REC	9½	5	2½	17

Table 11 shows that all but eight languages mark Beneficiary NPs and pronouns. In actuality, there are six languages which never mark Beneficiary (Alamblak, Salt-Yui, Gadsup, Mauwake, Au, and Waskia), one which marks or does not mark according to class (Gahuku), and three which mark or do not mark according to which of two strategies are used (Amele, Barai, and Menya).

The affixes used to mark beneficiary are never used exclusively for this role. As Table 11 shows, several of the markings also indicate Recipient and some Patient as well. In seven languages, the marker also indicates possession; in three, some aspect of location and in all the rest, a wide range of roles perhaps best labelled 'Referent' (this includes purpose, reason, topic of conversation, addressee, and destination).

There is an even division between those which differentiate between Beneficiary and Recipient and those which do not. There appears to be no correlation between Beneficiary-Recipient equivalency in NPs and pronouns and other NP and pronoun factors. The only consistent relationship is that if Beneficiary is unmarked, Recipient and Patient are also unmarked.

2.3.2 VERB CROSS-REFERENCING

Verb cross-referencing strategies need to be classified along two parameters. One is the person/number cross-referencing comparable to that which has been discussed for other roles. The other involves special strategies used to encode benefaction. One strategy is that of verb chaining, in which one verb describes the action and the other prescribes whose benefit the action is for; the latter of these two is frequently the verb *'give'* as in (1), though in one instance the verb *'help'* is used.

(1) Waskia

Gagi Kaimkadi kaem-guang dia tuw-am.

*Gagi Kaimkadi clothing buy.*DEP 3S/*give*-3S/PA

'Gagi bought Kaimkadi a laplap.'

The second of the strategies is to 'derive' a verb in such a way as to make it a benefactive verb; this is most frequently done by means of a benefactive suffix. Kewa has a distinct set of Agent-Actor person/number suffixes which are only used when the action is for the benefit of someone other than the Agent-Actor. The use of a benefactive marker is illustrated in (2):

(2) Barai

fu na kamui naku-r-le[1]

3S 1S *string bag hang up*-BM-1S

'He hung up a string bag for me.'

There is a certain degree of overlapping between chaining and benefactive marking; and also between benefactive marking combined with Beneficiary cross-referenced the same as Recipient, on the one hand, and Beneficiary cross-referenced differently from Recipient. In the first instance, the benefaction marker for some languages is the verb *'give'*, so the difference between this and chaining is a matter of word breaks (cf. (3) and (4)). In the second instance, the distinctive

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[1] John Haiman (pers.comm.) suggests that the benefactive forms in Barai and Waskia are closely related. In both cases there is V + benefactive suffix + beneficiary, and Waskia -tuw-, the benefactive suffix, is probably cognate with the East Central Highlands -to- (cf. Haiman 1982), possibly even with Barai -r-. This calls into question then the value of the contrast drawn after example 6.

beneficiary cross-reference could be re-analysed as Recipient plus benefaction marker (cf. (5) and (6)):

(3) Alamblak

yima-r met-t he-më-r-t fëh-m.

person-3SM *woman*-3SF *give*-RP-3SM-3SF *pig*-3PL

'A man gave the woman the pigs.'

(4) Alamblak

yima-r yimat-r krɨy-t tat-hay-më-r-r.

person-3SM *friend*-3SM *chicken*-3SF *hit*-BM-RP-3SM-3SM

'A man hit (killed) a chicken for the benefit of a friend.'

(5) Agarabi

Yoni wuhku ti-m-e-m-ɨ́h.[1]

John book 1-*give*-neutral-3-3 final

'John gave me a book.'

(6) Agarabi

Anaati yaahun kun-tint-e-m-ɨ̀h.

woman sweet potato cook-1/BM-neutral-3-3 final

'(The) woman cooked sweet potato for me.'

One parameter of classification is, therefore, chaining versus benefactive marker versus the absence of such, while the other compares Beneficiary person/number cross-referencing with that for Recipient (same, different, or no cross-referencing).

Table 12: *Benefactive and Beneficiary Cross-Referencing on Verbs*

	REC = BEN no C-R	REC = BEN C-R	REC C-R BEN no C-R	REC ≠ BEN DIFF C-R
Chain	1	2	½	
BM	2	4	2	
Zero	(4)	(2½)	8½	7½

The figures circled in Table 12 indicate the only types which in no way differentiate between Beneficiary and Recipient in the verb. With the exception of one of the two Bine strategies, no language differentiates in the NP but not in the verb.

Table 13: *The Correlation Between NP-Pronoun Differentiation (of Recipient-Beneficiary) and Verb Differentiation*

NP \ Verb	REC = BEN	REC ≠ BEN
REC = BEN	6	10½
REC ≠ BEN	½	17

2.4 SUMMARY OF DIFFERENTIATING STRATEGIES

Differentiation of the five roles has been discussed, so far, only in terms of NP marking, pronoun systems, and verb cross-referencing. Table 14 charts the distinctions made between the five roles for each language. The first and third columns are included only for classificatory purposes, since Actor does not co-occur with Agent or Patient and so there is no potential for ambiguity.

Table 14: *Summary of Role Differentiation for Each Language Studied*

	AGT-ACT	AGT-PAT	ACT-PAT	PAT-REC	REC-BEN
Yele	+	+	-*	+	+
Kewa	+	+	-*	+?	+
Kaugel	+	+	-*	-	+
Korafe	±	±	-	+	-
Podopa	+	+	-	-	+
Selepet	±	+	-*	-	+
Timbe	±	+	-*	-	+
Kunimaipa	-	+	+	+	+
Usarufa	-	+	+	+	-*
Iatmul	-	+	+	+	-
Anggor	-*	+	+	-*	+
Bine	-*	+	+	-	+

	AGT-ACT	AGT-PAT	ACT-PAT	PAT-REC	REC-BEN
Waris	-	+	+	-*	-
Au	-	+	+	-*	-
Yupna	-	+	+	±	-
Nabak	-	+	+	-	+
Baruya	-	+	+	-	+
Angaatiha	-	+	+	-	+
Kapau	-	+	+	-	+
Siroi	-	+	+	-	+
Agarabi	-	+	+	-	+
Waskia	-	+	+	-*	-*
Gadsup	-	+	+	-	-*
Gahuku	-	+	+	-	-*
Mauwake	-	+	+	-	-*
Narak	-	+	+	-	-
Yessan-Mayo	-	+	+	-	-
Daga	-	-*	-*	-*	+
Usan	-	-*	-*	-	+
Amele	-	-*	-*	-	-*/+
Barai	-	-*	-*	-	-*/+
Menya	-	-*	-*	-	-*/+
Salt-Yui	-	-*	-*	-	-*
Alamblak	-	-*	-*	-	-*
Vanimo	-	-*	-*	-	?

The asterisks indicate that the differentiation is made only in verb cross-referencing, which means there is only a limited differentiation potential. Firstly, the languages vary in the number of distinctions made by the person/number cross-references; some make as many as nine (1,2,3 person and singular, dual, and plural number) whereas others, such as Usarufa, make as few as two (first person versus non-first person). Secondly, when two third-person entities are involved, the cross-reference does not help in disambiguating (some, such as Alamblak do differentiate between masculine and feminine but even this is only a partial aid). The problem of disambiguation then is not totally solved

by these criteria mentioned. Greenberg's Universal #41 states, "If in a language the verb follows both the nominal subject and nominal object as the dominant order, the language almost always has a case system." Since all the languages studied except Au meet the criterion (SOV) for this universal, it must be questioned in light of the data presented. Au is the only one of the languages for which word order is rigid and, therefore, a dependable disambiguating criterion.

To a large degree, therefore, disambiguation is achieved by an interaction of several factors. In addition to those presented in the typology, word order, animacy constraints, focus markers, and context need to be taken into consideration.

3. GENERALISATIONS

This section seeks to make generalisations as to what patterns co-occur or occur in a particular language family/location with predictability.

1. No languages case-mark Agent, Actor, and Patient contrastively.
2. If a language contrasts Agent with Actor-Patient in the NP or pronoun (i.e. Ergative-Absolutive), it is only the Agent which is marked, and probably obligatorily.[1]
3. If a language marks Patient NPs distinctively from Agent-Actor NPs (i.e. Nominative-Accusative), the case markings will probably be optional.
4. If a language differentiates between Agent, Actor, and Patient NPs, it will differentiate pronouns in the same way.
5. If a language makes no differentiation between Agent, Actor, and Patient NPs, it may nevertheless mark Patient pronouns distinctively.
6. If a language allows only one person/number cross-reference on the verb, it will probably be the Agent/Actor (Barai is the only exception).

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[1] This generalisation is falsified by the data from Hua, as noted in Dixon (1979) and pointed out to me by John Haiman (pers.comm.).

7. If a language makes no differentiation between Agent, Actor, and Patient NPs, it will contrast Agent-Actor with Patient in the verb. If it has a nominative-accusative NP marking system, it will probably do the same, but if it has an ergative-absolutive system, there is no such constraint.
8. If a language does not differentiate between Patient and Recipient NPs, neither will it differentiate with pronouns (Kapau is a possible exception).
9. If a language does not differentiate between Agent, Actor, and Patient or if it is nominative-accusative in its NP and pronoun system, it will probably not differentiate between Patient and Recipient. Languages with an Ergative-Absolute NP and pronoun system are not predictable.
10. Trans-New Guinea Phylum languages cross-reference Agent-Actor as the last-occurring person/number, or not at all.
11. If a language differentiates between Recipient and Beneficiary in the NP and pronouns, it will also differentiate on the verb.
12. If a language cross-references person and/or number of Beneficiary, it will also do so for Recipient.
13. Trans-New Guinea Phylum languages located on the central mountains cordillera east of the Northern Province, cross-reference Patient and Recipient with a single prefix set, or not at all. (Elsewhere there may be a prefix or a suffix.)
14. If a Beneficiary person/number cross-reference is different from Recipient person/number cross-reference, the Recipient affix will be closer to the verb system.

4. DISCUSSION

4.1 GREENBERG'S UNIVERSAL NO.41

It has already been pointed out that the universal which states that dominant SOV order almost always implies a case system does not

hold true for many Papuan languages. SOV is the dominant order, but there is very little evidence of fixed case systems. Hyman (1975:116-7) gives Ịjọ of the Niger-Congo as another example of SOV order without case markings, and states that the proto-language of the whole family was that way. He reports Venneman as arguing that SOV languages change to SVO when they lose their case markings, in order to avoid ambiguity. If Venneman is correct, there should be evidence for Papuan languages changing towards an SVO order.

4.2 OPTIONAL CASE MARKINGS

It was pointed out in the typology of Agent, Actor, and Patient NPs (2.1.1) that a considerable number of languages are described as having what appear to be optional case markers. It is here suggested that in most, if not all cases, these are actually operating at a higher level of the grammar than clause, as indeed some of the original authors of the language descriptions so describe them. Thus a real case marker, which serves to disambiguate NPs, is obligatory.

There are two types of such optional markings: (i) that which occurs on Agent and/or Actor (Bine, Siroi, Waskia, Kunimaipa, Korafe, Yupna, Selepet, Nabak, and Timbe) and (ii) that which occurs on Recipient, Patient, and in some languages, Beneficiary (Waris, Anggor, Yessan-Mayo, Narak, Agarabi, and Angaaṭ̈ha).

The conditioning factors for the marker on Agents and Actors given in various of the papers referred to include displacement from initial position, introduction of new participants, emphasis of one group of participants over or to the exclusion of another, and the identification of the controlling identities at the various stages of the discourse. In the case of Timbe, clauses elicited in isolation give the impression that it is an ergative language with Agent case-marked by the suffix -ne, and Actor never. In text, however, there is no more than 60% consistency with this usage; instead it becomes clear that the function of -ne is to indicate the controlling entities.

The markers which occur with Patient, Recipient, and Beneficiary NPs are frequently labelled or described as emphasis or focus markers.

For example, Huisman (1980:8) calls the Angaaṭiha suffix -ai ∿ -i the focal object clitic; it is obligatory on what he calls the Focal Object (Indirect Object), can occur on the Object when it is "focal in the clause" (1980:2) and "can occur in the Subject tagmeme. When it does, it puts the subject in sharp focus" (1980:11). One outstanding fact in many of the languages with this feature is the frequent restriction (in some instances stated by the original authors) of these markers to animate or even human referents. The relevance of this restriction is supported by the fact that the marker is frequently optional on Patient NPs but obligatory on Patient pronouns and Recipient NPs and pronouns (all of which are normally human). Again, therefore, it is proposed that these are not inherently case markers but are giving a secondary focus (as opposed to Agent/Actor) and, since human and animate entities are likely to be focussed, the markers occur frequently with these roles.

4.3 THE VALIDITY OF INDIRECT OBJECTS

In view of the large number of languages which do not differentiate between Patient and Recipient, the existence of a separate syntactic category, Indirect Object, must be questioned. Indeed authors of several of the papers studied have not proposed a separate category. Faltz (1978:76) classifies strategies for marking Indirect Objects as the Direct Object type (both marked the same), the oblique type (adpositional phrase) and the dative type (use of a special case for Indirect Object). He concludes (85):

> the syntactic alignment of indirect objects with direct objects and obliques in the first two classes respectively suggests that at least languages with these types of indirect object marking lack a syntactic indirect object category altogether.

Referring to Table 14, twenty-three of the languages surveyed are undoubtedly of the DO type (note that some extend this to include Beneficiary as well as Recipient), and a further five differentiate between Patient and Recipient only in the verb, which may indicate a difference of verb class rather than a different syntactic category for the NP (see also 4.4 regarding the function of verb cross-referencing).

Of the other seven, all but Kunimaipa mark Recipient NP in the same way as they do a wide range of other roles, and so appear to be of the oblique types. Only Kunimaipa has an affix used exclusively for Recipient.

For the majority of Papuan languages, therefore, it would appear to be more appropriate to describe certain verb classes as capable of allowing two manifestations of the Object category, which is the analysis Gary and Keenan (1976) proposed in their analysis of Kinyarwanda.

4.4 FUNCTIONS OF CROSS-REFERENCING

The majority of the languages studied allowed at least one entity to be cross-referenced on the verb, amd some as many as three entities. The inefficiency of the cross-referencing as a syntactic disambiguating strategy has already been pointed out (2.4). It is proposed that the primary function of person/number cross-referencing within the verb, and especially that of non-Agent/Actors, is a pragmatic strategy used to indicate the prominence of the entity/entities cross-referenced. The assignment of this prominence is constrained firstly by a semantic role hierarchy and secondly by a referential hierarchy.

Bruce (1979:342) proposes the following semantic role hierarchy for Alamblak 'Undergoer' cross-referencing.[1]

Affective > Patient > Locative roles > Temporal reference Range Referent

Thus, for Alamblak, an entity cannot be cross-referenced if there is present in the same predication an entity fulfilling a higher role. However, for the locative and temporal roles there is the further restriction that the entity must be both definite and specific as in (8).

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[1] This second cross-reference is not obligatory, so it cannot be argued that its function is purely syntactic.

(8) Alamblak

na ɨndar kun-t gënNgtay-an-t.

I DEM *house*-3SF *cold*-1S-3SF

'I am cold in this house.'

Bruce asserts that it is the role hierarchy which is of primary significance on the basis of (9) in which a non-human recipient is cross-referenced in preference to a human patient.

(9) Alamblak

yima-r met-t mugr-m he-më-r-m.

person-3SM *woman*-3SF *crocodile*-3PL *give*-RP-3SM-3PL

'A man gave the crocodiles a woman.'

Menya does not allow the cross-referencing to extend as far down the role hierarchy, because it is restricted to animate (and only rarely non-human) entities. The referential hierarchy is, therefore, exerting a stronger influence and this is further evidenced from (10) and (11).

(10) Menya

apäkä häŋ-uaquɨ ä-w-ɨ-k-uwä-ɨ

woman INDEF-3DF R-3-*give*-PA-3PL/PA-IND

'They gave two women to him.'

(11a) Menya

? apäkä ɨ-uaŋguɨ ne qe Pätäque w-ɨ-atuŋque.

woman DEM-2DF 1P 2D *Pätäque* 3-*give*-1P/INTEN

'You two women, we are going to give you to Pätäque.'

(11b) Menya

apäkä ɨ-uaŋguɨ ne qe Pätäque-nqä qe-quatämäu-atunque.

woman DEM-2DF 1P 2D *Pätäque*-REF 2D-*send away*-1P/INTEN

'You two women, we are going to send you to Pätäque.'

The predication being referred to is the giving of two women to a snake named Pätäque. In (10), which is taken from the text, the referent of the w- prefix cannot exclusively be determined because it indicates neither number or gender. Informant reaction to (11a), however, was that it is only marginally acceptable, presumably because of the conflict between the high referentiality of the second person patient and the higher role of the non-human recipient. As an alternative, this informant supplied (11b) in which the snake is 'demoted' to a locative

role and the conflict is avoided. Thus, the degree of interaction between the two hierarchies is language-relative.

The role hierarchy takes effect even in languages which use an oblique NP for Recipient such as Yupna (12) (the -do suffix also indicates beneficiary, purpose, and referent so Yupna does not use a dative strategy for Recipient).

(12) Yupna

on nak-do naa-bi.
this me-to 1S-2S/FUT
'Give it to me.'

The placing of the Beneficiary on the hierarchy also appears to be language specific. For some languages, a Beneficiary is always prominent and, therefore, always cross-referenced either by a distinct affix in those languages which allow three entities to be cross-referenced or, where only two are allowed, being at the top of the role hierarchy. For other languages, it is below the part on the hierarchy to which cross-referencing may extend and is, therefore, never cross-referenced and never prominent. Finally, there are some languages which would normally place Beneficiary low on the hierarchy but can, by use of a special benefactive marker on the verb, indicate that the beneficiary is to be prominent and, therefore, cross-referenced. In those languages, the case marking normally found on the Beneficiary NP is dropped. Olson gives (13) and (14) as contrastive examples in which the difference is that in (14) the Beneficiary is raised from what he calls a peripheral to a nuclear role.

(13) Barai

fu no-efuo ire kira.
3S 1P-BEN *food prepare*
'He is preparing food for us.'

(14) Barai

fu a ire kira-i-a.
3S 2S *food prepare*-BM-2S
'He is preparing food for you.'

It is proposed, then, that disambiguation is not dependent on any single strategy in most Papuan languages, but on an intricate network

of factors including case markings, word order, functional constraints (such as animacy for recipients) and the input from what appear to be primarily prominence marking strategies.

APPENDIX A: CLASSIFICATION OF LANGUAGES

LANGUAGE	FAMILY	STOCK	PHYLUM	PROVINCE
1. Yele	-	Yele-Wasi	E.Papuan	Milne Bay
2. Vanimo	Vanimo	Sko	N.Papuan	W.Sepik
3. Waris	-	Waris	"	"
4. Au	Wapei	Wapei-Papai	Torricelli	"
5. Anggor	-	Senagi	Sepik Ramu	"
6. Yessan-Mayo	Tama	Mid-Sepik	"	E.Sepik
7. Iatmul	Ndu	"	"	"
8. Alamblak	Sepik-Hill	"	"	"
9. Bine	E.Trans-Fly	Trans-Fly	Trans-New Guinea	Western
10. Podopa	Teberan	Teberan	"	Gulf
11. Kewa	W.Central	East NGH	"	S.H'lds
12. Kaugel	Central	"	"	S.&W.H'lds
13. Narak	"	"	"	W.H'lds
14. Salt-Yui	"	"	"	Simbu
15. Gahuku	E.Central	"	"	E.H'lds
16. Agarabi	Eastern	"	"	"
17. Gadsup	"	"	"	"
18. Usarufa	"	"	"	"
19. Baruya	-	Angan	"	"
20. Menya	-	"	"	Morobe
21. Kapau	-	"	"	"
22. Agaatɨha	-	"	"	"
23. Kunimaipa	-	Goilala	"	"
24. Korafe	Binandere	Binandere	"	Northern
25. Barai	Koiarian	Koiari-Monubara-Yareban	"	"
26. Daga	-	Daga	"	Milne Bay

LANGUAGE	FAMILY	STOCK	PHYLUM	PROVINCE
27. Selepet	West Huon	Huon Penin.	Trans-New Guinea	Morobe
28. Timbe	"	"	"	"
29. Nabak	"	"	"	"
30. Yupna	Gusap-Mot	Finisterre	"	Madang
31. Usan	Numugenan	Pihom	"	"
32. Mauwake	Kumilan	"	"	"
33. Amele	Gum	Mabuso	"	"
34. Siroi	Kabenau	Rai coast	"	"
35. Waskia	Kowan	Isumrud	"	"

APPENDIX B: SUMMARY OF RAW DATA AS TAKEN FROM SOURCE PAPERS

NAME	NOUN PHRASE					PRONOUN					BCM	VERB
	AG	AC	P	R	B	AG	AC	P	R	B		
Yele*	+a	-	-	+b	+c	II+a	I	I	III	II+c	REF	AC-Vi-AC AG-Vt-P
Vanimo*	-	-	-	-	?	I	I	I	I	?	?	A-V
Waris*	-	-	±a	+a	+a	I	I	I±a	I±a	I+a		V-BM
Au*	-	-	-	-	-	I	I	-	-	-	-	A-V-BR-P
Anggor*	-	-	±a	+a	+ab	I	I	II+a	II+a	II+ab	REF	Vi-AC Vt-AG-P Vd-AG-P-R
Yessan-Mayo*	-	-	±a	±a	±a	I	I	I+a	I+a	I+a		V
Iatmul	+a	+a	-	+b	+b	I+a	I+a	I	I+b	I+b	REF	V-A
Alamblak*	-	-	-	-	-	I	I	I	I	I	-	V-BM-A-PRB
Bine*	±a	±a	±b	±b	+c +d	I	I	II	II	III III+d	POS REF	APBR-V-A
Podopa*	+a	-	-	-	+b	II	I	I	I	I+b	LOC	V-BM
Kewa*	+a	-	-	±b	+c +d	I+a	I	I	I±b	I+c I+d	POS LOC	Vs-A2 Va-A1
Kaugel*	+a	-	-	-	+b	I+a	I	I	I	I+b	POS	V-BM-A
Narak*	-	-	±a	+a	+a	I	I	II	II	II		V-A
Salt-Yui*	-	-	-	-	-	I	I	I	I	I	-	V-A
Gahuku*	+a	+a	- +b	- +b	- +b	I III	I III	II	II	II	-	BPR-V-A
Agarabi*	-	-	±a	±a	±a	I+b	I+b	I+a	I+a	I+ba		PR-V-B-A
Gadsup	-	-	-	-	-	I	I	II	II	II	-	PR-V-B-A

NAME	NOUN PHRASE					PRONOUN					BCM	VERB
	AG	AC	P	R	B	AG	AC	P	R	B		
Usarufa	-	-	-	+a	+a	I	I	II	I+a	I+a	REF	PRB-V-BM-A
Baruya	+a	+a	+b	+b	+c	I	I	I+b	I+b	I+c	LOC	PR-V-A
Menya*	-	-	-	-	- +a	I	I	I	I	I I+a	- REF	PRB-V-BM-A
Kapau	-	-	-	+a	+b	I	I	I+a	I+a	I+b	REF	PR-V-A
Agaat±ha	-	-	±a	+a	+b	I	I	I±a	I±a	I+b	REF	PRB-V-A
Kunimaipa*	±a	±a	-	+b	+c	I±a	I±a	I	I+b	I+c	REF	PR-V-A
Korafe*	±a	-	-	+b	+b	I±c	I	I	I+b	I+b	REF	V-A
Barai*	-	-	-	-	- +a +b	I	I	I	I	I I+a I+b	- LOC REF	V-BM-PRB
Daga*	-	-	-	-	+a	I	I	I	I	I+a	REF	R-V-P-A
Selepet*	±a	-	-	-	+b	I±a	I	I	I	I+b	POS	V-PR-B-A
Timbe	±a	-	-	-	+b	I±a	I	I	I	I+b	POS	V-PR-B-A
Nabak*	±a	±a	-	-	+c	I±a	I±a	I	I	II	POS	PR-V-B-A
Yupna	±a	±a	±b	±c	±c	I±a II	I±a II	I±b	I±c	I±c	REF	PRB-V-A
Usan*	-	-	-	-	+a	I	I	I	I	I+a		PR-V-B-A
Mauwake*	-	-	-	-	-	I	I	II	II	II	-	PRB-V-BM-A
Amele*	-	-	-	-	- +a	I	I	I	I	I I+a	- REF	V-PR-B-A
Siroi*	±a	±a	±	-	+b	I±a	I±a	I	I	I+b	REF	V-PR-A
Waskia*	±a	±a	-	-	-	I+a	I+a	I II	I II	I II	-	V-P-A

KEY TO APPENDIX B

*	see notes below
A	Agent and Actor
AC	Actor
AG	Agent
B	Beneficiary
BCM	beneficiary case marker - other functions
BM	benefaction marker
LOC	Locative
P	Patient
POS	Possessive
R	Recipient
REF	Referent
V	Verb stem
Va	Verb stem - active
Vd	Verb Stem - ditransitive
Vi	Verb stem - intransitive
Vs	Verb stem - stative
Vt	Verb stem - transitive
I,II	pronoun sets
a,b,c,d	case markers (± optional; + obligatory)

* NOTES TO APPENDIX B

Yele: '*give*' suppletive stem

Vanimo: '*hit*' suppletive stem

Waris: BM indicates R or B
all verbs suppletive for No. of A and P

Au: free pronouns never occur as P,R,B

Anggor: '*a*' suffix labelled prominence

Yessan-Mayo: '*a*' suffix appears to be human only

Alamblak: PRB suffix role hierarchy determined

Bine: Verb prefix dependent on clause type

Podopa: AG pronouns are I+a for dual and plural

Kewa: '*give*' suppletive stem
A2 implies benefaction

Kaugel: R does not include Addressee

Narak: II pronouns appear to be I modified

Salt-Yui: B verb chain *'V B-give'*

Gahuku: B verb chain *'V B-for'*

NP strategies noun class dependent

Agarabi: *'a'* probably focus

Menya: 3rd person demonstrative pronouns mark P, R, & B

Angaaṫha: *'a'* is focal object and can even occur on AG and ACT

PRB prefix can have two manifestations

Kunimaipa: *'a'* glossed emphasiser in all examples

Barai: PR affix heavily restricted

Daga: R and P cannot be cross-referenced simultaneously

Selepet: *'say'* has Addressee prefix

Nabak: *'say'* has Addressee suffix

Usan: *'a'* is the only relator in Usan

Mauwake: PRB preposition rather than prefix for most verbs

Amele: B cross-reference optional

B verb chain *'B-help V'*

Siroi: some suppletive stems and some infix for PR

BCM also possessive

Waskia: P suffix marks number only

'give' suppletive stem

B verb chain *'V B-give'*

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