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Control in Matu'uwal (Mayrinax) Atayal

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Abstract. This paper examines control constructions in Matu'uwal Atayal. It presents all the possible combinations of voice in the matrix clause and the embedded clause with control constructions. The paper divides the controller-controllee space into three categories based on their argument status: intransitive actors (S), transitive actors (A), and transitive objects (O). Both actor and patient control are examined, with a hierarchy of controllers emerging: S and O can control each other but not A, while A can control any argument. Transitive embedded clauses also serve as counterexamples to the AV-only restriction hypothesis.

1. Introduction

Matu'uwal[1] Atayal is an Atayal dialect spoken in three villages in Tai'an township, Miaoli county in Taiwan: Jinshuei Village, Bagua Village, and Qing'an Village. It differs from other Atayal dialects in its conservatism with regard to case markers and linkers: whereas other Atayal dialects, such as Squliq, often drop these in favour of null marking, Matu'uwal preserves both the case marking on nouns and the linkers between verbs, making syntactic relations much more transparent. This makes it a more suitable candidate for the exploration of syntactic relations, both clause-internal and between clauses.

My main motivation for this paper was the substantial quantity of literature on Matu'uwal syntax that did not agree on the most basic premises, primarily alignment. The categorization of alignment is linked directly to the voice system of Matu'uwal, which it shares with most other Formosan languages: the most contested question has been whether Actor voice (AV) clauses are transitive.[2] An examination of possible control structures will

[1] The dialect has been known in literature as 'Mayrinax', which is an exonym given to the Matu'uwal community by the surrounding Squliq speakers. The endonym of the speech community is Matu'uwal, and the dialect is called *kaiʔ na matuʔuwal* 'Matu'uwal speech'.

[2] The abbreviations and glossing used in this paper are in line with the Leizig glossing rules. Some additional abbreviations not found in the rules are: AV — Agent/Actor Voice, PV — Patient Voice, LV — Locative Voice, IV — Instrumental Voice, BV — Benefactor Voice, LNK — linker.

hopefully lead to conclusions regarding the status of core arguments in the language, and conclusions from this investigation can be used as evidence for the question of transitivity in Matu'uwal, and through that, the analysis of case markers in the language.

My investigation will focus on the different types of control constructions in Matu'uwal, their distribution and restrictions. I will also describe the differences between control on the one hand, and raising and serial verb constructions (SVCs) on the other hand, specifically with regard to Matu'uwal. I will assume that AV in the language is intransitive, and I will test that hypothesis through a rigorous examination of all available data. I will also probe the validity of the AV-only restriction hypothesis in Matu'uwal, that is the assumption that some or all verbs embedded clauses are restricted to the AV form.

I will employ several sources for the data in this paper. My primary sources of data on control constructions in Matu'uwal are PhD dissertations by Liu (2011) and Wu (2013), which I will supplement with additional data from my own fieldwork. My main language consultant, Watan Ba'ay (male, 77 y.o.), was also the main Matu'uwal informant for both of the aforementioned theses, therefore there are no possible dialectal variations in discrepancies between the three datasets. I will also utilize sentences from Huang's 1995 grammar of Matu'uwal, but not her analysis, which did not include an investigation of control constructions in the language.

I present a short overview of the literature written on the topic in section 2. In section 3, I introduce the case markers and linkers that will occur throughout the rest of the paper. In section 4, I discuss the transitivity of AV clauses and examine Wu's (2013) arguments. I start the discussion of subordinate clauses in section 5, where I identify the different types of embedded clauses and list the criteria for their differentiation. I briefly touch upon the AV-only restriction in section 6, before talking about actor control in section 7 and patient control in section 8. I sum up my conclusions in section 9.

2. Literature review

Early works on Matu'uwal syntax assumed it to be an accusative-aligned language by default (Li, 1995; Huang, 1995). Later papers and theses explored the language's alignment with some more detail to the voice system and the transitivity of the AV. Starosta (1999) analyzed Atayal as being ergative, but this was simply in line with his assumption that languages with Austronesian alignment are ergative. Chang (2004) wrote specifically on the transitivity of AV in various Formosan languages, including Matu'uwal, in which Chang concludes that Matu'uwal AV is intransitive. Liu (2011:53) treats Matu'uwal as an accusative language due to the restricted distribution of the PV. Wu (2013:27-29) treats AV as transitive, and Matu'uwal as a split-ergative language. Other papers, such as Yu (2008), do not mention alignment at all, but cannot fully avoid making a choice in their glossing, using terms like *accusative case* with AV clauses.

The transitivity of NAV[3] clauses isn't contested in any recent papers. In fact, generally speaking, NAV clauses can only be transitive, and the vast majority of monadic predicates have to use AV.[4]

In this paper, I do not use the term 'subject' when referring to any of the core arguments in Matu'uwal, because the definition of this term is fuzzy with regard to non-accusative languages. The subject in accusative languages is usually defined as (a) the argument that receives nominative case, and (b) the more agent/actor-like argument. For non-accusative languages, these two may be different, and therefore one has to make a choice as to which of the two criteria is the more important. In past works, it has been claimed the subject in ergative languages is the ergative argument (Anderson, 1976; Dixon, 1994; Aldridge, 2004, 2007), the absolutive argument (Schwartz, 1976; Kroeger, 1993; Manning, 1994), or that the notion of subject is not applicable to languages with ergative alignment (Schachter, 1976, 1995). For this reason I employ the unambiguous terms S, A, and O, which mean the following: S is the sole core argument of an intransitive clause, A is the more agent-like argument of a transitive clause, and O is the more object-like argument of a transitive clause.

3. Case markers and linkers in Matu'uwal

Since, as stated in section 2, early works on Matu'uwal treated it as an accusative language by default, the case analyses in those papers reflect this fact (Li, 1995; Huang, 1995). I use my own nomenclature here, demonstrated in Table 1. Only three cases that are relevant to the topic of this paper are shown in the table, and it is not an attempt to present a full analysis of the case system.[5]

Table 1: Select case markers in Matu'uwal Atayal

	Genitive	Nominative	Oblique
personal	ni	i	i
specific	nke	ku	cku
non-specific	na	a	cu

The genitive case is used mainly to mark transitive A's as well as possessors. The nominative case marks intransitive S's and transitive O's. The oblique case marks some (but not all) non-core arguments. I speak more about the oblique case in section 4 and provide evidence that DPs marked by it are not core arguments. All the three cases shown here have distinct markers in three levels of specificity.

Non-actor voice as the grouping of three voices besides AV was first coined by Tsuchida (1975), called 'non-actor focus' in his thesis.

[4] There are some rare exceptions to this tendency, for example *ngaws-un* 'sharp (e.g. a knife)'.

[5] I have omitted the locative case marker *i* from the table, but it will be present in some example sentences.

In addition, the language employs a variety of linkers for subordinate clauses, including but not limited to *i, cu, mha*. In this paper I will mostly limit the scope of my discussion to constructions that utilize the linker *i*, because it is used in control constructions and some raising constructions, and only touch upon constructions with the linker *cu* when they are relevant to the discussion. For a full overview of linkers and subordination in Matu'uwal, refer to Liu (2011) and Wu (2013).

Some linkers for subordinate clauses are homophonous with some of the case markers, including *i* (linker and locative case marker) and *cu* (linker and oblique case marker), both of which are discussed in this paper. While there may possibly be diachronic reasons for this homophony, they are outside the scope of this paper, and the linkers are viewed as completely separate and different from the case markers.

4. Analysis of AV clauses in Wu 2013

Wu (2013) believes AV clauses to be transitive, but does not simply assume this, and instead provides argumentation to prove his hypothesis. I first address the points he makes and the arguments he uses, in order to evaluate his arguments and see whether they hold for the language as a whole in a systematic manner. Wu considers AV to be transitive for two reasons. First, the "accusative" case marker *cu* cannot mark certain oblique arguments, namely reason, instrument, and beneficiary, as in (1). Second, because of the way *cu*-marked arguments (or their equivalent) behave in certain complex predicate constructions with resultative attributes. I will address these two arguments in turn, starting with the first one.

(1) Wu (2013:27)[6]

ma-ʔuway	na	ulaqiʔ	i	Yumin
AV-tired	GEN	child	NOM	Yumin

'Yumin is tired because of the child'.

In (1), *cu* cannot be used in place of *na*, and Wu argues that for this reason, it is not an oblique case marker. What Wu does not mention, is the fact that apart from *na/nku*, the markers *cku/cu* and *i* can also mark oblique arguments, all with different functions.

While *na/nku* can indeed be used as an oblique marker for instruments and beneficiary/ reason, other oblique arguments, such as location, are marked differently. *Cu* can mark temporal arguments and both *cku* and *i* can mark locatives.[7] This is demonstrated in

[6] In all examples taken from other works, I use my own glossing and may change the English translation slightly to have it better reflect the original meaning of the sentence. I use the official orthography for Atayal, modified only by using the IPA symbol for the glottal stop ('ʔ') instead of the apostrophe for added visibility and clarity.

[7] Only temporal arguments pertaining to the past are marked with *cu*, while future temporal arguments

examples (2) and (3).

(2)	Nagaʔ	i	runi	cu	pilapilag
	wait.AV.IMP	LOC	here	OBL	short time
	‘Wait here for a short while’.				

(3)	m-ashahiiʔ=cu	cku	iqas	ka	imuwag
	AV-move=1SG.NOM	OBL	new	LNK	house
	‘I moved to a new house’.				

Moreover, these markers can also appear in NAV clauses with the same meanings, including extension to core (as per Dixon & Aikhenvald (2000)). The verb ‘to give’, for example, can appear in three different voices, as in (4), (5), and (6). In each of the sentences, at least one *cu/cku*-marked argument appears, including the NAV sentences, where both core argument positions are already filled — one by the genitive agent (here a clitic pronoun), and the other by the *ku*-marked nominative.

(4)	m-aiq=cu	cku	ulaqiʔ	cu	ruwas
	AV-give=1SG.NOM	OBL	child	OBL	book
	‘*I* give the child a book’.				

(5)	bayq-an=mu	cu	ruwas	ku	ulaqiʔ
	give-LV=1SG.GEN	OBL	book	NOM	child
	‘I give *the child* a book’.				

(6)	si-baiq=mu	cku	ulaqiʔ	ku	ruwas
	IV-give=1SG.GEN	OBL	child	NOM	book
	‘I give the child *the book*’.				

One might argue that the case markers *cu/cku* can have different functions, marking accusative arguments in AV clauses and oblique arguments in NAV clauses. That is not impossible, given that the genitive series *ni/nku/na* behaves in a very similar way, marking agents in NAV clauses, but only being used for oblique arguments in AV sentences. Therefore, further analysis of the transitivity of AV clauses can shed light on the whole phenomenon.

Chang (2004) investigated the transitivity of the AV in various Formosan languages, including Matu’uwal. Chang concludes that Matu’uwal AV is morphosyntactically

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are marked with *i* instead.

intransitive based on the fact that *cu/cku*-marked arguments cannot serve as controllers in *persuade*-type control constructions, and are therefore not core arguments. In order to be eligible for anaphoric reference, they must be raised to "subject" position, with the clause becoming NAV, as in (7).

(7) Huang (1995)

siwal-an	ni	Yumin	i	Limuy$_i$	i	[m-aniq	PRO$_i$	cku
allow-LV	GEN	Yumin	NOM	Limuy	LNK	AV-eat	(NOM)	OBL
qulih]								
fish								

'Yumin let Limuy eat the fish'.

I agree with Chang's (2004) assessment that *cu/cku*-marked NPs fail to act as obligatory controllers in control constructions. An attempt to construct a sentence where an oblique argument serves as a controller yields an ungrammatical sentence, as in (8).

(8)

*s<um>iwaal	i	[maniq	PRO$_i$]	i	yaya?	cu	ulaqi?$_i$
<AV>allow	LNK	AV.eat	(NOM)	NOM	mother	OBL	child

'The mother allows a child to eat'.

Wu's second reason for treating AV in Matu'uwal as transitive is that in complex predicate constructions, the resultative verb can be predicated of the *cu*-marked argument (Wu 2013:28). Wu appeals to Simpson's Law (Simpson, 1983) in saying that resultative attributes can only be predicated of objects when he analyzes sentence (9) as having a transitive matrix predicate, with *cu qiniriyang* being a core argument.

(9) Wu (2013:83)

c<um>aum	cu	[matanah	PRO$_i$]	cu	qiniriyang$_i$	i	Watan
<AV>paint	LNK	red.AV	(NOM)	OBL	wall	NOM	Watan

'Watan painted the wall red'.

However, in a later example, Wu does find that oblique arguments can serve as controllers for resultative attributes, as in (10).

(10) Wu (2013:169)

si-tuting=mu	cu	[ma-bkaʔ	PRO]	cu	buyqaʔ	ku
IV-hit=1SG.GEN	LNK	AV-broken	(NOM)	OBL	bamboo	NOM
tatuting						
hammer						

'I broke some bamboo with the hammer' (lit. 'I hit some bamboo broken with the hammer').

The predicate *mabkaʔ* is a semantically intransitive stative predicate, and cannot be used in the sense 'to break', for which a related but different verb is used (*məkaʔ*). This means that the only possible controller for the resultative predicate is *buyqaʔ*, which is an oblique argument, as Wu also acknowledges. Sentence (10) serves as a counterexample to (9), and Wu's claim that *cu/cku*-marked arguments are necessarily core arguments does not hold.

Moreover, oblique control isn't particularly rare cross-linguistically. Examples of dative control can be found in, for example, English and Italian, as seen in examples (11) and (12).

(11) John appealed to Bill [PRO to feed himself]. (Chomsky 1981:75)

(12) Il generale ha ordinato ai soldati [PRO di partire]. (Rizzi 2000:64)
'The general ordered the soldiers to leave' (lit. 'to the soldiers').

For Wu's examples, a single, unified analysis for both AV and NAV matrix clauses is in order. Both of the NPs are marked with the same case (oblique), but NPs with oblique case marking cannot serve as obligatory controllers in actor or patient control constructions. I conclude that resultative constructions constitute a case of oblique (dative) control, where the controller is not a core argument, and are very limited in scope. The controller in such constructions can only be an E, i.e. extension to core (Dixon & Aikhenvald, 2000). Crucially, these constructions use the linker *cu* and not *i*. *Cu* allows embedded clauses to be finite (Huang, 1995; Liu, 2011; Wu, 2013).

5. Control, Raising, and SVC

Before talking about specific instances of control, it is important to distinguish between instances of control, raising, and SVCs (serial verb constructions), and see how these are manifested in the language. These three types of constructions are all discussed both by Liu (2011) and by Wu (2013). Liu also identifies a separate type of construction that she calls "Raising-to-Trigger", to be discussed in section 5.3.

5.1 Serial verb constructions

Liu (2011:181) concludes that the SVC categorization of previous studies like Huang's (1995) is inappropriate to account for Matu'uwal data. The fact that the linkers are obligatory in multi-predicate constructions suggests that they are not monoclausal. Both the lack of linkers and monoclausality are important factors in identifying SVCs according to Aiknenvald and Dixon (2006: ch. 1, §2). Another argument against an SVC analysis are the two scopes of negation: both the matrix and the embedded predicate can be negated individually, or even both at the same time (Liu 2011:181-182).

Wu (2013:151) sees Motion and Posture expressions, especially in the AV, as being very similar to SVCs. He cites the conditions for SVC identification given by Chang (2010), and notes that Matu'uwal Motion and Posture expressions satisfy all but one of the conditions, namely linkerlessness. While saying that the linker *i* is a 'low linker' and does not have syntactic status, he nevertheless acknowledges that even the AV Motion and Posture expressions are not true SVCs.

With regard to SVCs, I take the same position as Liu in saying that the constructions examined here or in any previous papers do not constitute SVCs on the basis of having intervening linkers as well as the fact that they are not monoclausal. SVCs are therefore likely to be completely absent from Matu'uwal.

5.2 Control vs raising

Control is a phenomenon in which a VP complement with no overt subject is interpreted semantically as having some NP as its subject, whereas raising is a phenomenon whereby some linguistic element appears in a higher clause than is semantically appropriate (Trask 1993:62). Control and raising constructions are visually very similar even in English. Consider the following pair of sentences:

(13) Jean$_i$ is likely [t_i to leave]. (Carnie 2013:430)

(14) Jean$_i$ is reluctant [PRO$_i$ to leave]. (Carnie 2013:430)

Even though they are superficially very similar, structurally they are markedly different. One is a raising construction, where the main predicate does not assign an external theta role, but the subject of an embedded clause raises to the main clause to receive case and satisfy the EPP.[8] The other is a control construction, where the main predicate does assign an external argument, and the external theta role of the embedded predicate is assigned to a caseless PRO (Carnie 2013:437). Similarly, the sentences below have the same distinction in their objects:

[8] The Extended Projection Principle (EPP) is a requirement that clauses must have subjects (Chomsky 1982:10).

one is raised from the embedded clause to get accusative case, but gets its theta-role from the embedded verb; while the other is base-generated in the matrix clause, being theta-marked by the verb *persuade*.

(15) Jean wants Robert$_i$ [t_i to leave]. (Carnie 2013:443)

(16) Jean persuaded Robert$_i$ [PRO$_i$ to leave]. (Carnie 2013:443)

Many tests that are used to distinguish control from raising in English are not applicable to Matu'uwal, either due to differing syntactic structures, or in the case of idioms, due to insufficient language data. Here I will primarily employ theta role assignment and grammaticality as a means of formally distinguishing different types of structures. The examination of theta role assignment is the most reliable way of distinguishing control constructions from raising constructions (Carnie 2013:437).

In (17), the main predicate *sumiʔuwaʔ* 'like' assigns two theta roles, experiencer and proposition, while the embedded predicate *malahang* 'take care of' assigns the roles agent and theme. The agent of the embedded predicate is not overtly present in the sentence, but it is co-referential with the S of the matrix clause. There are two main possibilities here: that it is the trace of a raised argument, or a PRO.[9] The possibility of it being a trace can be eliminated, because that would mean that *nabakis* receives two theta roles, one from each predicate, which is explicitly prohibited by the theta criterion (Chomsky 1981:36). This leaves a co-referential PRO as the remaining candidate for the position of S in the embedded clause.

(17) Liu (2011:183)

s<um>iʔuwaʔ	ku	nabakis$_i$	i	[malahang	cku
<AV>like	NOM	old man	LNK	AV.care	OBL
ulaqi	PRO$_i$]				
child	(NOM)				

'The old man likes to take care of the child'.

This contrasts with (18) and (19), which show examples of raising. In (18), both control and raising are present. The genitive agent controls the PRO in S position in the embedded clause, as is evident from theta role assignment: *anacpangun* 'purposefully' only assigns one theta role, that of agent, while *muhug* assigns two, agent and theme. This mimics the control construction in (17), discussed above. What's different is that the DP *paih*, having

[9] Other possibilities, like *pro*, are excluded because an overt S that is also co-referential with *nabakis* cannot be present in the embedded clause.

been assigned its theta role by the embedded predicate, moves to the matrix clause to receive case and perhaps also to satisfy the obligatory O requirement.[10]

Similar behaviour is found in (19), where the predicate *balaiq* assigns two theta roles, experiencer and proposition, but clitic pronoun *su* 'you' is raised from the embedded clause to attach to the matrix predicate.[11] Note that it is not the case that clitic pronouns obligatorily move to attach to the matrix verb in all instances. The empty patient in the embedded clause is understood to be co-referential with the agent of the matrix clause (the first person pronoun). At this point it is not yet clear whether this is a case of ellipsis or control.

(18)	anacpang-un=niya$_i$	i	[muhug	t_j	PRO$_i$]	ku	paih$_j$
	purposefully-pv=3sg.gen	LNK	AV.break		(NOM)	NOM	hoe
	'He deliberately broke the hoe'.						

(19)	balaiq=misu$_i$	i	[g<um>iba$\textit{ʔ}$	t_i]
	like=1sg.gen+2sg.nom	LNK	<AV>hug	
	'I like being hugged by you'.			

In such raising constructions movement to the matrix clause is obligatory, as Liu notes with examples (20) and (21). This is an example of a sentence with control, where the PRO in the embedded clause is co-referential with the the A of the matrix clause. The DP *ruwas* is raised from the embedded clause (whose verb assigns its theta role) to the matrix clause. For it to remain in situ is ungrammatical, as shown in (21).

(20) Liu (2011:202)

ungi$\textit{ʔ}$-an	nku	ulaqi$\textit{ʔ}$*i*	ku	ruwas$_j$	i	[mitaal
forget-LV	GEN	child	NOM	book	LNK	AV.look
t_j	PRO$_i$]					
	(NOM)					

'The child forgot to read the book'.

[10] This phenomenon in Matu'uwal is analogous to EPP (the Extended Projection Principle) in languages like English. Since EPP is a hypothesis about subjects, it may not be applicable to non-accusatively aligned languages in the same formulation that is used for languages like English. In Matu'uwal, there appears to be a condition that requires a nominative O to appear in transitive clauses, but may not be a fully obligatory requirement, as some predicates do allow an O to be absent from NAV clauses, for example *snuwaun=mu cu [ma$\textit{ʔ}$uwah=su]* 'I believe that you will come' (Liu 2011:207), which does not have a nominative argument in the main clause.

[11] A 1sg.gen clitic pronoun together with a 2sg.nom clitic have the special form *misu*. This is completely automatic and does not reflect the syntactic relations in the clause, as in (19), where the second person pronoun is raised from an embedded clause.

(21) Liu (2011:202)

*ungiʔ-an	nku	ulaqiʔ*i*	i	[mitaal	cu	ruwas	PRO]
forget-LV	GEN	child	LNK	AV.look	OBL	book	(NOM)

'The child forgot to read a book'.

5.3 "Raising-to-Trigger" and optional raising

Liu (2011) identifies a separate type of construction, distinct from raising and control, that she calls "Raising-to-Trigger" ("RtoT").[12] It is characterized by non-obligatory movement from the embedded clause into the main clause with certain verbs that allow the main clause to lack a nominative argument (O) in NAV constructions. (22) is a grammatical sentence with no raising, and (23) shows the same sentence with raising.

(22) Huang (1995:220)

baq-un=mi	cu	[iqaat	ma-ʔuwah	ku	ulaqiʔ
know-PV=1SG.GEN	OBL	NEG	AV.RED-come	NOM	child

i	casan
LOC	tomorrow

'I know that the child will not come tomorrow'.

(23) Huang (1995:221)

baq-un=mu	ku	ulaqiʔ*i*	cu	[iqaat	ma-ʔuwah	
know-PV=1SG.GEN	NOM	child	OBL	NEG	AV.RED-come	

ti	i	casan
	LOC	tomorrow

'I know that the child will not come tomorrow'.

Liu (2011:194-196) states that this type of construction is different from raising in generative grammar, and the raising element can only raise to nominative ("trigger") position. For example, trying to raise the DP *ulaqi?* 'child' from the embedded clause in (24) into a non-core argument position results in an ungrammatical sentence, as shown in (25).

[12] This name stems from her classification of Matu'uwal case markers. The case that I call nominative here is named "trigger" in her dissertation (Liu 2011:53).

(24) Liu (2011:197)

ʔ<um>ungiʔ	ku	nabakis	cu	[m<in>itaal	cu	ruwas
<AV>forget	NOM	old man	LNK	<PFV>AV.look	OBL	book
ku	ulaqiʔ]					

'The old man forgets that the child has read a book'.

(25) Liu (2011:197)

*ʔ<um>ungiʔ	cu	ulaqiʔ$_i$	ku	nabakis	cu	[m<in>itaal
<AV>forget	OBL	child	NOM	old man	LNK	<PFV>AV.look
cu	ruwas	t_i]				
OBL	book					

'The old man forgets that the child has read a book'.

Liu (2011:190) discusses instances of patient control where the matrix clause is AV, that is, where the controller is oblique ('accusative' in Liu's analysis). For instance, in (26) the oblique argument *buwaing* appears to be the controller for the nominative S in the embedded clause.

(26) Liu (2011:190)

maʔicug=cu	cu	buwaing	i	k<um>at	cu
AV.fear=1SG.NOM	OBL	wasp	LNK	<AV>sting	OBL
cuquliq					
person					

'I'm afraid that a wasp might sting someone'.

While superficially similar to a control construction, (26) differs from control constructions discussed in §5.2. The difference is observable from the theta grid of the verb *maʔicug* 'to fear, be afraid', which assigns one experiencer role, and one theme or proposition (but not both). In (26), the verb assigns a theta role to the proposition 'a wasp might sting someone', meaning that the noun *buwaing* 'wasp' does not receive its theta role from the matrix verb, but from the embedded verb. This means that it is later raised to the matrix clause.[13] Under this hypothesis, a clause without raising should also be grammatical, which is indeed the case, as demonstrated in (27).

In (27), the embedded clause is unchanged, with the S *buwaing* remaining in situ. (28) shows the effect of raising here, with a trace remaining in the embedded clause. The raised *buwaing* cannot receive case from the embedded predicate, and cannot be assigned structural

[13] Note that the subordinate clause in (26) is not a relative clause. Relative clauses modifying nouns are marked with *ka* in Matu'uwal, while other types of dependent clauses are marked by other linkers, such as *i* or *cu*. For a full analysis of dependent clause linkers in Matu'uwal see Wu (2013).

case by the matrix verb (because the only available slot is taken up by the first person clitic pronoun). It receives oblique case by default, because all DPs appearing in the SR in Matu'uwal have to have a case marker.

(27)

maʔicug=ci	[k<um>at	cu	cuquliq	ku	buwaing]
AV.fear=1SG.NOM+LNK	<AV>sting	OBL	person	NOM	wasp

'I'm afraid that a wasp might sting someone'.

(28) Liu (2011:190)

maʔicug=cu	cu	buwaing$_i$	i	[k<um>at	cu
AV.fear=1SG.NOM	OBL	wasp	LNK	<AV>sting	OBL
cuquliq t_i]					
person					

'I'm afraid that a wasp might sting someone'.

The sentence (28) can be compared with (25), in that they have a very similar structure, but (28) is grammatical, while (25) is not. One possibility may be that the linkers *cu* and *i* have different complements, and DPs can't be raised out of some *cu*-marked dependent clauses.[14] Another possibility is that the possibility of this kind of raising is lexically determined for each predicate, being limited to a select few. I will not go into the precise nature of this kind of raising and its constraints in this paper, and further research is necessary to explore this difference.

The raising in (28) is similar to the "RtoT" described by Liu (2011) in that both are non-obligatory, but differs from it in that the raised DP does not receive nominative case (and thus cannot be called "Raising-to-Trigger" by definition, because Liu's 'trigger' corresponds to the nominative case in my analysis). I will tentatively group these two under a single denomination 'Optional Raising'.

I have demonstrated that (28) is not an example of control, based on semantic role assignment as well as the fact that this sentence can be restructured to include no raising, as demonstrated in (27). With this sentence shown to exhibit optional raising, there are no examples where an oblique-marked DP serves as an obligatory controller in a patient control construction.[15]

6. AV-only restriction

Many previous studies have posited a restriction on all or some embedded clauses in many Formosan languages, which states that the embedded predicate can only be used in the

[14] This is definitely not true for all *cu*-marked clauses, as raising out of one happens in (23).

[15] Oblique control constructions, discussed in section 4, seem to be of a different type, utilizing the linker *cu* and being limited to resultative constructions in the data so far.

AV form and with no TAM marking (Huang, 1997; Tang, 1999; Chang, 2006, 2009; Tsai & Wu, 2012). This is known as the AV-only restriction.

Wu (2013:77) discusses the AV-only restriction at length, saying: "In contrast to matrix verbs, the second verbs in '*i*'-construction[s] are rather restricted in morphosyntactic marking. The '*i*'-complement is anaphoric and tenseless. An overt actor or subject is not allowed… The embedded verbs must remain non-finite in their intransitive (AV) forms. Any TAM/NAV marking is prohibited". Tsai and Wu provide examples of the AV-only restriction in resultative construals (29) as well as for adverbial predicates (30):

(29) Tsai (2012:163)

sanamhuqil-un	i	[t<um>uting/*tuting-un]	ku	bawwak
kill-PV	LNK	<AV>beat / beat-PV	NOM	pig

'The pig is beaten to death'.

(30) Tsai (2012:163)

pa-paqas-un=taʔ	i	[magal/*agal-un]	ku	siyatuʔ	ka
RED-happy-PV=1P.GEN	LNK	AV.take / take-PV	NOM	clothes	RL
hani					
DEM					

'We will get these clothes happily'.

In contrast, Liu does not discuss the AV-only restriction, and in fact provides quite a few examples that go against it, such as (31):

(31) Liu (2011:183)

s<um>iʔuwaʔ	ku	nabakis$_i$	i	[kəlahang-an	nku	ulaqiʔ
<AV>like	NOM	old man	LNK	care-LV	GEN	child
PRO$_i$						
(NOM)						

'The old man likes to be taken care of by the child'.

The reason why sentences like (29) and (30) are ungrammatical is not due to the fact that NAV is disallowed completely in embedded clauses, but most likely due to voice restrictions in embedded clauses on certain lexical items. As will be shown in sections 7 and 8, NAV predicates can occur in a variety of embedded clauses.

7. Actor Control

Liu (2011) identifies two types of control in her Matu'uwal data: actor and patient control. Actor control is defined as a construction in which the actor of the matrix clause

controls the reference of the missing nominative argument in the complement clause.[16] Liu examines the relationship of the controller and the controllee in different sentence structures with (32) and (33). The former is a standard construction with AV in both the matrix and the complement clause, while the latter has an NAV verb in its complement clause.

(32) Liu (2011:183)

s<um>iʔuwaʔ	ku	nabakis$_i$	i	[malahang	cku	ulaqiʔ
<AV>like	NOM	old man	LNK	AV.care	OBL	child
PRO$_i$]						
(NOM)						

'The old man likes to take care of the child'.

(33) Liu (2011:183)

s<um>iʔuwaʔ	ku	nabakis$_i$	i	[kəlahang-an	nku	ulaqiʔ
<AV>like	NOM	old man	LNK	care-LV	GEN	child
PRO$_i$]						
(NOM)						

'The old man likes to be taken care of by the child'.

According to the AV-only restriction hypothesis, sentences such as (33) should not be grammatical, since the embedded verb is an NAV form. The AV-only restriction postulates that embedded verbs must remain non-finite and in their intransitive (AV) forms (Wu 2013:77). The above examples demonstrate that such a restriction is absent from Matu'uwal, at least in its strong interpretation: NAV verbs can indeed be used in complement clauses, as per (33).

Additionally, Liu discusses sentences where the matrix verb is NAV, as in 34 and 35. Both are ungrammatical according to her, and she concludes that actor control with NAV in the matrix clause is disallowed.

(34) Liu (2011:183)

*səʔuwaʔ-an	nku	nabakis$_i$	i	[malahang	PRO*i*	cku
like-LV	GEN	old man	LNK	AV.care	(NOM)	OBL
ulaqiʔ]						
child						

'The old man likes to take care of the child'.

[16] Note that what I refer to as nominative case, Liu calls 'trigger'. For her analysis of Matu'uwal case markers, see Liu (2011:53).

(35) Liu (2011:183)

*səʔuwaʔ-an	nku	nabakis$_i$	i	[kəlahang-an	nku	ulaqiʔ
like-LV	GEN	old man	LNK	care-LV	GEN	child
PRO$_i$]						
(NOM)						

'The old man likes to be taken care of by the child'.

Liu does acknowledge that 34 can be made grammatical by raising the embedded patient to the matrix clause, as in 36. Nevertheless, in her actor control table, she marks NAV-AV control as ungrammatical (Liu 2011:183).

(36) Liu (2011:205)

səʔuwaʔ-an	nku	nabakis$_i$	ku	ulaqiʔ	i	[malahang	t_i]
like-LV	GEN	old man	NOM	child	LNK	AV.care	

Intended for: 'The old man likes to take care of the child'.

According to my own fieldwork with the same speaker that Liu consulted for her dissertation, sentence 36, while grammatical, does not have the reading that Liu gives it, and instead means 'the old man likes to be taken care of by the child', meaning that this is not an example of actor control. Instead, the agent of the embedded clause *ulaqiʔ* raises to the matrix clause to receive case.

Actor control in NAV-AV type sentences where the genitive A controls the S of the embedded clause is still possible, and rather well-attested. Wu's dissertation lists many different types of predicates that allow such constructions, e.g. adverbial, aspectual, attempt, etc. (Wu 2013:67). (37) and (38) provide examples of adverbial and attempt constructions, respectively.

(37)

anacpang-un=niya$_i$	i	[muhug	t_j	PRO$_i$]	ku	paih$_j$
deliberately-PV=3SG.GEN	LNK	AV.break		(NOM)	NOM	hoe

'He deliberately broke the hoe'.

(38) Wu (2013:75)

sagʔaring-un=mi$_i$[17]	[mənubuwag	t_j	PRO$_i$]	ku	quway$_j$
start-PV=1SG.GEN+LNK	AV.drink		(NOM)	NOM	wine

'I started drinking the wine'.

[17] When the 2sg.gen clitic pronoun *mu* is followed by *i*, whether a linker or a case marker, the two are merged into *mi*. Similarly, *i* also merges with the clitics *ta* (1pl.incl) and *cu* (1sg.nom) to give *ti* and *ci*, respectively.

So far I have not found actor control constructions where the S of an AV matrix clause unequivocally controls an A in an embedded clause, like in (39), an example from Tagalog:

(39) Tagalog (Aldridge 2012:335)

Nagba-balak	si	Maria-ng	[PRO	tulung-an	si	Pedro]
INTR.PROG-plan	ABS	Maria-LNK	(ERG)	help-APP	ABS	Pedro

'Maria is planning to help Pedro'.

Liu states that actor control constructions of the type NAV-NAV are ungrammatical, but I was able to elicit a sentence that exhibits such a construction. In (40), a genitive agent controls a nominative patient in the embedded clause.

(40) balaiq=mi$_i$ [giba?-un=su PRO$_i$]
like.PV=1SG.GEN+LNK
'I like being hugged by you'.

Apropos actor control, Liu only discusses constructions where the controllee is nominative ('trigger' in Liu's terminology), unnecessarily limiting her inquiry. Matu'uwal allows the controllee in NAV-NAV actor control constructions to also be genitive, as demonstrated in (41). In this sentence, the genitive first person pronoun is the controller (the second person pronoun is raised from the embedded clause).

(41) balaiq=mi$_i$su$_j$ i [giba?-un PRO$_i$ t_j]
like.PV=1SE.GEN+2SG.NOM LNK hug-PV (NOM)
'I like hugging you'.

Matu'uwal actor control has many possible manifestations. A nominative S in an AV matrix clause can control an S/O (nominative) PRO, and a genitive A can be the controller of S (in AV complement clauses), O, or A (in NAV complement clauses). Table 2 summarizes the findings.

Table 2: Actor control in Matu'uwal

Matrix predicate	Complement predicate	Controller	Controllee	Example
AV	AV	S	S	(32)
AV	NAV	S	O	(33)
NAV	AV	A	S	(37)
NAV	NAV	A	O	(40)
NAV	NAV	A	A	(41)

Liu (2011:183) has only two possible controller-controllee relations, compared to five in Table 2. The additional three types of relation all appear with A as the controller, for which Liu was not able to find examples, but which have been demonstrated in this paper to be grammatical. Liu only looked for nominative ('trigger') controllees, and thus never examined the possibility of A-A control, which proved to be an allowed type of control.

8. Patient control

Patient control is a construction where the patient of the matrix clause controls an argument in the complement clause. Liu (2011:186) specifies it as a matrix patient controlling the reference of the missing nominative ('trigger'). For NAV matrix clauses, where the patient is an O, she gives the following examples. In (42), the embedded clause is AV, and the nominative *ulaqi?* controls the reference of S in the complement clause. Liu (2011:191) states that the empty category in Matu'uwal patient control must be an actor, and cannot be a patient even when it is a nominative ('trigger') argument in an NAV clause, which she demonstrates with (43).

(42) Liu (2011:191)

qihl-un	ni	yaya?	ku	ulaqi?$_i$	i	[h<um>ihip	cku
force-PV	GEN	mother	NOM	child	LNK	<AV>kiss	OBL
cuquliq	PRO$_i$]						
person	(NOM)						

'The mother forces the child to kiss the person'.

(43) Liu (2011:192)

*qihl-un	ni	yaya?	ku	ulaqi?$_i$	i	[hihip-an	nku
force-PV	GEN	mother	NOM	child	LNK	kiss-LV	GEN
cuquliq	PRO$_i$]						
person	(NOM)						

'The mother forces the child to be kissed by the person'.

However, according to my own fieldwork (with Liu's language consultant), the reason why (43) is unacceptable is not grammatical. Indeed, it is grammatically sound, and the consultant disliked the sentence for semantic/cultural reasons. Changing the context of the sentence without changing the syntactic structure produced a grammatical and semantically acceptable sentence, as shown in 44. This means that patient control in NAV-NAV constructions is not prohibited, and the controllee can be a patient, contrary to Liu's claim.

(44) qihl-un ni yayaʔ ku ulaqiʔ$_i$ i [gibaʔ-un ni yutas
force-pv GEN mother NOM child LNK hug-PV GEN grandfather
'The mother forces the child to be hugged by the grandfather'.

Liu does not discuss any control constructions where the controllee is a missing genitive agent, and just like with agent control in AV-NAV constructions, I have not been able to find any examples of a nominative controller, be it S or O, controlling an A, which leads me to conclude that such control constructions are disallowed in Matu'uwal. The possible patient control relations are summarized in Table 3.

Table 3: Patient control in Matu'uwal

Matrix predicate	Complement predicate	Controller	Controllee	Example
NAV	AV	O	S	(42)
NAV	NAV	O	O	(44)

Like Liu (2011:191), I identify two possible control relations. Where Liu sees AV-AV control (with an oblique controllee), I examined her example and determined it to be an instance of raising. Liu marks NAV-NAV patient control as ungrammatical, but her example was unacceptable not on grounds of grammaticality, but rather due to pragmatic reasons, and the structure is indeed grammatical.

9. Conclusion

In this paper I have provided a full classification of control constructions in Matu'uwal Atayal, for both actor control and patient control. I have provided evidence that the AV-only restriction is not applicable to Matu'uwal, given the broad range of constructions where NAV verbs can occur in the embedded clause.

According to the data that I have collected so far (as well as earlier research by Liu (2011)), actor control is possible in almost any combination of AV and NAV in the matrix and complement clauses, with the notable exception of AV-NAV actor control where the controllee is an A (missing genitive argument). The A can serve as a controller to S, O, and even other A's. Patient control constructions are much more constrained, given that only a transitive O can serve as a controller in patient control, therefore the matrix clause is limited to NAV. The nominative controller in these contructions can control the reference to S or O (a missing nominative argument), but not to an A. This seems to indicate that there is a control hierarchy, where A outranks both S and O, while the latter two are equivalent in terms of their control constraints.

What was thought of by Liu as patient control with AV matrix predicates is in fact a raising construction, and therefore not relevant to the problem at hand.

I also briefly discussed resultative constructions, and concluded that they are an instance of oblique control, but also very limited in scope. Hopefully, further research will shed more light on this type of construction in Matu'uwal.

Given the distribution of actor and patient control in Matu'uwal, the fact that oblique control is limited to resultative constructions with a finite clause linker *cu*, and that oblique arguments cannot be controllees, I conclude that oblique arguments are not core arguments, in line with my initial assumption. This means that Matu'uwal is an ergative language, and not split-ergative as per Wu (2013), nor accusative as per Liu (2011).

References

Aikhenvald, Alexandra Y., & Dixon, Robert M. W. (eds). 2006. *Serial Verb Constructions: A Cross-Linguistic Typology*. Explorations in linguistic typology, no. v.2. Oxford; New York: Oxford University Press.

Aldridge, Edith. 2004. Antipassive and Specificity in Tagalog. *Pages 1–14 of:* Law, P. (ed), *ZAS Papers in Linguistics: Proceedings of AFLA 11*. Berlin: Zentrum fur Allgemeine Sprachwissenschaft, Typologie, und Universalienforschung.

Aldridge, Edith. 2007. Case in Ergative Languages and NP Split-Ergativity. *Pages 1–20 of:* Hoyt, F., Seifert, N., Teodorescue, A., & White, J. (eds), *Proceedings of the Texas Linguistics Society IX Conference: The Morpho-Syntax of Underrepresented Languages*. CSLI Online Publications.

Aldridge, Edith. 2012. Antipassive in Austronesian Alignment Change. *Pages 332–346 of:* Jonas, Dianne, Whitman, John, & Garrett, Andrew (eds), *Grammatical Change: Origins, Nature, Outcomes*. Oxford; New York: Oxford University Press.

Anderson, Stephen R. 1976. On the Notion of Subject in Ergative Languages. *Pages 1–23 of:* Li, Charles N. (ed), *Subject and Topic*. New York; San Francisco; London: Academic Press, Inc.

Carnie, Andrew. 2013. *Syntax: A Generative Introduction*. Third edn. Introducing linguistics, no. 16. Hoboken, New Jersey: Wiley-Blackwell.

Chang, Henry Yungli. 2004. AF Verbs: Transitive, Intransitive, or Both. *Pages 95–120 of:* Lin, Ying-chin (ed), *Studies on Sino-Tibetan Languages: Papers in Honor of Professor Hwang-Cherng Gong on His Seventieth Birthday*. Taipei: Institute of Linguistics, Academia Sinica.

Chang, Henry Yungli. 2006. The Guest Playing Host: Adverbial Modifiers as Matrix Verbs in Kavalan. *Pages 43–82 of: Clause Structure and Adjuncts in Austronesian Languages*. Berlin; New York: Mouton de Gruyter.

Chang, Henry Yungli. 2009. Adverbial Verbs and Adverbial Compounds in Tsou: A Syntactic Analysis. *Oceanic Linguistics*, **48**(2), 439–476.

Chang, Henry Yungli. 2010. On the Syntax of Adverbial Verbs in Formosan Languages. *Pages 183–211 of:* Travis, Lisa (ed), *Austronesian Contribution to Theoretical Linguistics*. Amsterdam: John Benjamins Publishing Company.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Studies in generative grammar, no. 9. Dordrecht, Holland; Cinnaminson, New Jersey: Foris Publications.

Chomsky, Noam. 1982. *Some Concepts and Consequences of the Theory of Government and Binding*. Linguistic inquiry monographs, no. 6. MIT Press.

Dixon, Robert M. W. 1994. *Ergativity*. Cambridge studies in linguistics, no. 70. Cambridge; New York: Cambridge University Press.

Dixon, Robert M. W., & Aikhenvald, Alexandra Y. 2000. *Changing Valency: Case Studies in Transitivity*. Cambridge ; New York: Cambridge University Press.

Huang, Lillian M. 1995. *A Study of Mayrinax Syntax*. Taipei: The Crane Publishing Co., Ltd.

Huang, Lillian M. 1997. Serial Verb Constructions in Some Formosan Languages: A Typological View. Paper Presented at the 8th International Conference on Austronesian Linguistics, Academia Sinica, Taipei, December 28-30, 1997.

Kroeger, Paul. 1993. Another Look at Subjecthood in Tagalog. *Phillipine Journal of Linguistics*, **24**(2), 1–15.

Li, Paul Jen-kuei. 1995. The Case-Marking System in Mayrinax, Atayal. *Bulletin of the Institute of History and Philology, Academia Sinica*, **66**(1), 23–51.

Liu, Tsai-hsiu. 2011. Complementation in Three Formosan languages—Amis, Mayrinax Atayal and Tsou. *University of Hawai'i PhD dissertation*.

Manning, Christopher D. 1994. *Ergativity: Argument Structure and Grammatical Relations*. PhD thesis, Stanford University.

Rizzi, Luigi. 2000. *Comparative Syntax and Language Acquisition*. Routledge leading linguists. London; New York: Routledge.

Schachter, Paul. 1976. The Subject in Philippine Languages: Topic, Actor, Actor-Topic, or None of the Above? *Pages 491–518 of:* Li, Charles N. (ed), *Subject and Topic*. New York; San Francisco; London: Academic Press, Inc.

Schachter, Paul. 1995. The Subject in Tagalog: Still None of the above.

Schwartz, Arthur. 1976. On the Universality of Subject: The Ilocano Case. *Pages 519–543 of:* Li, Charles N. (ed), *Subject and Topic*. New York; San Francisco; London: Academic Press, Inc.

Simpson, Jane. 1983. Resultatives. *Pages 143–157 of:* Levin, Lori, Rappaport, Malka, & Zaenen, Annie (eds), *Papers in Lexical-Functional Grammar*. Bloomington: Indiana University Linguistics Club.

Starosta, Stanley. 1999. Transitivity, Ergativity, and the Best Analysis of Atayal Case-Marking. *Pages 371–392 of:* Zeitoun, Elizabeth, & Li, Paul Jen-kuei (eds), *Selected Papers from the Eighth International Conference on Austronesian Linguistics (8ICAL)*. Taipei: Academia Sinica.

Tang, Chih-chen Jane. 1999. On Clausal Complements in Paiwan. *Pages 529–578 of:* Li, Paul Jen-kuei, & Zeitoun, Elizabeth (eds), *Selected Papers from the 8ICAL*. Taipei: Academia Sinica.

Trask, Robert Lawrence. 1993. *A Dictionary of Grammatical Terms in Linguistics*. Routledge.

Tsai, Wei-tien Dylan, & Wu, Chun-ming. 2012. Conjunctive Reduction Revisited: Evidence from Mayrinax Atayal and Southern Paiwan. *Oceanic Linguistics*, **51**(1), 160–181.

Tsuchida, Shigeru. 1975. *Reconstruction of Proto-Tsoiuc Phonology*. PhD thesis, Yale University.

Wu, Chun-ming. 2013. *The Syntax of Linking Constructions in Mayrinax Atayal and Sinvaudjan Paiwan*. PhD thesis, National Tsing Hua University.

Yu, Xin-xian Rex. 2008. Two Types of Adverbials in Mayrinax Atayal. *Nanzan Linguistics*, Special Issue 5, 125–137.

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