The argument structure of undergoer voice clauses in Formosan and other Philippine-type languages

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1 Preliminaries

All too often, the voice systems of dynamic (unergative) verbs in Philippine-type languages continue to be presented as if they consist of four (or more) voices with equal status. Sometimes the voices are more appropriately divided into the actor voice on one hand and undergoer ('non-actor') voices on the other. It seems hardy ever to have been observed, however, that within the undergoer voices, a further division is necessary between the patient voice, with two arguments, and the locative and conveyance voices (in the terminology of Himmelmann 2005), with three arguments, and this is the main topic of this paper. This division applies to what Payne (1994: 324) and Huang (2002) call 'lexically transitive' verbs, i.e. verbs whose semantics entail two participants. With three-participant verbs the situation is a little different, as all voices may then have three arguments.

The languages I examine here are drawn from geographic extremes of the Philippine-type area. Paiwan, Puyuma and Tsou, are Formosan, whilst Kimaragang is spoken in Sabah. However, these languages are not a cross-section of Philippine-type languages, and their choice was determined partly by data availability, and by my relative familiarity with the Formosan languages. A much wider survey remains desirable.

My approach is based on Goldberg's (1995) construction grammar account of argument structure, which enables one to give separate answers to the questions of how many participants a verb entails semantically and how many arguments a construction has. The approach has a convenient spin-off. It offers an account of the oblique-marked undergoer argument in actor voice clauses and shows that there is a parallel between this and the oblique-marked argument in the three-argument constructions of undergoer voice clauses.

What is meant by a 'Philippine-type language'? Himmelmann offers a definition based on his notion of a 'symmetrical-voice language'. He defines a symmetrical-voice language as one which has at least two voice alternations marked on the verb, neither of which is clearly the basic form (Himmelmann 2005: 113).[2] He then defines a Philippine-type language as

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[2] Note that Himmelmann's use of 'symmetrical' refers only to morphological features, unlike its uses by Arka's (2003) and Foley's (1998) use, which labels the claim that actor and undergoer voices are both transitive.

(1) a symmetrical-voice (western Austronesian) language which has
   a. at least two formally and semantically different undergoer voices;
   b. at least one phrase marking clitic, other than a locative, for nominal expressions e.g. Tagalog *ng*;
   c. pronominal second position clitics.

This is a typologist's definition of the so-called 'focus system' of Philippine-type languages, and such systems have received a great deal of descriptive and analytical attention in the decades since the 'topic and focus' analysis first emerged in McKaughan (1958), Thomas (1958), Dean (1958) and Healey (1960). Most of this attention has been directed towards the matters listed in (2):

(2) a. Morphosyntax: How many voices? What verbal morphology, including aspect and mood? What case-marked arguments accompany each voice? How are these arguments marked, both as pronominals and as full NPs?
   b. Semantics: What semantic roles may furnish the subject (nominative-marked) argument of each of the undergoer voices?
   c. Transitivity: Is the actor voice transitive or intransitive? (Hardly anyone doubts that undergoer voices are transitive.)
   d. Discourse pragmatics: How do speakers choose between the different voices?

Discussion of these matters is sometimes obfuscated by attempts to make generalisations across all Philippine-type languages, or across all Formosan languages. There is no reason to think that there are crosslinguistically valid answers to these questions, and ample evidence that Philippine-type languages vary on every one of these parameters.

These issues, however, are not central to this paper. Here I want to look at the argument structure of voices in Philippine-type languages, paying particular attention to undergoer voice clauses.

2 The analysis of 'focus' forms in Philippine-type languages

Before I proceed with this task, I will outline how I prefer to characterise a Philippine-type voice system. The examples in (3) are obviously elicited and bear only a limited resemblance to sentences in real discourse, but they allow me to make an introductory point. They are shown with two sets of glosses, the first representing a 'topic and focus' analysis (which probably no one uses in its entirety today), the second a variant of the analysis proposed by Ross and Teng (2005).[3]

(3) Paiwan (southern Taiwan):
   a. *qalup=aken tua vavuy i gadu*
      <AF>hunt=TPC:1S OBL pig LOC mountain
      <AV>hunt=NOM:1S OBL pig LOC mountain
      'I hunt boar on the mountain.'
   b. *ku=qalup-en a vavuy i gadu*
      GEN:1S=hunt-PF TPC pig LOC mountain
      GEN:1S=hunt-UV1 NOM pig LOC mountain
      'I hunt boar on the mountain.'
   c. *ku=qalup-an a gadu tua vavuy*
      GEN:1S=hunt-LF TPC mountain OBL pig
      GEN:1S=hunt-UV2 NOM mountain OBL pig

[3] Paiwan examples are given in the orthography of Chang (2006), regardless of their source.

'I hunt boar on the mountain.'

d. *ku=si-qalup a vuLuq tua vavuy*
GEN:1S = IF-hunt TPC spear OBL pig
GEN:1S = UV3-hunt NOM spear OBL pig
'I hunt boar with a spear.' (1982: 31)

I refer to the two analyses as A and B.[4] The two obvious differences between them are:

(4) a. The topic (TPC) in A is the nominative-marked NP (the subject) in B.
b. In A the verb forms are analysed as four equally ranked focuses: actor focus (AF), patient focus (PF), locative focus (LF) and instrument focus (IF). In B the actor focus is actor voice (AV), and the other three focuses are treated as variants of a single undergoer voice (UV1, UV2 and UV3)

The distinction between actor voice and the undergoer voices, made by Himmelmann (2005), is self-evident. The subject of the AV construction is the actor, and its indefinite patient appears in oblique case. The subjects of the three UV voices are non-actors, and the actor appears in the genitive.[5] Himmelmann labels UV1, UV2 and UV3 as patient, locative and conveyance voice respectively. Ross and Teng (2005) opted not to use these terms because in any Philippine-type language each undergoer voice encodes a considerable range of semantic roles (and these roles differ somewhat from language to language). Role-based labels tend to perpetuate the myth that there is a more exact correspondence between voice selection and semantic role than there actually is. Closer to the truth is the rather vague generalisation that UV1 is likely to encode greater affectedness of the undergoer than UV2, UV2 greater affectedness than UV3.

There is another point to be made about these labels, however. This is that it is appropriate to analyse Philippine-type languages as having just *two* voices: actor and undergoer. The alternation of UV2 and UV3 with UV1 is best not analysed as a voice alternation, as the function of UV2 and UV3 is generally to increase valency by replacing the patient-like undergoer of UV1 with less patient-like argument role. In other languages this is the function of applicative affixes.

Thus in Indonesian the locative object of the prepositional phrase *di halaman belakang kita* 'in our backyard' in (5a) becomes the undergoer of the verb with the locative applicative suffix *-i* in (5b), whilst the theme undergoer in (5a), *pohon* 'tree', becomes the object of the instrumental preposition *dengan* in (5b).

(5) Indonesian:

a. *saya menanam pohon (di halaman belakang kita)*
1S AV:plant tree in yard back 1P
'I planted a tree (in our backyard).'

b. *saya menanam-i halaman belakang kita dengan pohon*
1S AV:plant-APPL.LOC yard back 1P with tree
'I planted a tree in our backyard'

[4] Abbreviations used in interlinear glosses (other than those used only in analysis A in 3) are: APPL applicative , AUX auxiliary, AV actor voice, D definite, GEN genitive, ID indefinite, IRR irrealis, LOC locative, NOM nominative, OBL oblique, P possessor , PERF perfect, PS personal singular, R realis, REDUP reduplication, UV undergoer voice. 1S, 2S, 3S, 1P, 2P, 3P are first person singular etc. 1IP is first person inclusive plural.

[5] Ross and Teng (2005) labelled Puyuma AV as intransitive (because this is arguably the best analysis for Puyuma) and UV1, UV2 and UV3 as TR1, TR2 and TR3. This remains our analysis of Puyuma, but my observations here apply to a wider range of languages, in some of which the AV construction is not always intransitive. I have opted for the choices in B in order to use similar glosses across languages.

Similarly in Paiwan the locative object of the prepositional phrase *i tua gadu* 'on the mountain' in (3b) becomes the undergoer *a gadu* of the verb with the UV2 suffix *-an* in (3c), whilst the patient undergoer in (3b), *a vavuy* 'boar', becomes the oblique marked *tua vavuy* in (3c).

In (3d) an instrument becomes the undergoer *a vuLuq* 'the spear' of the verb with the UV3 preffix *si-*, and the patient undergoer *a vavuy* 'boar' in (3b) again becomes the oblique marked *tua vavuy*.

This alternation is summarised in (6).

(6)

	Patient	Non-patient
Default transitive:	UNDERGOER	(ADJUNCT)
Applicative:	ADJUNCT	UNDERGOER

There is, of course, an alignment difference between Indonesian and Paiwan, so that the undergoer in Indonesian is the object of the verb, in Paiwan, the subject. I am not aware of studies of ergatively aligned languages with applicatives which modify transitive verbs, but what happens in Paiwan is precisely what one would predict for such a language, and so it is reasonable to suggest that Paiwan UV2 and UV3 are applicative-like alternations rather than voice alternations.[6] The fact that there is more than one applicative-like construction, namely UV2 and UV3, is reminiscent of languages that have several applicative affixes encoding various semantic roles. These include both Austronesian languages like Indonesian (with *-i* and *-kan*) and languages of other families like Kinyarwanda (Bantu).

There are two other morphosyntactic differences between the Paiwan and Indonesian applicatives. In the default Indonesian transitive construction in (5a), there is no applicative-like or transitive-marking affix. Many languages with applicatives are like this. In Paiwan, however, there is also a suffix, *-en*, in the default transitive construction in (3b). This is not crosslinguistically as unusual as it may seem. Not only do most Philippine-type languages have such an affix, but so do many Oceanic Austronesian languages, with reflexes of Proto Oceanic **-i* 'transitive' and **-aki(n)/*-akini* 'applicative' .

The second difference is that in Indonesian (and many other languages with applicatives) there is an active/passive alternation with both default transitive and applicative forms. In Paiwan there is only one actor voice (some would say antipassive) in (3a) corresponding to the three transitives in (3b), (3c) and (3d). This is of course a feature of Philippine-type languages.

Both these facts have contributed to the analysis of the constructions in (3c) and (3d) as voices. However, it seems clear that functionally they are applicative-like, and this is not an entirely new idea. It was put forward by Starosta (1986), who used the term 'recentralization' for applicativisation, and it is mentioned in passing by Payne (1994: 323–324, 1997: 54) and Kroeger (1996: 41–42).

3 A constructional approach to argument structure

The construction grammar approach her is, inspired by Goldberg (1995),[7] which is devoted to argument structure. An important feature of Goldberg's theory is that she rejects the concept of lexical rules for deriving from one another the various argument structures that occur with a single verb,

[6] I have deliberately skewed my choice of applicative example in (5b), since (i) the most patient-like argument does not always take on adjunct-like form in an applicative construction, but may remain an unmarked core argument; and (ii) applicatives often also turn intransitives into transitives (and Mithun 2000 describes an ergatively aligned language where this occurs). But these alternations are not relevant to the discussion here.

[7] Construction Grammarians form two camps, the HPSG-like Berkeley approach of Fillmore and Kay (Fillmore 1988, Fillmore et al. 1988, Kay 1997, Kay and Fillmore 1999; see also Michaelis and Lambrecht 1996, Michaelis 2000, Michaelis and Ruppenhofer 2001 and Fried and Östman 2004) and the typologically oriented Radical Construction Grammar of Croft (2001). I incline towards the latter. Goldberg's work is compatible with both.

and instead sees the latter as the product of 'fusing' a verb with various argument structure constructions, making the case that this gives a better account of the data (Goldberg 1995: 7–23). Michaelis and Ruppenhofer (2001: 1–50) argue similarly from their analysis of the behaviour of the German applicative construction.

3.1 An English example

Goldberg (1995: 54) provides a striking English example reproduced here as (7b).[8]

(7) a. i. *He sneezed.*

ii.

Verb:		*sneeze*	⟨	sneezer	⟩
Cx:	Sem	ACHIEVE	⟨	**agent**	⟩
	Syn	**VERB**		SUBJ	

b. i. *He sneezed the napkin off the table.*

ii.

Verb:		*sneeze*	⟨	sneezer			⟩
Cx:	Sem	CAUSE-MOVE	⟨	**cause**	**theme**	goal	⟩
	Syn	**VERB**		SUBJ	OBJ	PREPP	

The crucial point here is that the verb *sneeze* has only one participant role, the 'sneezer', and *sneeze* would normally be fused with the intransitive construction as *He sneezed*, as in (7a). However, in Goldberg's perfectly acceptable (7b), it is fused with the CAUSED-MOVE construction, such that it acquires three arguments. One of these, the 'sneezer', is provided by the verb and is obligatorily expressed, but must be combined with a semantically compatible argument role, in this case the cause.[9] The other two argument roles, theme and goal, are provided by the construction.

I have used terms above which require some explanation. First, Goldberg distinguishes between *participant roles* of the verb and *argument roles* of the construction. These argument roles are the 'core arguments' of the clause in the sense of Van Valin and LaPolla (1997: 154–159) and Van Valin (2001), who include as core arguments not only the actor and undergoer but also onlique-encoded arguments implicated in the semantics of the construction, like *off the table* in (7b).[10] This means we need terms which distinguish a core argument encoded as a complement NP from one encoded like an adjunct. The most explicit terms I can think of are 'complement core argument' and 'adjunct-like core argument'. I will abbreviate these to 'c-core argument' and 'a-core argument' respectively.

The terms 'core', 'actor' and 'undergoer' all originated in Role and Reference Grammar, but their use does not imply acceptance of the panoply of theoretical presuppositions set out in Foley and Van Valin (1984) or Van Valin and LaPolla (1997). The terms SUBJ and OBJ in (7) are intended to be language-specific and in no sense universal.

[8] My notation is adapted from Goldberg's. Macrorole arguments (Goldberg's 'direct grammatical relations') of the construction (abbreviated 'Cx') are bolded. Unbolded arguments are encoded as prepositional phrases. Constructions are form–meaning pairings, hence 'Syn' and 'Sem'.

[9] The notion of semantic compatibility and the mapping of verbal roles onto constructional roles is the topic of Goldberg (1995: 43–59) and Goldberg (1997). The linking of constructional roles like cause, theme and goal to language-specific grammatical categories like SUBJ and OBJ is discussed by Goldberg (1995: 101–119), and also Foley (2005: 385–383).

[10] Two cautions. First, Van Valin and LaPolla (1997) would say 'implicated in the semantics of the verb', but in the construction grammar analysis it is the construction that provides the arguments. Second, in earlier Role and Reference Grammar usage, Foley and Van Valin (1984: 89-94) reserved 'core argument' for the actor and undergoer, and used the term 'inner periphery' for a core argument with adjunct-like (oblique) encoding. Foley (1998), Arka (2005) and Himmelmann (2005) also use 'core' in this more limited sense.

3.2 Transitivity

The constructional approach has implications for the definition of transitivity. First, transitivity is a property of the construction, not of the verb (Goldberg 1995: 117–118). Second, a transitive construction is one in which two argument roles are mapped onto c-core arguments, i.e. onto subject and object in an accusatively aligned language and onto absolutive and ergative (nominative and genitive in Formosanist terminology) in an ergatively aligned language. A difficulty arises, however, in those Philippine-type languages in which the transitivity of the actor voice is ambiguous. How do we tell whether it is transitive or intransitive? In Paiwan and Puyuma, there are three cases: nominative, genitive and oblique. Both languages behave as in (3a): the undergoer is in oblique case and thus has the form of an adjunct, i.e. it is an a-core argument. It follows, therefore, that the actor voice construction is intransitive.

There is, however, a difference between the Paiwan and Puyuma voice distributions. In Puyuma independent clauses the oblique undergoer is categorically indefinite. In Paiwan it tends strongly to be indefinite, but if the actor outranks the undergoer in 'topicality' (referent-continuity), actor voice may be chosen even when the undergoer is definite (Chang 2006: Ch. 14). Consequently, Paiwan sometimes uses an actor voice clause where Puyuma would use undergoer voice. Thus there are different distributions of the voices in different Philippine-type languages, usually varying along parameters having to do with grounding, referent-continuity and definiteness (Huang 2002), with undergoer voice (transitive) clauses occurring in foregrounded (story-line) clauses. Foregrounded clauses are more likely to entail referent-continuity than are backgrounded clauses, and continuous referents are typically definite (Arka and Ross 2005: 8–13). Foregrounded clauses are also likely to be telic and realis, and these factors also influence voice selection (Katagiri 2005).

Hopper and Thompson (1980) show that because such features as telic aspect, realis mood and definiteness of the undergoer are associated with foregrounding, they are also associated with with transitive clauses. These features often have near-categorical associations with transitive clauses, such that one or other association becomes grammaticised through frequent use. Unfortunately, a school of thought has grown out of Hopper and Thompson's work which views these associations as directly causal and uses these features as diagnostics of transitivity, rather than simply its correlates. This is unfortunate, as it obfuscates the defining feature of a transitive construction, namely that it is a construction in which two participants are encoded as c-core arguments.

A parallel research tradition has grown out of the work reported in Cooreman et al. (1984) whereby the discourse distributions of clause constructions with regard to referent-continuity have also come to be used as diagnostics of transitivity. Again, there is no direct causal relationship, and in any case the distributions themselves cannot be described without reference to independent descriptions of the constructions. What is more, discourse distributions are not categorical, and tend to change gradually over time, sometimes themselves leading to constructional change (Bybee and Hopper 2001), as with the emergence of an accusative marker in the Saisiyat actor voice construction which has rendered the construction transitive (Yeh 1991, 2003).

Some scholars seem to have adopted the features mentioned in the two paragraphs above as transitivity diagnostics out of desperation, as the attrition of noun-phrase case-markers in some languages and their functional overlaps in others (e.g. Tagalog *ng*) render them unusable as identifiers of c- and a-core arguments and thus of transitivity. Others employ a respectable syntactic tradition which says that core arguments, and c-core arguments in particular, participate both in various 'coding' constructions besides case-marking (agreement, constituent order) and in a variety of 'behaviours', some clause-internal (control of reflexive, control of floated quantifier, control of depictive predicate, topicalisation of possessor) and some inter-clausal (control of null-instantiated arguments in subor-

dinate clause constructions, coreferential coordinate deletion).[11] Within a constructional approach, however, there is a logical problem with this methodology. Each construction defines its own syntactic roles, and, as both Croft (2001: 147–155) and Van Valin and LaPolla (1997: 274–285) point out, there is no guarantee that what the latter call the 'privileged syntactic argument' (PSA) of one construction will match the PSA of other constructions. The best we can hope for is some set of implicational relationships which will allow us to use PSAs in the diagnosis of c-core-ness.[12] Recognising this, Arka (2005) argues for a 'core index', a measure of c-core-ness, based on a count of how many coding and behavioural constructions each would-be c-core argument participates in. The core index is effectively a measure of how unlike an adjunct a putative core argument is. In Balinese, a language with no case-marking, Arka finds the indices in (8), allowing him to conclude that both voices have two more-or-less c-core arguments (see also Arka 2003: 42–69).[13]

(8)

	Undergoer	Actor
Undergoer voice	10/12	9/12
Actor voice	10/12	12/12

This approach effectively renders transitivity a gradient feature. The alternative is to say that transitivity is categorical in its constructional semantics but that some languages provide us with insufficient morphosyntactic evidence to demonstrate this. Either way, this supports Dryer's (1997) claim that language-particular grammatical relations are unique.

4 The argument structure of undergoer voice clauses

The claim that UV2 and UV3 clauses in Philippine-type languages are applicative-like in function, and particularly that they are applicative-like in the sense of (6), has obvious implications for their argument structure, as it entails the claim that they have three core arguments. Case labels are bolded in interlinear glosses to maximise visibility of arguments.

In the sections below I look first at data from Paiwan, then from other Philippine-type languages.

4.1 Verbs with two participant roles

4.1.1 Paiwan (southern Taiwan)

First, by way of context, I give analyses of the default transitive UV1 and the intransitive AV for Paiwan verbs with two participant roles. Example (9) illustrates the UV1 construction,with two c-core arguments.[14]

(9) a. *k<in>an* *ni* *zepul* *a* *za* *ʔavay*
< UV1:PERF > eat **GEN**:PS Zepul **NOM** that ricecake
'Zepul ate that ricecake.' (Chang 2006: 72, Santi)

b.

Verb:		*kan* 'eat'	⟨	eater	food ⟩
Cx:	Sem	UV1	⟨	**agent**	**patient** ⟩
	Syn	**VERB**-*en*		**GEN**	**NOM**

[11] The terms 'coding criteria' and 'behavioural criteria' are Keenan's (1976).

[12] Kazenin (1994) and Croft (2001: 152–161) propose a 'subject construction hierarchy' ranging from coding constructions at the bottom to interclausal behaviours at the top, such that for any construction on the hierarchy, if it patterns ergatively, then lower constructions also pattern ergatively, and if its patterns accusatively, then higher constructions also pattern accusatively. This deals only with subjects, not with c-core arguments in general.

[13] '10/12', for example, means 'participates in 10 out of 12 criterial constructions'.

[14] Chang (2006) draws her examples from two dialects, Santi and Saichia.

Example (10) illustrates the AV construction. There are two arguments, both obligatory and supplied by the verb, but the patient is now an a-core argument.[15]

(10) a. *na=kesa ti zepul tua ?avay [katiaw]*
PERF = <AV> cook **NOM**:PS Zepul **OBL** ricecake yesterday
'Zepul cooked ricecake [yesterday].' (Chang 2006: 60, Santi)

b.

Verb:		*kesa* 'cook'	⟨	cook	product ⟩
Cx:	Sem	AV	⟨	**agent**	patient ⟩
	Syn	****VERB**		**NOM**	**OBL**

As I remarked earlier, the construction is intransitive by virtue of having only one c-core argument, its subject (**NOM**). The form ****VERB** also encodes intransitive verbs with just one core argument, as in (11).[16]

(11) a. *dava-davac ti zepul*
<ITR> REDUP-walk **NOM**:PS Zepul
'Zepul is walking.' (Chang 2006: 63, Santi)

b.

Verb:		*davac* 'walk'	⟨	walker	⟩
Cx:	Sem	ITR	⟨	**argument**	⟩
	Syn	****VERB**		**NOM**	

The intransitivity of the AV construction is above all dependent on the claim that the case-marker *tua* marks the oblique, i.e. is the case of some adjuncts, and that *tua ?avay* 'ricecake' in (10) is an a-core argument, not a c-core argument. Adjuncts with plain *tua* are in fact not very common in the data, due to the fact that locations are usually introduced by the locative preposition *i*, like *i gadu* 'on the mountain' in (3a) and (3b) (*i tua gadu* also occurs, apparently with the same meaning), and Paiwan makes quite heavy use of verb-serialising constructions to express adjunct-like semantic roles. However, the examples in (12) contain adjuncts with plain *tua*, marked by brackets.

(12) a. *vengetj-en [tua calis]*
tie-UV1 **OBL** rope
'he tied (them) [with a rope]' (Early and Whitehorn 2003: 003:008)

b. *aya itjen [tua na=macay] anga*
AV:speak **NOM**:1IP **OBL** PERF = AV:die EMPH
'so we talk like that [about the dead]?' (Early and Whitehorn 2003: 003:034)

c. *vaik [tua tjala-djalav-an]*
AV:go **OBL** SUPERL1-quick-SUPERL2
'go [as quickly as possible]' (Egli 2002: 81)

The *tua* argument in (10) is thus an a-core argument, and the construction as a whole is an 'extended intransitive construction' in the sense of Dixon (1994: 122-124) (see also Ross and Teng 2005 regarding Puyuma).

Typically, descriptions of Philippine-type languages treat UV2 and UV3 constructions as if they were similar to UV1, but this is often a mistake. When the UV2 and UV3 constructions introduce a *new* undergoer subject argument, this argument is often *not* a participant role (i.e. not implicated in the

[15] The bracketed portion does not belong to the exemplified construction.

[16] Goldberg (1995) would label the constructional meaning here more specifically as MOVE (rather than ITR), because of the possible integration of such verbs, for example, into the CAUSE-MOVE construction (§4.2).

meaning of the verb) and is an argument role provided by the construction. Thus in the UV2 construction in (3c), repeated here as (13a), the new undergoer subject *a gadu* 'mountain' is not a participant role of *qalup* 'hunt', a fact evinced by its presence as the adjunct *i tua gadu* 'on the mountain' in the AV and UV1 constructions in (3a) and (3b). And it is this—the introduction of the undergoer argument by the construction—which justifies the analysis of the UV2 and UV3 constructions as applicative-like variants on the undergoer voice construction rather than as voices in their own right.

(13) a. *ku=qalup-an a gadu tua vavuy*
GEN:1S = hunt-UV2 **NOM** mountain **OBL** pig
'I hunt boar on the mountain.' (Ferrell 1982: 31)

b.

Verb:		*qalup* 'hunt'	⟨	hunter	prey		⟩
Cx:	Sem	UV2	⟨	**agent**	patient	**location**	⟩
	Syn	**VERB**-*an*		**GEN**	**OBL**	**NOM**	

Another salient fact about the UV2 construction in (13a) is that the patient argument, which in the UV1 construction in (3b) is the subject, is retained here as an a-core (oblique) argument, i.e. it is treated in the same way as it is treated by the AV construction in (3a) and (10). This means that the UV2 construction in (13a) is an extended transitive construction (Dixon 1994: 120–123) parallel to its intransitive counterpart.

The existence of the extended intransitive and extended transitive constructions in Philippine-type languages seems to have received remarkably little attention in the literature. Reid and Liao (2004: 441–442) recognise extended intransitive constructions in Philippine languages with structures parallel to the AV construction here. They call them 'double-complement' intransitive constructions. They also speak of ' three-complement' transitive constructions, but their single example is of the verb 'give', the ditransitive prototype which occurs in any language which has ditransitives (Reid and Liao 2004: 445–446).

The syntax of the UV3 construction is the same as the UV2 construction, insofar as a new undergoer subject argument is provided by the construction. In the UV3 construction in (3d), repeated here as (14a), the new undergoer subject *a vuLuq* 'spear' is not a participant role of *qalup* 'hunt'. It is absent from (3a) and (3b).

(14) a. *ku=si-qalup a vuLuq tua vavuy*
GEN:1S = UV3-hunt **NOM** spear **OBL** pig
'I hunt boar with a spear.' (Ferrell 1982: 31)

b.

Verb:		*qalup* 'hunt'	⟨	hunter	prey		⟩
Cx:	Sem	UV3	⟨	**agent**	patient	**instrument**	⟩
	Syn	*si*-**VERB**		**GEN**	**OBL**	**NOM**	

The difference between the Paiwan UV2 and UV3 constructions, of course, lies in the range of semantic roles that they encode as subject. In UV2 we typically find location (13), source and time. In UV3 the subject may be instrument (14a, 15a), beneficiary (15b, 15c), reason (15d), or theme (28d) ((Chang 2006: 72–75)

(15) a. *s<in>i-tekeL ni zepul a icu a kupu ta za zalum*
<PERF> UV3-drink **GEN**:PS Zepul **NOM** this LIGATURE cup **OBL** that water
'Zepul drank that water with this cup.' (Chang 2006: 72, Santi)

b. *s<in>i-aLap ni zepul ti lavakaw ta za paysu*
<PERF> UV3-take **GEN**:PS Zepul **NOM**:PS Lavakaw **OBL** that money
'Zepul took that money for Lavakaw.' (Chang 2006: 73, Santi)

c. *s<in>i-teveLa ni palang ti kalalu tua s<in>i-kivada? ni cemedas*
< PERF > UV3-answer **GEN**:PS Palang **NOM**:PS Kalalu **OBL** < PERF > UV3-ask GEN:PS Cemedas
'Palang answered Cemedas' question on behalf of Kalalu.' (Chang 2006: 73, Saichia)

d. *s<in>i-kan ni zepul ta ci?aw a za vengeLay nimadu*
< PERF > UV3-eat **GEN**:PS Zepul **OBL** fish **NOM** that pregnancy GEN:3S
'Zepul ate fish because of her pregnancy.' (or: 'Her pregnancy was why Zepul ate fish.') (Chang 2006: 73, Santi)

The examples in (15) raise an issue for the constructional approach which I shall not attempt to handle here. (Goldberg 1995: 75–77) and Croft (2003) agree that instances of the same morphosyntax but different constructional meanings, such as those represented by (15), need to be treated as different constructions. Whilst (15a) reflects the analysis in (14b), analyses of (15b), (15c) and (15d) would require that **instrument** in (14b) be replaced respectively by **recipient-beneficiary**, **beneficiary** and **reason**. Goldberg and Croft disagree about how the relationships among these constructions should be described. For Goldberg, they would be versions of a polysemous UV3 construction. For Croft, they would be different constructions which are all part of a Paiwan speaker's knowledge, but generalisations across them would vary from speaker to speaker, with the likelihood that more frequently used versions would be cognitively autonomous.

Paiwan has one other construction with UV2 verbs that I have not considered so far. This is the PARTIAL EFFECT construction illustrated in (16), which has only *two* core arguments, like the plain transitive (UV1) construction in (9), but differs from it in encoding partial rather than total effect. Although I continue to gloss the suffix *-an* as -UV2, this is clearly not the same construction as the UV2 extended transitive construction in (13a) with its added c-core argument. I have labelled the argument role of the subject as the 'affected entity', as it is inappropriate to equate it with either the patient or the location of the constructions just mentioned.

(16) a. *k<in>an-an ni zepul a za ?avay*
< PERF > eat-UV2 **GEN**:PS Zepul **NOM** that rice.cake
'Zepul ate from the ricecakes.' (Chang 2006: 73, Santi)

b.

Verb:		*kan* 'eat'	⟨	eater	food ⟩
Cx:	Sem	PARTIAL EFFECT	⟨	**agent**	**affected.entity** ⟩
	Syn	**VERB**-*an*		**GEN**	**NOM**

It has often been observed in the literature that some verbs have 'deficient' voice paradigms. In constructional terms, this means that some bivalent verbs do not occur with all the relevant constructions. The reasons for this are probably a mixture of semantically motivated and chance-based lexicalisations. One pattern that occurs is that the UV1 construction is replaced by the PARTIAL EFFECT construction, and, since the latter employs the VERB-*an* form, there is no three-argument UV2 construction. Thus we find a pattern like that in (17).

(17) a. *djakadjak=aken tua vatu*
< AV > kick = **NOM**:1S **OBL** dog
'I am kicking the dog.'

b. *ku=djakadjak-an a vatu*
GEN:1S = kick-UV2 **NOM** dog
'I am kicking the dog.'

c. *ku=si-djakadjak a ku=kuLa*
GEN:1s = UV3-kick **NOM** GEN:1s = foot
'I am kicking with my foot.' (Ferrell 1982: 35)

The constructions encountered in Paiwan are summarised in Table 1. By the benchmark of Goldberg (1995) this is very coarse-grained classification, as it neglects differences in argument semantics, treating agent and patient as very broad categories and making no attempt to distinguish the arguments embraced by *added argument*.

TABLE 1: Paiwan constructions with two-participant verbs

construction	verb-form	agent	patient	*added argument*	examples
AV:	<*em*>VERB	**NOM**	OBL		10,17a
UV1:	VERB-*en*	GEN	**NOM**		9
UV2:	VERB-*an*	GEN	OBL	**NOM**	13a
UV3:	*si*-VERB	GEN	OBL	**NOM**	14a, 15, 17c
PARTIAL EFFECT:	VERB-*an*	GEN	**NOM**		16, 17b

4.1.2 Puyuma (south-eastern Taiwan)

The Puyuma constructions illustrated in (18) are identical to the corresponding Paiwan AV, UV1, UV2 and UV3 constructions summarised in Table 1, with two superficial differences.[17] First, the UV affixes are not cognate with the basic UV affixes of most Formosan (and Philippine-type) languages, but with their 'projective' counterparts. Second, there is no distinction between genitive and oblique full NPs in Puyuma: both are marked oblique. However, an oblique actor NP is coreferenced on the verb by an obligatory *genitive* agreement marker. In the interlinear glosses of the examples I show the genitive agreement marker in bold, and the oblique actor case-marker in bold italics, in order to distinguish it from a-core arguments marked as oblique.

(18) a. *Takaw Da paisu i isaw*
<AV> steal obl:id money **NOM**:PS Isaw
'Isaw stole money.'

b. *tu=Takaw-aw na paisu kan isaw*
GEN:1s = steal-UV1 **NOM**:D money ***OBL***:PS Isaw
'Isaw stole the money.'

c. *tu=Takaw-ay=ku Da paisu kan isaw*
GEN:3s-steal-UV2 = **NOM**:1s **OBL**:ID money ***OBL***:PS Isaw
'Isaw stole money from me.'

d. *ku=Takaw-anay i nanali Da paisu*
GEN:1s = steal-UV3 **NOM**:PS my.mother **OBL**:ID money
'I stole money for my mother.'

In (18c) and (18d) the subject arguments—respectively source and beneficiary—are supplied by the construction, and, as in Paiwan, both constructions, UV2 and UV3, accommodate a range of semantic roles. In UV2 we also of course find location (the subject argument is not manifested in 19, due to referent continuity).

[17] All Puyuma examples were supplied by Stacy Fang-ching Teng, for whose assistance I am most grateful.

(19) *tu-paTekeT-ay* *Da* *kadepu?*
GEN:3s-cause.stick-UV2 **OBL**:ID paper
'He stuck a paper on it.

In UV3 the subject may be instrument (20a), beneficiary (20b), theme (20c) or accompaniment (20d).

(20) a. *ta=LipuT-anay* *na* *bira?*
GEN:1IP = wrap-UV3 **NOM:D** leaf
'We wrapped with the leaf.'

b. *nu=ba?iT-anay=ku ?*
GEN:2s = burn-UV3 = **NOM**:1s
'Have you burned it for me?'

c. *tu=ba-bulu-an* *na* *barasa kana* *kaLi*
GEN:3 = REDUP-throw-UV3:IRR **NOM:D** stone **OBL:D** river
'He will throw the stone into the river.'

d. *ku=lukluk-anay* *na* *kinsas*
GEN:1s = wrestle-UV3 **NOM:D** policeman
'I wrestled with the policeman.'

However, Stacy Teng (pers. comm.) points out that the vast majority of verbs with UV2 affixation occur in the two-argument PARTIAL EFFECT construction rather than the three-argument UV2 construction. The pairs in (21) show that the PARTIAL EFFECT construction may occur contrastively alongside the UV1 construction. Note that *Da da?um* 'with a needle' in (21b-ii) is an adjunct, not an argument, and *kana Lutung* 'the monkey's' is a possessor.

(21) a. i. *ku=seLap-aw=la* *na* *tiLil*
GEN:1s = sweep-UV1 = PERF **NOM**:D book
'I've swept the books away.'

ii. *ku=seLap-ay* *na* *tiLil*
GEN:1s = sweep-UV2 **NOM**:D book
'I swept (dust) off the book.'

b. i. *tu=tusuk-aw* *na* *Lutung* *kan* *Walegan*
GEN:3s = pierce-UV1 **NOM** monkey ***OBL*** Walegan
'Walegan speared the monkey.'

ii. *tu=tusuk-ay* *Da* *da?um nantu* *Tanguru?* *kana* *Lutung* *kan* *Walegan*
GEN:3s = pierce-UV2 OBL:ID needle **NOM**:P:3 head OBL:D monkey ***OBL*** Walegan
Walegan
'Walegan pierced the monkey's head with a needle.'

Other examples of apparent lexicalisations with the UV2 construction are below.

(22) a. *tu=salpit-ay=ku*
GEN:3s = flog-UV2 = **NOM**:1s
'He flogged me.'

b. *tu=u-sabak-ay* *nanta* *Dekal*
GEN:3s = go-inside-UV2 **NOM**:P:1IP village
'They invaded our village.'

4.1.3 Tsou (south-central Taiwan)

The Tsou AV, UV1 and UV3 constructions in (23) replicate those in Table 1, with the general difference that a Tsou clause begins with an auxiliary which marks *inter alia* the AV/UV distinction. Certain auxiliaries require a bound nominative or genitive pronoun which coreferences the actor. The auxiliary agrees in voice with the verb, which makes the standard AV, UV1, UV2 and UV3 distinctions. Himmelmann (2005: 113) believes that Tsou does not match his criteria for a Philippine-type language (he doesn't say why), but its seems to me that it does.

Like the verbal affixes in Puyuma, the Tsou UV affixes are not cognate with the basic UV affixes of most Philippine-type languages, Instead they are cognate with their atemporal counterparts. Second, as in Puyuma, there is no distinction between genitive and oblique full NPs: both are marked as oblique, but an oblique actor NP (marked in italics in examples) is coreferenced on the auxiliary by a bound genitive pronoun.

(23) a. *mo c<m>ofu to yuskʉ ʔo mameoi*
AUX:AV:R <AV>wrap **OBL** fish **NOM** old.man
'The old man wrapped a fish.'

b. *i-si cfu-a ta mameoi ʔo yuskʉ*
AUX:UV:R-**GEN**:3S wrap-UV1 ***OBL*** old.man **NOM** fish
'The old man wrapped the fish.'

c. *i-si cfu-neni to yuskʉ ʔo hungʉ to mameoi*
AUX:UV:R-**GEN**:3S wrap-UV3 **OBL** fish **NOM** leaf ***OBL*** old.man
'The old man wrapped the fish with leaves.' (Zeitoun 2005: 284)

The data in Zeitoun (2005) also include UV2 verb-forms, but only with three-participant verbs (§4.2.3) and what appear to be lexicalised instances of the PARTIAL EFFECT construction, as in (24b).

(24) a. *mo b-aito ta yangui ʔe moʔo*
AUX:AV:R AV-see **OBL** Yangui **NOM** Mo'o
'Mo'o is looking at Yangui.'

b. *i-si ait-i ta moʔo ʔe yangui*
AUX:UV:R-**GEN**:3S see-UV2 ***OBL*** Mo'o **NOM** Yangui
'Mo'o has been looking at Yangui.' (Zeitoun 2005: 284)

4.1.4 Kimaragang (Sabah)

The Kimaragang constructions illustrated in (25) also pattern like the corresponding Paiwan AV, UV1, UV2 and UV3 constructions summarised in Table 1. The UV2 and UV3 constructions both introduce a third argument. There is one significant semantic difference: in Paiwan and Puyuma a beneficiary is introduced through a UV3 construction, but in Kimaragang through UV2 (25c).

There are also formal differences. One that is immediately obvious is that the genitive case has two functions in these constructions: it marks the actor (as in Paiwan), and it also marks a-core arguments, i.e. it has one of the functions of the Paiwan/Puyuma oblique. The Kimaragang oblique marks adjuncts, as in (26).

(25) a. *manga-lapak okuh do niyuw*
AV-split **NOM**:1S **GEN**:ID coconut
'I will split a coconut.'

b. *lapak-on kuh it niyuw*
split-UV1 **GEN**:1S **NOM**:D coconut
'I will split the coconut.'

c. *lapak-an kuh do niyuw it wugok*
split-UV2 **GEN**:1S **GEN**:ID coconut **NOM**:D pig
'I will split a coconut for the pigs.'

d. *tongoh ot panga-lapak nuh dilo? niyuw*
what NOM UV3-split **GEN**:2S **GEN**:that coconut
'What will you split those coconuts with?' (Kroeger 1996: 35, Kroeger 2005: 405)

Note that (25d) is a cleft. In Kroeger's published data, this is the usual environment of UV3.

Another difference between the Formosan languages and Kimaragang concerns the marking of the intransitive and AV constructions.In Paiwan and Puyuma, the distinction lies only in the number of arguments. In Kimaragang it also lies in the verbal morphology, as shown in (26) and (27): *manga-* in (25a) reflects underlying *m-poN-* in (27b) (and *panga-* in (25d) reflects underlying *i-poN-*).

(26) a. *m-ongoi oku [sid talob suwab]*
ITR-go **NOM**:1S OBL market tomorrow
'I will go [to the market tomorrow].' (Kroeger 2005: 415)

b.

Verb:		*ongoi* 'go'	⟨	goer	⟩
Cx:	Sem	ITR	⟨	**argument**	⟩
	Syn	****VERB**		**NOM**	

(27) a. *manga-lapak okuh do niyuw*
AV-split **NOM**:1S **GEN**:ID coconut
'I will split a coconut.'

b.

Verb:		*lapak* 'split'	⟨	splitter	thing.split	⟩
Cx:	Sem	AV	⟨	**agent**	patient	⟩
	Syn	*m-poN-***VERB**		**NOM**	**GEN**	

4.2 Verbs with three participant roles

4.2.1 Paiwan

In §4.1 I examined verbs with two participant roles. Many languages, however, have verbs with three participant roles, the prototypical example being the verb for 'give'. An example is given in (28). Note that the verb forms in (28c) and (28d-ii) are hortative and imperative respectively and that the actor genitive and undergoer (theme) subject are missing in (28b) and (28d-i) respectively.[18]

(28) a. i. *tuLu=aken tjaymadju tua kesa*
<AV>teach=**NOM**:1S **OBL**:3S **OBL** <AV>cook
'I teach him cooking.' (Chang 2006: 61, Saichia)

ii.

Verb:		*tuLu* 'teach'	⟨	teacher	student	stuff.taught	⟩
Cx:	Sem	AV-CAUSE-RECEIVE	⟨	**agent**	recipient	theme	⟩
	Syn	****VERB**		**NOM**	**OBL**	**OBL**	

[18] The actor genitive is apparently missing because of agent suppression. The undergoer subject is simply an instance of pro-drop due to referent continuity.

b. i. *p<in>avai=anga ti zepul tua za kava*
< UV1:PERF > give = EMPH **NOM**:PS Zepul **OBL** that clothes
'(Someone) has given Zepul those clothes.' (Chang 2006: 72, Santi)

ii.

Verb:		*pavai* 'give'	⟨	giver	receiver	gift ⟩
Cx:	Sem	UV1-CAUSE-RECEIVE	⟨	**agent**	**recipient**	theme ⟩
	Syn	**VERB**-*en*		**GEN**	**NOM**	**OBL**

c. i. *tja=pavay-ai ti sa kaDui tua djamai*
GEN:1IP = give-UV2:HORTATIVE **NOM**:PS RESPECT Kadui **OBL** vegetables
'Let's give Kadui some vegetables!' (Egli 2002: 462)

ii.

Verb:		*pavai* 'give'	⟨	giver	receiver	gift ⟩
Cx:	Sem	UV2-CAUSE-RECEIVE	⟨	**agent**	**recipient**	theme ⟩
	Syn	**VERB**-*an*		**GEN**	**NOM**	**OBL**

d. i. *[kana ku=nema anga, kana] ku=si-pavai tjanusun*
if GEN:1S = what EMPH then **GEN**:1S = UV3-give **OBL**:2S
'[If (it) was mine, then] I would give it to you.' (Chang 2006: 289, Saichia)

ii. *pavay-an a paisu tjai tjama*
give-UV3:IMPER **NOM** money **OBL**:PS father
'Give the money to father!' (Egli 2002: 462)

iii.

Verb:		*pavai* 'give'	⟨	giver	receiver	gift ⟩
Cx:	Sem	UV3-CAUSE-RECEIVE	⟨	**agent**	recipient	**theme** ⟩
	Syn	*si*-**VERB**		**GEN**	**OBL**	**NOM**

With these three-participant verbs, each participant role is fused with an argument role. The AV construction never has more than one c-core argument, the actor subject (cf 10), so in (28a) both the recipient and the theme are fused with obliques, i.e. there are *two* a-core arguments. The UV1 construction has two c-core arguments, the undergoer subject and actor genitive (cf 9), so in (28b) the recipient is the undergoer and the theme is fused with an oblique as an a-core argument. The recipient is thus treated in the same way as the patient, as a primary object in the terminology of Dryer (1986).

The UV2 and UV3 constructions have three arguments in any case (cf 14b), two c-core and one a-core. In UV2 in (28c) fusion follows the same pattern as in UV1 in (28b). However, whereas the recipient is treated as as if it were patient in UV1, in UV2 it is treated like a location (I do not know if this encodes a difference in meaning, perhaps in the affectedness of the recipient). In (28d) the theme now becomes the undergoer and the recipient is an a-core argument.

The underlying principle for fusion in UV constructions is not difficult to see. Subject choice is determined by the voice-marking, the agent is always genitive, and any third participant is assigned to oblique. The difference between the UV2 in (13b) and the UV2 in (28c) and between the UV3 in (14b) and the UV3 in (28d) is that the subject in (13b) and (14b) is supplied by the construction, whereas in (28c) and (28d) it is supplied by the three-participant verb. These constructions are summarised in Table 2.

4.2.2 Puyuma

Three-participant CAUSE-RECEIVE verbs in Puyuma behave in the same way as in Paiwan.

(29) *tu-beray-ay Da ruma? kan walegan i pilay*
GEN:3S = give-UV2 **OBL**:ID house ***OBL***:PS Walegan **NOM**:PS Pilay

Table 2: Paiwan constructions with three-participant CAUSE-RECEIVE verbs

construction	verb-form	agent	recipient	theme	examples
AV:	<*em*>VERB	**NOM**	OBL	OBL	28a
UV1:	VERB-*en*	GEN	**NOM**	OBL	28b
UV2:	VERB-*an*	GEN	**NOM**	OBL	28c
UV3:	*si*-VERB	GEN	OBL	**NOM**	28d

'Walegan gave Pilay a house.'

Huang and Huang (2006) show for Tsou that three-role constructions allow more than one permutation in argument linking patterns. This is not surprising, since, logically, three-role constructions allow more argument permutations than two-role constructions, but they have not been explicitly described before. Puyuma also displays a three-role construction with a different argument linking pattern from the CAUSE-RECEIVE construction in (28). This is the CAUSE-MOVE construction, illustrated in (30).

(30) a. i. *ku=saLeTag-aw na enay i babuLu?*
GEN:1S = pour.out-UV1 **NOM**:D water **LOC** yard
'I poured out the water in the yard.'

ii.

Verb:		*saLeTag* 'pour out'	⟨ pourer	poured	poured.place ⟩
Cx:	Sem	UV1-CAUSE-MOVE	⟨ **agent**	**theme**	goal ⟩
	Syn	**VERB**-*aw*	**GEN**	**NOM**	**LOC**

b. i. *ku=saLeTag-ay Da enay nu=Tanguru?*
GEN:1S = pour.out-UV2 **OBL**:ID water **NOM**:P:2S = head
'I poured some water on your head.'

ii.

Verb:		*saLeTag* 'pour out'	⟨ pourer	poured	poured.place ⟩
Cx:	Sem	UV2-CAUSE-MOVE	⟨ **agent**	theme	**goal** ⟩
	Syn	**VERB**-*aw*	**GEN**	**OBL**	**NOM**

In both the UV1 and UV2 variants of the CAUSE-RECEIVE construction, the subject is the recipient. In the UV1-CAUSE-MOVE construction the subject is the theme, in the UV2-CAUSE-MOVE construction it is the recipient. Examples of this construction are not plentiful in the data, but (31) confirms the linking in the UV1 variant.

(31) *tu=p-u-sabak-aw a tiDul kana paTungTungan*
GEN:3 = CAUSE-MOVE-inside-UV1 **NOM**:ID wasp **OBL**:D drum
'He put a wasp into the drum.'

I assume that this set of constructions also occurs in Paiwan, but the data are insufficient to confirm this.

4.2.3 Tsou

Tsou verbs in the CAUSE-RECEIVE construction behave somewhat as in Paiwan, but the UV1 variant does not occur. Diachronically, this is perhaps an outcome of the fact that UV1 and UV2 verbs had the same argument linking (cf Table 2).[19]

[19] I wish to thank Huei-ju Huang for providing me with CAUSE-RECEIVE data sets for Tsou.

(32) a. *mi-ta* *maʔcohio pasunaeno to* *ʔo-ʔoko* *ʔe* *ino*
AUX:AV:R-**NOM**:3S AV:teach sing.song **OBL** REDUP-child **NOM** mother
'Mother taught children to sing.'

b. *os-ʔo* *paʔcohiv-i to* *ʔaʔausna ne* *noanaʔo ʔe* *ʔoko*
AUX:UV:R-**GEN**:1S teach-UV2 **OBL** matter OBL the.past **NOM** child
'I taught the child things of the past.'

c. *os-ʔo* *paʔcohiv-neni ta* *ʔo-ʔoko* *ʔo* *la-ʔo*
AUX:UV:R-**GEN**:1S teach-UV3 **OBL** REDUP-child **NOM** AUX:HAB-GEN:1S
co-cohivi *ne noanaʔo*
REDUP-know-UV2 the past
'I taught children what I know of the past.' (Huei-ju Huang, pers. comm.)

As I noted in §4.1.3, with two-participant verbs UV2 seems to occur only in the PARTIAL EFFECT construction. With three-participant verbs, however, its use is more complex. In the CAUSE-RECEIVE construction in (32) its use is semantically similar to the PARTIAL EFFECT construction: its subject is the recipient (who in this instance is partially affected by the receipt of knowledge), and there is no UV1 with which it might contrast. In the CAUSE-MOVE construction, however, both UV1 and UV2 occur. With UV1 the subject is the theme, with UV2 it is the location, as the examples in (33) show.

(33) a. *mo* *m-osi ta* *pangka to* *emi* *'o* *amo*
AUX:AV:R AV-put **OBL** table **OBL** wine **NOM** father
'Father put some wine on the table.'

b. *i-si* *si-a* *ta* *pangka to* *amo* *'o* *emi*
AUX:UV:R-**GEN**:3S put-UV1 **OBL** table ***OBL*** father **NOM** wine
'Father put the wine on the table.'

c. *i-si* *si-i* *to* *emi to* *amo* *'e* *pangka*
AUX:UV:R-**GEN**:3S put-UV2 **OBL** wine ***OBL*** father **NOM** table
'Father put the wine on the table. (Zeitoun 2005: 266)

Tsou has a second 'put' verb, *teaph-*, which behaves just like *si-* (Zeitoun 2005: 284). Its occurrence in a UV3-CAUSE-MOVE construction is shown in (34). The subject is the beneficiary. This has the interesting effect that the construction adds a *fourth* argument to a three-participant verb.

(34) *i-si* *teaph-neni to* *tacfmf to* *ino* *'e* *oko*
AUX:UV:R-**GEN**:3S put-UV3 **OBL** banana **OBL** mother **NOM** child
'Mother put bananas (in a cradle) for the child.'. (Zeitoun 2005: 284)

4.2.4 Kimaragang

The three-participant verb in (35) is *suwang* 'fill'.[20] In (35a) and (35b) 'basket' is the recipient (or goal?), 'fish' or 'corn' the theme. In (35c) the UV3 verb occurs in a relative clause, and the theme subject is relativised, the agent suppressed. There is apparently no UV1 form, a fact again perhaps associated with the observation that UV1 and UV2 verbs have the same argument pattern in at least some other Philippine-type languages (Table 2). The morphology and constructions of the sentences in (35) match those in (25) in the ways that we would expect: in comparison with the sentences in (25), those in (35) display an extra a-core argument in AV, and in the UV constructions all three arguments are fused with verbal participants.

[20] Kroeger (1998) also provides a less complete but parallel set of examples with 'give'.

TABLE 3: Tsou constructions with three-participant verbs

CAUSE-RECEIVE	verb-form	agent	recipient	theme		examples
AV:	<*m*>VERB	**NOM**	OBL	OBL		32a
UV2:	VERB-*i*	GEN	**NOM**	OBL		32b
UV3:	VERB-*(n)eni*	GEN	OBL	**NOM**		32c
CAUSE-MOVE	verb-form	agent	goal	theme	beneficiary	examples
AV:	<*m*>VERB	**NOM**	OBL	OBL		33a
UV1:	VERB-*a*	GEN	OBL	**NOM**		33b
UV2:	VERB-*i*	GEN	**NOM**	OBL		33c
UV3:	VERB-*(n)eni*	GEN	OBL	OBL	**NOM**	34

(35) a. *monuwang okuh do pata'an do sada*
AV:TR:enter **NOM**:1S **GEN**:ID basket **GEN**:ID fish
'I will fill a basket with fish.'

b. *s<in>uwang-an dialo dot togilai ilo' bakul yoh*
<PERF>enter-UV2 **GEN**:3S **GEN** corn **NOM**:that basket P:3S
'He filled up his basket with corn.'

c. *…aso noh weeg dot ponuwang do botung*
not.exist already water REL UV3:enter **GEN** rice.field
'…there is no water to fill the ricefields with.' (Kroeger 1998)

A three-participant verb may also fuse with a second set of constructions, illustrated in (36). In this set the default transitive prefix *poN-* is replaced by a second transitive prefix *po-*, whose use is apparently limited to three-participant verbs. Kroeger (2005: 419–422) says that the difference between the two sets is one of affectedness. With the *poN-* set above, the affected participant is the recipient (the basket is filled). With the *po-* set below, the affected participant is the theme (the fish/corn/rice is moved), and the recipient or goal is relegated to oblique case in AV and UV3. This use of the oblique is unexpected, as the oblique appears to be the case of adjuncts, not of a-core arguments, in Kimaragang, but the data are insufficient to pursue this further.

(36) a. *∅-po-suwang okuh ditih sada sid pataʔan*
AV-TR-enter **NOM**:1S **GEN**:this fish **OBL** basket
'I will put this fish in the basket.'

b. *nunuh ot p<in>o-suwang-an nuh dit togilai nuh?*
what NOM <PERF>TR:enter-UV2 **GEN**:2S **GEN** corn GEN:2S
'What did you put your corn into?'

c. *i-suwang kuh inoh parai sid kadut*
UV3:enter **GEN**:1S **NOM**:that rice **OBL** sack
'I will put that rice into the sack.' (Kroeger 1998)

These constructions are summarised in Table 4.

5 Concluding thoughts

I have endeavoured to show that the voice system of a Philippine-type language is best regarded as having just two voices, actor voice and undergoer voice, with applicative-like variants within

Table 4: Kimaragang constructions with three-participant verbs

construction	verb-form	agent	recipient	theme	examples
AV:	*m-poN*-VERB	NOM	GEN	GEN	35a
UV2:	VERB-*an*	GEN	NOM	GEN	35b
UV3:	*i-poN*-VERB	GEN	GEN	NOM	35c
AV:	*po*-VERB	NOM	OBL	GEN	36a
UV2:	*po*-VERB-*an*	GEN	NOM	GEN	36b
UV3:	*i*-VERB	GEN	OBL	NOM	36c

the undergoer voice which allow a range of semantic roles to be encoded as subject. In the UV1 construction, the patient or the most patient-like argument is the subject. In UV2, the so-called 'locative voice', it is not just location, but also source and time. In UV3, the so-called 'conveyance voice' or 'instrument/beneficiary voice', it is instrument, theme or sometimes reason or accompaniment. The beneficiary is encoded as the subject of UV3 in the Formosan languages I have examined, and as the subject of UV2 in Kimaragang.

Scholars have asked whether one should really talk about 'voice' at all in Philippine-type languages, given that its morphology is so obviously derivational and not fully productive (De Guzman 1997). Under the interpretation above, this puzzle in part disappears, as no one doubts that applicativisation is derivational.

Using a constructional approach based on Goldberg (1995), I have shown that it is fruitful to differentiate between the participant roles of the verb and the argument roles of a construction, and that this allows us, among other things, to describe the oblique-marked a-core arguments that occur in both AV and UV. With a two-participant verb I found that the AV and UV1 constructions have two argument roles corresponding to the two participants, but, crucially, the UV2 and UV3 constructions have three argument roles, since the subject role is an introduced role (as listed above) not corresponding to a verbal participant.

With three-participant verbs, the UV2 and UV3 constructions get all three arguments from the verbal participants, and the AV and UV1 constructions acquire additional oblique arguments. Argument linking varies from one three-argument construction to another, and one example suggests the existence of a four-argument construction which adds an argument to a three-participant verb.

The way I have worded the previous single-sentence paragraph is a shortcut which is ultimately misleading under the constructional approach. Since the AV construction with a two-participant verb has only two arguments, and the AV construction with a three-participant verb has three, they are actually separate constructions. The same is true of the UV1 construction. However, I have not attempted to formalise this distinction here, as it brings no descriptive advantage.

One other finding emerged, namely that there are two UV2 constructions which may occur with a two-participant verb. One is the three-argument construction just mentioned. The other is the two-argument PARTIAL EFFECT construction, in which the argument configuration is the same as in the UV1 construction. Where the two latter constructions are in contrast, the construction with a UV2-affixed verb indicates that the effect on the patient is less than total.

In various languages, with various verbs, the PARTIAL EFFECT construction is lexicalised. In Puyuma and Tsou it represents the majority or only use of the UV2-affixed two-participant verb. Tsukida (2000) provides a very thorough account of verbs in *-un* and *-an* in Teruku Seediq (northern Taiwan). These suffixes are cognate with Paiwan *-en* and *-an*, and I refer to them accordingly as the UV1 and UV2 suffixes. Tsukida shows that verbs with the the UV2 suffix include (i) some which allow

a three-argument construction with a location subject; (ii) some which use UV1/UV2 for the complete-/partial-effect distinction; (iii) some which use UV1/UV2 for the future/non-future distinction. The interactions of these factors are complex, and I shall not attempt to replicate them here, but the Teruku Seediq data give an indication of possible functional extensions of the PARTIAL EFFECT construction.

The observations in this paper will, I hope, contribute to the more accurate description of Philippine-type languages. They also offer some interesting topics for comparative–historical research.

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