Conjunctive Reduction Revisited: *
Evidence from Mayrinax Atayal and Southern Paiwan

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Abstracts

This paper is a follow-up investigation of conjunctive reduction in two Formosan languages, Mayrinax Atayal and Southern Paiwan. We examine phenomena surrounding the two-way grammaticalization of linkers, i.e., adverbialization and complementation, and show how it works to shape the sentence structure of the two languages. More specifically, it is argued that the Mayrinax linker ‘i’ licenses modal/evaluative construals on the complementizer layer, and control/middle construals on the lexical layer. In addition, Southern Paiwan sports a third type of linker construals on the inflectional layer, where frequency/repetitive/locative expressions are introduced, and permutation around the linker α is allowed. All in all, our comparative study of Mayrinax and Squiliq Atayal confirms that even in a language without overtly grammaticalized linkers, conjunctive reduction can still be in action, albeit in its final stage of development.

1. Conjunctive Reduction in a Wider Context

Conjunctive reduction is a phenomenon resulting from a two-way grammaticalization of coordinate structures: One direction involves adverbialization where a conjunction or linker evolves into a modifier marker; the other direction has to do with complementation where a conjunction/linker is grammaticalized as a complementizer introducing a subordinate clause, as schematized in the diagram below (MM: modifier marker):¹


Among the Formosan languages examined in Tsai (2007), Tsou is the most versatile in that it manifests almost all facets of conjunctive reduction. Amis, on the other hand, has a strong showing on both directions at the initial stage, while Squiliq Atayal is ranked farthest at the end of adverbialization, since there is no trace of a linker left in-between adverbials and main verbs, as shown in Table 1. Our observations thus beg the question whether there is evidence for a transition stage of the development of this type of language.

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¹ The notion of conjunctive reduction should not be confused with that of "coordination reduction". The latter has to do with the phenomenon where the subject of the second conjunct is reduced and controlled by the subject of the first conjunct.

Table 1.

<table>
<thead>
<tr>
<th>conjunctive reduction</th>
<th>additive construal</th>
<th>infinitive complement</th>
<th>adverbial marker</th>
<th>temporal/conditional clause</th>
<th>complex predicates</th>
<th>consequential construal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tsou</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
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<td>*</td>
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<tr>
<td>Amis</td>
<td>√</td>
<td>√</td>
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<td>*</td>
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<tr>
<td>Squliq Atayal</td>
<td>√</td>
<td>*</td>
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<td>√</td>
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From the angle of grammaticalization along the line of Hopper & Traugott (1993), the precursor of these Formosan languages may well pattern with Archaic Chinese in employing a linker such as *er* in (2a) to encode the conjunctive semantics of a variety of subordinate construals under the Neo-Davidsonian approach (cf. Parsons 1990). Namely, we may treat an adverbial as a predicate of an underlying event argument *e* associated with the main predicate, as shown in the semantic representation (2b), which roughly reads "there is a laughing event, and Confucius is the Actor, and the event is smilingly:"

(2) a. fuzi waner er xiao. 3
    Confucius smiling Conj laugh
    'Confucius laughed smilingly.'

b. ∃e (laugh(e) & Actor(e, Confucius) & smilingly(e))

So the question boils down to whether we can show that there is a transition stage for a fully developed language such as Squliq Atayal. Curiously enough, our recent study reveals that a relative of Squliq, Mayrinax Atayal, indeed makes extensive use of linkers in a variety of modifier and complement constructions (cf. Huang 1995, 1997; Wu 2009). From our point of view, Squliq has evolved to its full potential in terms of conjunctive reduction, whereas Mayrinax is on the relatively conservative side. In a similar light, we also find Southern Paiwan (Sinvaudjan) with some of the conjunctive reduction construals, while blocking others. It therefore provides an ideal testing ground for our hypothesis.

2 See Tsai & Chang (2003) for how this Neo-Davidsonian analysis can be extended to account for the syntax and semantics of *wh*-adverbials in Tsou.

3 The gloss abbreviations used in this paper are listed as follows:

<table>
<thead>
<tr>
<th>1</th>
<th>first person</th>
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<tbody>
<tr>
<td>2</td>
<td>second person</td>
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<tr>
<td>3</td>
<td>third person</td>
</tr>
<tr>
<td>Acc</td>
<td>accusative</td>
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<tr>
<td>AT</td>
<td>atemporal</td>
</tr>
<tr>
<td>AV</td>
<td>agent voice marker</td>
</tr>
<tr>
<td>BV</td>
<td>beneficiary/benefactive voice</td>
</tr>
<tr>
<td>Cau</td>
<td>causative</td>
</tr>
<tr>
<td>Dur</td>
<td>durative marker</td>
</tr>
<tr>
<td>Ncl</td>
<td>noun class marker</td>
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<tr>
<td>Nom</td>
<td>nominative case</td>
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<tr>
<td>Conj</td>
<td>conjunction</td>
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<tr>
<td>Cos</td>
<td>change-of-state marker</td>
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<tr>
<td>Gen</td>
<td>genitive case</td>
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<tr>
<td>Imp</td>
<td>imperative</td>
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<tr>
<td>Ints</td>
<td>intensifier</td>
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<tr>
<td>Irr</td>
<td>irreals marker</td>
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<tr>
<td>IV</td>
<td>instrumental voice</td>
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<tr>
<td>Lnk</td>
<td>linker</td>
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<tr>
<td>Loc</td>
<td>locative case marker</td>
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<tr>
<td>LV</td>
<td>locative voice</td>
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<tr>
<td>Obl</td>
<td>oblique case marker</td>
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<tr>
<td>Prf</td>
<td>perfective</td>
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<tr>
<td>PV</td>
<td>patient voice marker</td>
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<tr>
<td>pl</td>
<td>plural</td>
</tr>
<tr>
<td>Prog</td>
<td>progressive</td>
</tr>
<tr>
<td>Red</td>
<td>reduplication</td>
</tr>
<tr>
<td>Rea</td>
<td>realis marker</td>
</tr>
<tr>
<td>Rl</td>
<td>relativizer</td>
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<tr>
<td>S</td>
<td>singular</td>
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</tbody>
</table>
This paper is organized as follows: Section 2 provides a comprehensive survey of how the linker 'i' behaves in Mayrinax Atayal: Control and middle constructions constitute the lower tier of complementation, while modal and evaluative constructions forms the upper tier. We also employ the topicalization test to show that complementation can lead to adverbialization when the complement clause is detached to the sentence-initial position. In section 3, we venture into a grey area in Southern Paiwan, where, in addition to the two tiers of linker usages just mentioned, there is yet another type of construals in-between, which is associated with the inflectional layer. Section 4 and 5 conclude this paper.

2. Mayrinax Atayal: A Missing Link
2.1. Control Complements

Starting from the process of complementation, we find a linker 'i' situated in-between an adverbial and the main predicate in Mayrinax, which is completely absent in Squiq, as evidenced by (3a-c):

(3) a. ma-uhum=ci' ['i' h<um>ab cu' bauwak].
   AV-brave=1s.Nom Lnk stab<AV> Acc wild.hog
   'I stabbed the wild hog bravely.' (manner construction)

b. paqas-un=ta' ['i' magal ku' siatu' ka' hani].
   happy-PV=1pl.Gen Lnk get.AV Nom clothes Rl this
   'We will get the clothes happily.' (manner construction)

c. si-ptubah ['i' mnahuqil ni' yaba' 'i' Yumin].
   BV-sudden Lnk die.AV Obl father Nom Yumin
   'Father suddenly died on Yumin.' (manner construction)

Here we have a phenomenon arguably belonging to the right-hand side of the schema (1), where 'i' serves as a complementizer introducing a control complement selected by the manner predicates. The same observation carries over to complement clauses selected by control and middle/tough predicates (cf. Wu 2009), as exemplified by (4a,b) respectively:

(4) a. siwal-an=mi' ['i' m-aniq cku' quilih] 'i' Watan.
   allow-LV=1s.Gen Lnk AV-eat Acc fish Nom Watan
   'Watan was allowed by me to eat the fish.' (control construction)

b. aqih ['i' niq-un ku' quilih].
   bad Lnk eat-PV Nom fish
   'The fish tastes bad.' (middle/tough construction)

It is also instructive to note that there is an infinitive restriction on complementation discussed above, as is well-documented in the literature on Formosan languages (cf. Huang 1997, Tang 1999, H. Chang 2005). More specifically, the predicate of the complement clause introduced by 'i' (hereafter 'i'-complement) is not allowed to bear either perfective or irrealis inflections. This point is best illustrated by comparing (5a-c) with (3a-c) respectively:

(5) a. *ma-uhum=ci' ['i' h<um><in>ab cu' bauwak].
   AV-brave=1s.Nom Lnk stab<AV><Prf> Acc wild.hog
'I stabbed the wild hog bravely.'

b. * paqas-un=ta' [‘I’ pa-'agal ku’ siatu’ ka’ hani].
    happy-PV=1pl.Obl Lnk Irr.AV-take Nom clothes Ri this
    ‘We will take these clothes happily.’

c. * si-ptubah [‘I’ m<in>anahuqil/pa-'nahuqil ni’ yaba’
    BV-sudden Lnk die<Prf>.AV/Irr.AV-die Obl father
    ‘Father suddenly died on Yumin.’

Furthermore, the same restriction applies to similar constructions with resultative construals, where the ‘i’-complement in question must remain non-finite in its Actor Voice (AV) form, as evidenced by (6a,b):

(6)  a.  m<in>a'uway 'i' h<um>akay/*h<um><in>kay 'i' Watan.
    tired<Prf>.AV Lnk walk<AV>/walk<AV><Prf> Nom Watan
    ‘Watan walked until he is tired.’

   b.  sanam-huqil-un 'i' t<um>uting/*tuting-un ku' bauwak.
    beat-die-PV Lnk beat<AV>/beat-NAV Nom wild.hog
    ‘The wild hog is beaten to death.’

Lastly, we notice that unlike voice concord phenomena observed in Tsou (cf. M. Chang 2004, H. Chang 2009), there is no requirement for the main predicate to align with the complement predicate in terms of voice in Mayrinx. As illustrated by the AV-NAV contrasts of (7a-c), the predicate of complement clause must retain its AV form regardless of the voice of adverbial predicates:

(7)  a. ma-uhum=ci ‘i’ h<um>ab/*hab-un cu’ bauwak.
    AV-brave=1s.Nom Lnk stab<AV>/stab-PV Acc wild.hog
    ‘I stabbed the wild hog bravely.’

   b. pa-paqas-un=ta' 'i' magal/*'agal-un ku' siatu' ka' hani.
    Red-happy-PV=1pl.Gen Lnk take.AV/take.PV Nom clothes RL Dem
    ‘We will get these clothes happily.’

   c. si-ptubah 'i' mnuahuqil/*si-'nahuqil ni’ yaba’ 'i' Yumin.
    BV-sudden Lnk die.AV/BV-die Obl father Nom Yumin
    ‘Father suddenly died on Yumin.’

This indicates that what is involved here is a genuine case of complementation, where ‘i’ has evolved into a complementizer introducing an infinitive clause.

2.2. Middle/Tough Complements

In contrast to control complements, middle/tough complements must remain non-finite in their NAV forms, namely, Patient Voice (PV) in (8a,b), Locative Voice (LV) in (8c), and
Instrumental Voice (IV) in (8d):

(8) a. balayiq \['i' niq-un ku' qulih ka' hani].
   good.AV Lnk eat-PV Nom fish RL this
   ‘This fish tastes good’

b. balayiq \['i' patbins-un ku' raramat ka' hani].
   good.AV Lnk sell-PV Nom vegetables RL this
   ‘The vegetables sell well.’

c. 'aihung \['i' patas-an ku' ruwas ka' hani].
   hard.AV Lnk read-LV Nom book RL this
   ‘This book is hard to read.’

d. aqih \['i' si-caqis cu' situing ku' ragum ka' hani].
   bad.AV Lnk IV-sew Acc clothes Nom needle RL this
   ‘This needle is hard to use to sew the clothes.’

As illustrated throughout (9a-d), once the embedded predicates shift to AV, the sentences degrade considerably:

(9) a. * balayiq 'i' maniq ku' qulih ka' hani.
   good.AV Lnk eat.AV Nom fish RL this
   ‘This fish tastes good’

b. * balayiq 'i' matbainay ku' raramat ka' hani.
   good.AV Lnk sell.AV Nom vegetables RL this
   ‘The vegetables sell well.’

c. * 'aihung 'i' matas ku' ruwas ka' hani.
   hard.AV Lnk read.AV Nom book RL this
   ‘This book is hard to read.’

d. * aqih 'i' c<um>aqis cu' situing ku' ragum ka' hani.
   bad.AV Lnk sew<AV> Acc clothes Nom needle RL this
   ‘This needle is hard to use to sew the clothes.’

Likewise, neither perfective nor irrealis inflections (represented by Ca-reduplication) are allowed in middle/tough complements, as shown in (10a-d):

(10) a. * balayiq 'i' q<in>aniq/na-niq-un ku' qulih ka' hani
   good.AV Lnk eat<Prf.PV>/Red.Irr-eat-PV Nom fish RL this
   ‘This fish will taste good.’

b. * balayiq 'i' p<in>atbainay/ pa-patbinas-un ku' raramat
   good.AV Lnk sell<Prf.PV> Red.Irr-sell-PV Nom vegetables
   ‘The vegetables will sell well.’
   ‘This book will be hard to read.’

d. * aqih 'i' c<in>aqis/ca-caqis ku' situing bad.AV Lnk sew<Prf.IV>/ Red.Irr.IV-sew Acc clothes ku' ragum ka’ hani. Nom needle Rl this
   ‘This needle will be hard to use to sew the clothes.’

For one thing, one might argue that the middle/tough predicates in question are
one-place predicates, with the following 'i' analyzed as a nominative case marker rather than
a complementizer; namely, the 'i'-complement is actually a sentential subject. This alternative,
however, is not viable for the following reason: In Mayrinax Atayal, as well as in quite a few
Austronesian languages, only a grammatical subject may undergo extraction. If (8a) assumes
a syntactic configuration like (11a), then the subject extraction in (11b) should be impossible,
since it would violate sentential subject constraint in Ross's (1967) sense (or the Complex-NP
Island Constraint to the same effect):

(11) a. balayiq [DP 'i' [CP niq-un [DP ku' qulih ka' hani]].
   good.AV Nom eat-PV Nom fish Rl this
   ‘This fish tastes good.’

   b. [DP qulih ka' hani] k ku' [TP balayiq [CP 'i' niq-un t k]].
      fish Rl this NOM good Lnk eat-PV
   ‘This fish tastes good.’

   c. [DP qulih ka' hani] k ku' [TP [vP balayiq [CP 'i' niq-un] t k]].
      fish Rl this NOM good Lnk eat-PV
   ‘This fish tastes good.’

This predication, however, is not borne out, since the extraction in question is perfectly
grammatical, which in turn suggests that the sentence should be analyzed as something like
(11c). As a result, no locality constraint is violated, and we get the desirable result.

2.3. Modal and Evaluative Complements

Interestingly enough, higher-order predicates also employ the same linker to create a potential
raising structure. This point is best illustrated by epistemic modal constructions such as (12a)
and evaluative constructions such as (12b):

(12) a. ki [i' baq [i' k<um>aal cu' kai' na' matu'uwal]].
   possible Lnk can.AV Lnk speak<AV> Acc word Gen Mayrinax

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4 The irreals and perfective forms of Mayrinax verbs do not have normal IV/BV inflections: The former
employs Ca-reduplication, and the latter <in> infixation to the verb root (cf. Huang 1995).
5 The extraction in (10b) also violates Subjacency in Chomsky's (1973) terms, as well as the Condition on
Extraction Domain (CED) in the sense of Huang (1982).
'It is possible that he can speak Mayrinax.' (modal construction)

b. nahriq ['i' ini=mu' niq-i ku' qulih].
   pitiful Lnk Neg=1s.Gen eat-PV.AT Nom fish
   'It is a pity that I did not eat up the fish.' (evaluative construction)

Unlike control and middle/tough constructions, here 'i'-complements are distinctively finite. This is indicated by the fact that they can carry perfective and irrealis markers such as pa- in (13a) and <in> in (13b,c):

(13) a. ki  ['i' pa-k-balayiq 'i' niq-un ku' qulih ka' hani].
   possible Lnk Irr.AV-Cos-good Lnk eat-PV Nom fish Rl this
   'The fish might taste good.'

b. ki  ['i' <in>an-ri'a-ri'ax 'i' c<um>bu' ni' Watan ku' bauwak].
   possible Lnk do<Prf.PV>~Red-often Lnk shoot<AV> Gen Watan Nom wild.hog
   'It is possible that Watan went hunting wild hogs often.'

c. nahriq ['i' c<in>uyiq=nha' ku' mami'].
   pitiful Lnk throw.away<Prf.PV>=3P.Gen Nom cooked.rice
   'It is a pity that they threw the cooked rice away.'

Moreover, just as one might expect from our previous discussion, the predicates of this type of 'i'-complements are no longer restricted to their AV forms. They may freely carry PV or BV markers, as shown in (14a-c):

(14) a. ki  ['i' cbu'-un ni' Watan ku' bauwak].
   possible Lnk shoot-PV Obl Watan Nom wild.hog
   'The wild hog was possibly shot by Watan.'

b. ki  ['i' si-cbu' ni' Watan cu' bauwak 'i' Yumin.
   possible Lnk BV-shoot Gen Watan Acc wild.hog Nom Yumin
   'Watan possibly shot a wild hog for Yumin.'

c. nahriq ['i' ini'=mu' binas-i ku' siatu'].
   pitiful Lnk Neg=1s.Gen buy-PV.AT Nom clothes
   'It is a pity that I did not buy the clothes.'

In fact, this finite-infinitive asymmetry of 'i'-complements reflects a fundamental distinction between two classes of predicates in terms of their structural heights. That is, manner, control, and middle/tough predicates take a complement without temporal/voice marking, corresponding to the vP phase in the sense of Chomsky (1999, 2000). By contrast, epistemic modals and evaluative adverbials select a complement with full-fledged temporal/voice inflections, which is a sure indication of their higher-order status. In other words, they are most likely to behave in line with functional categories in the left periphery in other languages (cf. Rizzi 1997, Cinque 1999).
2.4. Topicalization

Yet there is another type of grammaticalization where one of the conjuncts has involved into an adjunct clause, and can be topicalized to the sentence-initial position. As it turns out, after the complementation process is complete, the subordinate clause of (15a) can be detached as an adjunct through topicalization, as shown in (15b):

(15) a. pa-'inuqil=su' ['i' niq-un=su' ku' quilih].  
    Irr-die.AV=2s.Gen Lnk eat-PV=2s.Gen Nom fish  
    'If you eat this fish, you will die.'  (conditional clause)

    b. ['i' niq-un=su' ku' quilih ga'], pa-'inuqil=su'.  
    Lnk eat-PV=2s.Gen Nom fish Top Irr-die.AV=2s.Gen  
    'If you eat this fish, you will die.'  (conditional clause)

Here 'i' instead functions as a complementizer introducing a conditional/temporal clause, very much like its counterpart ho in Tsou (cf. Tsai 2007). The same observation also applies to temporal expressions such as casan 'tomorrow', as illustrated below:

(16) a. m-a-'usa' ['i' Thaipaq] 'i' Taimu ['i' casan].  
    AV-Irr-go Lnk Taipei Nom Taimu Lnk tomorrow  
    'Taimu will go to Taipei tomorrow.'

    b. ['i' casan ga'], m-a-'usa' ['i' Thaipaq] 'i' Taimu.  
    Lnk tomorrow Top AV-Irr-go Lnk Taipei Nom Taimu  
    'Tomorrow, Taimu will go to Taipei tomorrow.'  (temporal expression topicalized)

    c. * ['i' Thaipaq ga'], m-a-'usa' 'i' Taimu ['i' casan].  
    Lnk Taipei Top AV-Irr-go Nom Taimu Lnk tomorrow  
    'To Taipei, Taimu will go tomorrow.'  (locative expression topicalized)

In (16a), the linker 'i' seems to pattern with prepositions in other languages, and the temporal expression as a whole can undergo further topicalization, as illustrated in (16b). By contrast, (16c) shows that locative expressions are not subject to the same construal. This asymmetry is probably related to the fact that in some Formosan languages, temporal expressions often pattern with subjects in terms of their extractability in the sense of Keenan (1976) and Keenan & Comrie (1977) (cf. H. Chang 1997 and Tsai 2004), as exemplified by the following data from Squliq Atayal:

(17) a. m-usa Sincik suxan qu Temu.  
    AV-go Hsinchu tomorrow Nom Temu  
    'Temu will go to Hsinchu tomorrow.'  (Squliq Atayal)

    b. [suxan ga], m-usa Sincik qu Temu.  
    tomorrow Top AV-go Hsinchu Nom Temu  
    'Tomorrow, Temu will go to Hsinchu.'  (temporal expression topicalization)

    c. * [Sincik ga], m-usa suxan qu Temu.  
    Hsinchu Top AV-go tomorrow Nom Temu  
    'To Hsinchu, Temu will go tomorrow.'  (locative expression topicalization)
The reason, as offered by Tsai (2004), is that temporal adverbials are situated in a much higher position than their locative counterparts: As IP-adjuncts, they can be merged after the completion of the vP phase. Consequently, they are allowed to undergo A’-constructions such as pseudo-cleft, relativization, and topicalization, just like nominative arguments.

2.5. Coordination

Finally, in comparison with the rather peculiar behavior 'i'-complements discussed above, the status of the linker/conjunction ru’ is relatively uncontroversial. It appears in both Squiliq and Mayrinax, and typically introduces a consequential complement, as in (18):6

(18) s<um>'an cu' bauwak 'i' Tapas [ru’/*i' hab-un=nia'].
breed<AV> Acc wild.hog Nom Tapas Lnk kill-PV=3sl.Obl
'Tapas bred hogs and then killed them.'

In addition, ru’, but not 'i’, can license a purposive complement, as evidenced by (19a,b):

(19) a. s<um>'an [ru’/*i' pahab] cu' bauwak 'i' Tapas.
breed<AV> Lnk kill Acc wild.hog Nom Tapas
'Tapas bred hogs to kill.'

b. magal cu' takis 'i' Watan [ru’/*i' si-hab=nia' cu' bauwak].
take.AV Acc knife Nom Watan Lnk IV-stab=3s.Gen Acc hog
'Watan takes the knife to stab/kill the hog.'

More importantly, 'i’ cannot express a cause-effect relationship, while it is the second nature of ru’ to introduce a resultative complement.7 This point can be seen by comparing the following AV-PV pair of sentences:

(20) a. m-sihuwal ku' bauwak na' lahulahu [ru’/*i' m-nahoqil] la.
AV-drop Nom wild.hog of mountain Lnk AV-die Inc
'The mountain hog dropped and died as a result.'

b. tuting-un ku' bauwak na' lahulahu [ru’/*i' pa-anhuqil-un].
beat-PV Nom wild.hog of mountain Lnk Cau-die-PV
'The mountain hog was beaten to death.'

A striking fact in this context is that, once the word order between the antecedent clause and the result clause is reversed, as in (21), the cause-effect construal in question suddenly becomes available for the linker 'i’, as shown below:

(21) sanam-huqil-un 'i' t<um>uting ni' Watan ku' bauwak.
beat-die-PV Lnk hit<AV> Gen Watan Nom wild.hog
'The wild hog was beaten to death by Watan.'

6 For a comprehensive study of the relationship between coordinate and comitative construals in Squiliq Atayal, see Huang and Hayung (2011).
7 The cause-effect construal of ru’ seems to fall under the category of causal coordination in Haspelmath’s (2004) sense.
As a matter fact, there is a sharp contrast between the antecedent-result order and the result-antecedent order with respect to the choice of linker: That is, only \( ru' \) is allowed for the former, while only \( 'i' \) is compatible with the latter, as indicated by the fact that they are in complementary distribution in (22a,b):

(22) a. \( h<um>akay \ 'i' \ Watan \ \textcolor{red}{ru'/*'i'} \ ma'uwai. \)
walker<AV> Nom Watan Lnk tired.AV
'Watan walked such that he was tired.'

b. ma'uwai \textcolor{red}{'i'/*ru'} h<um>akay \ 'i' \ Watan.
tired.AV Lnk walk<AV> Nom Watan
'Watan walked till he was tired.'

A similar case can also be found with the linker \( ho \) in Tsou (cf. Tsai & Chang 2003), where the antecedent-result order may produce a causal reading, as in (23a), whereas the result-antecedent order would lead to a resultative question, as in (23b):

(23) a. m-i-ta m-ainenu \textcolor{blue}{ho} m-i-ta eobak-o ta Mo'o \ 'e \ Pasuya?
A V-Rea-3s AV-how and AV-Rea-3s hit-AV Obl Mo'o Nom Pasuya
'Through come Pasuya hit Mo'o?' (Tsou causal question)

b. m-i-ta m-ainenu \textcolor{blue}{ho} m-i-ta peayofu \ 'e \ Pasuya?
A V-Rea-3s AV-how and AV-Rea-3s run Nom Pasuya
'What is the result of Pasuya's running?' (Tsou resultative question)

2.6. Interim Summary

We have seen that Mayrinax Atayal proves to be the missing link to bridge the gap between Squiliq Atayal and its precursors with respect to conjunctive reduction. This finding also provides a model according to which we can carry out our investigation further into other Austronesian languages, and see how complementation and adverbialization play out there (see, for example, Bril 2006). In the next section, we will venture into a grey area where the line between coordination and subordination is still somewhat blurred.

3. Southern Paiwan: A Grey Area

3.1. Conjunctive Reduction in Motion

Along our line of thinking, Southern Paiwan turns out to be a curious case with regard to the split between adverbialization and complementation: Here conjunctive reduction is associated with a linker \( a \), which typically appears in a now familiar bi-clausal configuration, as exemplified below:

(24) \( g<em>alju=a'en \ a k<em>an ta ciqaw. \)
slow<AV>=1s.Nom Lnk run.AV Obl fish
'I run slowly.' (manner adverbial)

Just like its counterpart \( 'i' \) in Mayrinax, \( a \) is often found situated in-between the manner adverbial and the main predicate, and it is impossible to place either perfective marking or
non-Actor voice in the second conjunct, as evidenced by the ill-formedness of (25a,b) respectively:

(25) a. * na-g<em>a' en  a na-k<em>a an ta ciqaw.
    Prf-slow=1s.Nom Lnk Prf-run<AV> Obl fish
    'I ate fish slowly.'

    1s.Gen-slow-PV Lnk run-PV Nom fish
    'The fish was eaten by me slowly.'

This indicates that a may have indeed evolved into a complementizer introducing an infinitive clause.

In parallel, the frequency/repetitive/locative (FRL) expressions in (26a-c) follow suit in participating in the complementation construals, where the complement in question is again introduced by a:

(26) a.  palayulayu=a'en a c<em>aqis ta itung.
    often.AV=1s.Nom Lnk sew<AV> Obl clothes
    'I sew clothes often.'
    (frequency)

   b.  'u-umalj-en a c<em>aqis a itung.
    1s.Gen-again-PV Lnk sew<Perf.PV> Nom clothes
    'I sew the clothes again.'
    (repetitive)

   c.  uRi='u-pa-sekez-en a pi-ti-ina     a   'u-paljiting.8
    Irr=1s.Gen-Cau-stop-PV Lnk Cau.to.be.at-Ncl-mother.AV Nom 1s.Gen-car
    'I will park my car in Mother’s place.'
    (locative)

Our point is best illustrated by comparing (26a-c) with (27a-c) respectively: the second predicate can be associated neither with tense/aspectual markers nor with non-Actor voices, which is a sure indication of the non-finite nature of the complement clause:

(27) a. * palayulayu=a'en a c<in>aqis ta itung.
    often.AV=1s.Nom Lnk sew<Perf.PV> Obl clothes
    'I sew clothes often.'
    (frequency)

   b. * 'u-umalj-en a c<in>aqis a itung.
    1s.Gen-again-PV Lnk sew<Perf.PV> Nom clothes
    'I sew the clothes again.'
    (repetitive)

   c. * uRi='u-pa-sekez-en a uRi=pi-ti-ina-en a
    Irr=1s.Gen-Cau-stop-PV Lnk Irr=Cau.to.be.at-Ncl-mother-PV Nom
    'u-paljiting.
    1s.Gen-car
    'I will park my car in Mother’s place.'
    (locative)

8 In this paper, we use ‘R’ instead of ‘g’ to represent a voiced velar fricative in Southern Paiwan since the language has the voiced velar stop ‘g’. In that dialect it represents a sound change from an earlier ‘r’. Identically, the glottal stop that is found in =a‘en ‘1S.Nom’ actually comes from an earlier k.
Furthermore, the linker \( a \) can be employed to introduce a control complement, where the above tense/voice restriction is duly observed:

\[(28)\]
\[
a. \text{Ru-q}<em>\text{ayam}=\text{a}'\text{en} \text{ a p}<em>\text{anaq ta vavuy.}
\]
\[
\text{Irr-try}<AV>=\text{1s.Nom} \text{ Lnk shoot}<AV> \text{ Obl wild.hog}
\]
\[
'\text{I will try to shoot wild hogs.'}
\]

\[
b. * \text{Ru-q}<em>\text{ayam}=\text{a}'\text{en} \text{ a p}<in>\text{anaq ta vavuy.}
\]
\[
\text{Irr-try}<AV>=\text{1s.Nom} \text{ Lnk shoot}<\text{Perf.PV}> \text{ Obl wild.hog}
\]
\[
'\text{I will try to shoot wild hogs.'}
\]

3.2. Permutation Restriction

It is noteworthy that Paiwan is characterized by a peculiar phenomenon associated with \( a \)-construals. That is, it is possible to swap the ordering of the predicates involved without changing the semantics involved. As shown in (29a-c), the FRL expression typically precedes the other predicate:

\[(29)\]
\[
a. \text{palayulayu}=\text{a}'\text{en} \text{ a c}<em>\text{aqis ta itung.}
\]
\[
\text{often}<AV>=\text{1s.Nom} \text{ Lnk sew}<AV> \text{ Obl clothes}
\]
\[
'I\text{ sew clothes often.'} \quad \text{(frequency)}
\]

\[
b. '\text{u-umalj-en} \text{ a c}<em>\text{aqis a itung.}
\]
\[
\text{1s.Gen-again-PV} \text{ Lnk sew}<AV> \text{ Nom clothes}
\]
\[
'I\text{ sew the clothes again.'} \quad \text{(repetitive)}
\]

\[
c. \text{uRi='u-pi-ti-ina-en} \text{ a pa-sekez a 'u-paljiting.}
\]
\[
\text{Irr=1s.Gen-cause.to.be.at-Ncl-mother-PV} \text{ Lnk Cau-stop Nom 1s.Gen-car}
\]
\[
'I\text{ will park my car in Mother’s place.'} \quad \text{(locative)}
\]

On the other hand, the FRL adverbial may exchange its position with the following predicate without changing the grammaticality and the interpretation, as evidenced by (30a-c):

\[(30)\]
\[
a. \text{c}<em>\text{aqis}=\text{a}'\text{en} \text{ a palayulayu/*p}<in>\text{ayulayu ta itung.}
\]
\[
\text{sew}<AV>=\text{1s.Nom} \text{ Lnk often}<AV>/\text{often}<\text{Perf.PV} \text{ Obl clothes}
\]
\[
'I\text{ sew clothes often.'} \quad \text{(frequency)}
\]

\[
b. '\text{u-c}<in>\text{aqis a m-umalj/*'<in>umalj a itung.}
\]
\[
\text{1s.Gen-sew}<\text{Perf.PV}> \text{ Lnk AV-again/*again}<\text{Perf.PV}> \text{ Nom clothes}
\]
\[
'I\text{ sew the clothes again.'} \quad \text{(repetitive)}
\]

\[
c. \text{uRi='u-pa-sekez-en} \text{ a pi-ti-ina /*uRi-p-i-ti-ina-en}
\]
\[
\text{Irr=1s.Gen-Cau-stop-PV} \text{ Lnk Cau.to.be.at-Ncl-Mother-PV/}
\]
\[
*uRi-p-i-ti-ina-en \text{ a 'u-paljiting.}
\]
\[
*Irr-Cau.to.be.at-Ncl-Mother-PV \text{ Nom 1s.Gen-car}
\]
\[
'I\text{ will park my car in Mother’s place.'} \quad \text{(locative)}
\]

The permutation does not alter the infinitive restriction on complementation, either. The parallel between (30a-c) and (31a-c) indicates that the complement introduced by \( a \) does not
show tense/voice inflections in either word order:

(31)  
a. palayulayu=a'en a c<em>aqis/*c<in>aqis ta itung.  
often.AV=1s.Nom Lnk sew<AV>/*sew<PERF.PV> Obl clothes  
'I sew clothes often.'  
(frequency)

b. 'u-umalj-en a c<em>aqis/*uRi=c<em>aqis a itung.  
1s.Gen-again-PV Lnk sew<AV>/Irr=sew<AV> Nom clothes  
'I sew the clothes again.'  
(repetitive)

c. uRi='u-p-i-ti-ina-en  a pa-sekez/*p<in>-sekez a itung.  
Irr=1s.Gen-Cau-be.at-Ncl-mother-PV Lnk Cau-stop/Cau<PERF>-stop Nom  
'u-paljiting.  
1s.Gen-car  
'I will park my car in Mother’s place.'  
(locative)

By contrast, permutation is disallowed for control, manner and instrument construals. As illustrated throughout (32-34), the control/manner/instrument (CMI) predicates occur only in the leading predicate position, and the following complements introduced by a do not bear any tense/NA V markers and should be therefore identified as non-finite:

(32)  
a. 'u-qayam-en a p<en>anaq a zua a vavuy.  
1s.Gen-try-PV Lnk shoot<AV> Nom that Lnk wild.hog  
'I try to shoot the wild hog'  
(control)

b. * 'u-panaq-en a q<em>ayam a zua a vavuy.  
1s.Gen-shoot-PV Lnk try<AV>  Nom that Lnk wild.hog  
'I try to shoot the wild hog'

(33)  
a. g<em>alju=aken a mintuluq.  
slow<AV>=1s.Nom Lnk run.AV  
'I run slowly.'

b. * mintuluq=a'en a g<em>alju.  
run.AV=1s.Nom Lnk slow.AV  
'I run slowly.'

(34)  
a. s<em>an-siqunu=a'en a v<en>uciq ta vutjul.  
use<AV>-knife=1s.Nom Lnk cut<AV> Obl meat  
'I use a knife to cut meat.'  
(instrument)

b. * v<en>uciq=a'en a s<em>an-siqunu ta vutjul.  
cut<AV>=1s.Nom Lnk use<AV>-knife Obl meat  
'I use a knife to cut meat.'

The same observation can be extended to the complements of middle and modal predicates. In Paiwan, middle complements are also introduced by the linker a. Similar to their Mayrinax counterparts, middle complements in Paiwan must remain non-finite in their NAV forms, i.e., Patient Voice (PV) in (35a), Locative Voice (LV) in (35b), and Instrumental Voice (IV) in (35c):
(35) a. madjulu a seqas-en a pa-seqereng a icu a kasiw.
   easy Lnk cut-PV Lnk Cau-fall Nom this Lnk tree
   'This tree can be cut down easily.'

   b. pazangul a zuka-an a icu a tjeljep
   hard NOM paint-LV NOM this Lnk wall
   'The wall is hard to paint on it.'

   c. vulay a su-si-pauzip ta icu a vatu a kinsa.
   good Lnk 2s.Gen-IV-feed Obl this Lnk dog Nom cooked.rice
   'You may feed the dog with cooked rice easily.'

The contrast between (36a,b) shows that predicate permutation is disallowed in Paiwan
middle constructions. It is the middle verb madjulu 'easy' that takes the leading predicate
position:

(36) a. madjulu a seqas-en a pa-seqereng a icu a kasiw.
   easy Lnk cut-PV Lnk Cau-fall Nom this Lnk tree
   'This tree can be cut down easily.' (middle complement)

   b. * seqas-en a madjulu a pa-seqereng a icu a kasiw.
   cut-PV Lnk easy Lnk Cau-fall Nom this Lnk tree
   'This tree can be cut down easily.'

Higher-order modal predicates also employ the same linker a to create a potential raising
structure. It is illustrated by epistemic modal constructions such as (37b) and (37c), where the
pronominal clitic =a'en may optionally climb to the dynamic modal maga. Here
a-complements are distinctively finite, which observation is supported by the fact the
complement clauses can carry the irrealis marker uRi= in (37a):

(37) a. maga a uRi='u-panaq-en a vavuy.
   possible Lnk Irr=1s.Gen-shoot-PV Nom wild.hog
   'It is possible that I will shoot the wild hog.'

   b. maga a p<en>anaq=a'en ta vavuy.
   possible Lnk shoot<AV> Obl wild.hog
   'I probably shot wild hogs.'

   c. maga=a'en a p<en>anaq ta vavuy.
   possible=1s.Nom Lnk shoot<AV> Obl wild.hog
   'I probably shot wild hogs.'

Similarly, permutation does not occur in modal constructions. It is impossible to switch
the word order between modals and their complements introduced by a, as illustrated by the
respective contrasts between (38a,c,e) and (38b,d,f):

(38) a. maga a 'u-panaq-en a vavuy.
   possible Lnk 1s.Gen-shoot-PV Nom wild.hog
   'It is possible that I would shoot the wild hog.' (epistemic modal)
b. * 'u-panaq-en a maga a vavuy.
   1s.Gen-shoot-PV Lnk possible Nom wild.hog
   'It is possible that I shot the wild hog.'

c. maqati a q<em>aljup ti kapi.
   be.able.to.A V Lnk hunt<A V> Nom Kapi
   'Kapi is able to hunt.'
   (deontic modal)

d. * q<em>aljup a maqati ti kapi.
   hunt<A V> Lnk be.able.to.A V Nom Kapi
   'Kapi is able to hunt.'

e. t<em>uRu a k<em>an ta macam ti kapi.
   dare<A V> Lnk eat<A V> Obl spicy.food Nom Kapi
   'Kapi dares to eat spicy food.'
   (dynamic modal)

f. * k<em>an a t<em>uRu ta macam ti kapi.
   eat<A V> Lnk dare<A V> Obl spicy.food Nom Kapi
   'Kapi dares to eat spicy food.'

It is also instructive to note that this permutation phenomenon is not found in Mayrinax Atayal. It is shown throughout (39-43) that Mayrinax strictly disallows permutation in control, manner, frequency, middle and modal construals:

(39) Mayrinax control constructions
   a. m-antalam-ay=ta' 'i' c<um>bu ' cu' bauwak.
      AV-try-Proj=1P.Nom Lnk shoot<A V> Acc pig
      'Let's try to shoot wild hogs.'

   b. * c<um>bu'-ay=ta' 'i' m-antalam cu' bauwak.
      shoot<A V>-Proj =1P.NOM Lnk AV-try Acc pig
      'Let's try to shoot wild hogs.'

(40) Mayrinax manner constructions
   a. ma-uhum=ci' 'i' h<um>ab cu' bauwak.
      AV-brave=1s.Nom Lnk stab<A V> Acc wild.hog
      'I stabbed the wild hog bravely.'

   b. * h<um>ab=ci' 'i' ma-uhum cu' bauwak.
      stab<A V>=1s.Nom Lnk AV-brave Acc wild.hog
      'I stabbed the wild hog bravely.'

(41) Mayrinax frequency constructions
   a. m-na-pusa-l 'i' l<um>pug cu' ruwas 'i' watan.\(^9\)
      AV-do-two-times Lnk read<A V> Acc book Nom Watan

\(^9\) According to Zeitoun et al. (2010), \textit{pusal} should be further divided into \textit{pusa-} and \textit{–l}. The former represents
the numeral ‘2’, and the later ‘N times’ or ‘Freq’ in PAN.
'Watan read the book for two times.'

b. * l<em>um>pug 'I' m-na-pusa-l cu' ruwas 'i' watan.
read<AV> Lnk AV-DO-two-times Acc book Nom Watan
'Watan read the book for two times.'

c. m-na-ri'a-ri'ax 'I' l<em>um>pug cu' ruwas 'i' watan.
AV-do-Red-all.the.time Lnk read<AV> Acc book Nom Watan
'Watan reads the book all the time.'

d. * lumpug 'I' m-na-ri'a-ri'ax cu' ruwas 'i' watan.
read<AV> Lnk AV-do-RED-all.the.time Acc book Nom Watan
'Watan reads the book all the time.'

(42) Mayrinax middle constructions

a. balayiq 'I' patbins-un ku' raramat ka' hani.
good Lnk sell-PV Nom vegetables Rl this
'The vegetables sell well.'

b. * patbins-un 'I' balayiq ku' raramat ka' hani.
sell-PV Lnk good Nom vegetables Rl this
'The vegetables sell well.'

(43) Mayrinax modal constructions

a. baq 'I' k<em>um>aal cu' kai' na' matu'uwal 'i' watan.
can.AV Lnk speak<AV> Obl word Gen Mayrinax Nom Watan
'Watan can speak Mayrinax.'

b. * k<em>um>aal 'I' baq cu' kai' na' matu'uwal 'i' watan.
speak<AV> Lnk can.AV Obl word Gen Mayrinax Nom Watan
'Watan can speak Mayrinax.'

The above observations thus indicate that, quite different from 'i' in Mayrinax, the linker a in Paiwan retains a more conjunctive characteristic on the inflectional layer in Rizzi's (1997) sense. Namely, the permutation is still allowed for IP-level adverbials, while the same construal is prohibited from CP-level and VP-level adverbials, simply because the linkers involved have evolved into complementizers, and lost their conjunctive legacy entirely.

There are other pieces of evidence which may distinguish the Mayrinax linker 'i' from the Paiwan linker a with respect to the IP-level properties. For one thing, Paiwan employs the linker in negative sentences while Mayrinax does not. The Paiwan negator ini' scopes over a clause introduced by the linker a, as in (44). By contrast, the Mayrinax negators 'iqaat/ini' modify a clause without the linker i', as in (45a,b) and (45c,d).

(44) Southern Paiwan

a. ini' *(a) na-q<em>aljup ti kapi ta vavuy.
Neg Lnk Perf-hunt<AV> Nom Kapi Obl wild.hog
'Kapi did not hunt a wild hog.'

b. ini' *(a) uRi=q<em>aljup ti kapi ta vavuy.
Neg Lnk Irr=hunt<AV> Nom Kapi Obl wild.hog
'Kapi will not hunt a wild hog.'
The above contrasts are reminiscent of Mayrinax durative and progressive are expressed in terms of *asi* and *kia* respectively.\(^{10}\) *Asi* does not co-occur with the linker 'i' while *kia* does, as shown by a contrast in (46) and (47):

(46) a.  *asi* (*'i'*) quaalax.
    Dur Lnk rain.Ints
    'It keeps raining.'

b.  *asi* (*'i'*) qaaniq cu' mami' *'i*' watan.
    Dur Lnk eat.Ints Obl cooked.rice NomWatan
    'Watan keeps eating cooked rice.'

c.  *asi* (*'i'*) nubuuw-i ni' watan ku' quwau.
    Dur Lnk drink.Ints-PV.AT Obl watan Nom wine
    'Watan keeps drinking the wines.'

(47) a.  *kia* *(i'*) q<um>ualax.
    ProgLnk rain<AV>
    'It is raining.'

b.  *kia* *(i'*) maniq cu' mami' *'i*' watan.
    ProgLnk eat.AV Acc cooked.rice Nom Watan
    'Watan is eating cooked rice.'

c.  *kia* *(i'*) nubuw-un ni' watan ku' quwau.
    ProgLnk drink-PV Obl Watan Nom wine
    'Watan is drinking the wines.'

In other words, Mayrinax progressives exhibit a two-way split in hierarchical structure. The

\(^{10}\) *asi* and *kia* belong to the category of auxiliaries in Mayrinax Atayal (Huang 1995). They occur in pre-verbal position. They attract pronominal clitics, but cannot bear any TAM or voice markers.
"linkerless" progressive *asi* patterns with negators on the IP level, whereas the progressive *kia*, which does take a linker, operates on the CP level.

The facts presented above thus indicate that permutation is disallowed in Mayrinax because it lacks IP-level linkers. By contrast, since Paiwan has IP-level linkers, permutation is widely attested.

3.3. Coordination and Atemporal Marking on *Sa*-clauses

In Southern Paiwan, the conjunction *sa*, but not *a*, is able to license a consequential complement, which property bears a close resemblance to *ru* in Mayrinax and Squilq, as illustrated by the contrast of (48):

(48) na=mantjez=a'en *sa/*a uRi=s<em>a-ti-kapi.
Perf=come.back.A V=1s.Nom Conj Irr=go.to<A V>-Cl-Kapi
‘I came back and then will go to Kapi’s place.’

Also like *ru*, *sa* can license a cause-effect relationship, where *sa* introduces a resultative clause, as evidenced by (49a-c):

(49) a. maipuq *sa* macay a vavuy.
    stumble.A V Conj die.A V Nom wild.hog
    ‘The wild hog stumbled to death.’

b. maipuq a vavuy *sa* macay.
    stumble.A V Nom wild.hog Conj die.A V
    ‘The wild hog stumbled to death.’

c. k<in>ac na vatu a vavuy *sa* macay-anga.
    bite<Perf.PV> Gen dog Nom wild.hog Conj die.A V-Cos
    ‘The wild hog was bitten to death.’

In the case of simultaneous activities, we found an oddity associated with voice-marking: That is, there seems to be a voice mismatch between *sa*-clauses and the main predicate (also cf. Chang 2006). As shown by (50a-c), the main predicate *cala-cala-in* is marked with PV or LV, while the *sa*-clause assumes its atemporal form:

(50) a. 'u=cala-cala-in *sa* 'u-pacacepeli-peliv-i/*/in a ciqaw.
    1s.Gen=Red-fry-PV Conj 1s.Gen-Red-stir-Imp.AT/*PV Nom fish
    ‘I am frying and stirring the fish.’

b. 'u=cala-cala-in a ciqaw *sa* 'u-pacacepeli-peliv-i/*/in.
    1s.Gen=Red-fry-PV Nom fish Conj 1s.Gen-Red-stir-Imp.AT/*PV
    ‘I frying and stirring the fish.’

c. iRivuRivu-an *sa* pagupagul-i *sa* tjaDetjaDek-i
    scold-LV Conj beat-PV.AT Conj kick-PV.AT
    ni kapi a kakeDian.
    Gen Kapi Nom child
    ‘Kapi is scolding, beating and kicking the child.’
If the main predicate turns out to be inflected with AV, then the sa-clause must maintain its (reduplicated) root form, as in (51). On the other hand, there is no such voice mismatch in Mayrinax ru-constructions, as one might expect, as in (52).

(51) s<em>ena-senay=a'en sa 'u-tjava-tjavac/*tj<em>ava-tjavac.  
Red<AV>-sing=1s.Nom Conj 1s.Gen-Red-walk/*<AV>  
‘I am walking and singing.’

(52) a. sa'ang-un ru' tuting-un/*tuting-i ni' Yumin ku' 'ulaqi'.  
scold-PV Conj hit-PV/PV.AT Obl Yumin Nom child  
The child is scolded and beaten by Yumin. ’

b. maktaliyum 'i' Watan ru' h<um>akai/*hakai.  
run.AV Nom Watan Conj walk<A V>/walk  
‘Watan runs and walks.’

Furthermore, higher-order predicates again may employ the conjunction sa, but not a, to introduce a propositional complement, as in (53). By contrast, Mayrinax uses the linker ‘i’ rather than the conjunction ru ’ in high-order predicates, as in (54).

(53) paulan-anga sa/a ini a 'u-p<in>uljat a k<em>an a icu a ciqaw.  
pity-Cos Conj Neg Lnk 1s.Gen<Perf> Lnk all<AV>  
Nom this Lnk fish  
‘It is a pity that I didn’t eat up this fish.’ (evaluative)

(54) Mayrinax  
nahriq ['i'/*ru' ini'=mu' niq-i ku' qulih].  
pitiful Lnk Neg=1s.Gen eat-PV.AT Nom fish  
'It is a pity that I did not eat up the fish.' (evaluative)

3.5. No Detaching Temporal/Conditional Clauses

Unlike its counterparts in Tsou and Mayrinax, the linker a in Paiwan cannot introduce an adverbial clause and Paiwan disallows the fronting of a-clause:

(55) a. g<em>alju=a'en [a mintuluq].  
slow<AV> Lnk <AV>=1s.Nom  
‘I run slowly.’

b. * [a mintuluq], g<em>alju=a'en.  
Lnk run.AV slow<AV>=1s.Nom  
‘When running, I am slow.’

The reason, as it happens, may have to do with the fact that Paiwan has already employed complementizers such as nu or 'a to introduce temporal/conditional clauses with similar distributions. nu is the complementizer that serves to introduce an irrealis event/proposition,
while ’a is the one that is specialized for a realis event/proposition, as shown below:

(56) a. $g<\text{em}>\text{alju}=a'\text{en} \quad [\text{nu} \ \text{mintuluq}].$
slow<$AV>=1s.Nom \ \text{when.Irr} \ \text{run.AV}$
‘I am slow when running.’

b. $[\text{nu} \ \text{mintuluq}], \ \ g<\text{em}>\text{alju}=a'\text{en}.$
when.Irr \ \text{run.AV} \ \text{slow<$AV>=1s.Nom}$
‘When running, I am slow.’

(57) a. $\text{neka}=a'\text{en} \quad [\text{'}a \ \text{na-mangtjez} \ \text{timadju tatiaw}].$
$\text{Neg.exist}=1s.Nom \ \text{when.Rea} \ \text{Perf-come.AV 3s.Nom}$ yesterday
‘I was not home when he came back yesterday.’

b. $[\text{'}a \ \text{na-mangtjez} \ \text{timadju tatiaw}], \ \ \text{neka}=a'\text{en}.$
when.Rea \ \text{Perf-come.AV 3s.Nom}$ yesterday \ $\text{Neg.exist}=1s.Nom$
‘When he came back yesterday, I was not home.’

4. A Cartographic View of Conjunctive Reduction

So far we have made it clear that conjunctive reduction is indeed pervasive in Formosan languages. It is worthwhile to dig deeper into the two-way grammaticalization process behind the phenomenon, since it may well provide us a window to look into the syntax of modification and subordination from a more dynamic perspective. The distinctive patterns of relevant construals across these languages are summarized in the following table:

Table 2.

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<tr>
<td><strong>Tsou</strong></td>
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<tr>
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</tr>
<tr>
<td></td>
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<td>✓</td>
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<tr>
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</tr>
<tr>
<td></td>
<td>a</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
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<td>✓</td>
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<td>✓</td>
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In fact, within the two target languages Southern Paiwan and Mayrinax Atayal, it is possible to put together various types of conjunctive reduction construals in one sentence, and see how they fair with one another. The results are very interesting indeed; namely, multiple occurrences of the linker \(a\) and \(i\) are organized in a highly cartographic manner in the sense of Rizzi (1997) and Cinque (1999), as exemplified by (58a,b) and (59a,b) respectively:

(58) **Southern Paiwan**

a. maga \(a\) palayulayu \(a\) si-pa-siqizi-qizing
   possible  Lnk  BV-Cau-Red-with.effort
   \(a\) p<en>agul nimadju \(a\) aljak.
   Lnk  beat<AV>  3s.Gen  Nom  child
   ‘It is possible that the child is often beaten by him with effort.’
   [epistemic modal > frequency > manner > V]

b. maga \(a\) si-pa-siqizi-qizing \(a\) p<en>angul
   possible  Lnk  BV-Cau-with.effort  Lnk  beat<AV>
   a palayulayu nimadju \(a\) aljak.
   Lnk  often  3s.Gen  Nom  child
   ‘It is possible that the child is often beaten by him with effort.’
   [epistemic modal > manner > V > frequency]

(59) **Mayrinax Atayal**

a. ki \(i\) baq \(i\) mnatuul \(i\) manbibui
   possible  Lnk  can.AV  Lnk  three.times.AV  Lnk  fast.AV
   \(i\) mtula-lailaing \(i\) l<um>angu \(i\) watan.
   Lnk  back.and.forth.AV  Lnk  swim<AV>  Nom  Watan
   ‘It is possible that Watan is able to swim fast back and forth for three times.’
   [epistemic modal > deontic modal > frequency > manner > manner > V]

b. nahriq \(i\) ki \(i\) ini’ \(i\) qabaq \(i\)
   pity  Lnk  possible  Lnk  Neg  be.able.to  Lnk
   k<um>aal cu’ kai na ‘itaal \(i\) yumin.
   speak<AV>  Acc  words  Gen  Atayal  Nom  Yumin
   ‘It is a pity that Yumin may not speak Atayal.’
   [evaluative > epistemic modal > deontic modal > V]

Under the cartographic approach, we may sketch a picture of how conjunctive reduction works to shape the "topography" of all sorts of adverbials and complements in Mayrinax Atayal and Southern Paiwan, as visualized in the following diagram (irrelevant details omitted):
Here the Mayrinax linker 'i' appears in both the complementizer layer and the lexical layer, corresponding respectively to its modal usage on the upper tier of the sentence structure and its control usage on the lower tier. The Paiwan linker a, on the other hand, shows up on all three layers: The middle tier of construals, in particular, allow permutation, which in turn hints at its conjunctive origin. One way to look at this issue is to suggest that the FRL expressions in question are hosted by a Mod(ifier) phrase headed by a (cf. Rizzi 2004), which accounts for the hybrid nature of these construals, i.e., a complement-type of syntax with an adverbial-type of semantics.

A potential issue of this picture arises from the fact that FRL expressions can bear tense, voice, and agreement inflections, which is expected in view of their origin as a conjunct of the main predicate. However, this is unexpected given our analysis that they function as a specifier rather than a head in structural terms. The dilemma, nonetheless, can be solved by adopting Chomsky's (2000) probe-goal theory of licensing syntactic dependencies, according to which formal features are "valued" in a binding configuration, rather than being checked in a Spec-head configuration. As a result, it is possible for all the relevant inflections to be licensed "in-situ" through valuation from the T(ense) head (instead of undergoing head movement all the way to T). We will explore the potential of this alternative elsewhere.

5. Concluding Remarks

To sum up, we have shown that conjunctive reduction is very much alive across Formosan languages. By looking into the two-way grammaticalization process behind the various construals of linkers, we have revealed the origin and nature of modification and complementation from a typological point of view. Although languages may differ in their morpho-syntactic makeups, the basic ingredients are always there for associating forms with meanings. Furthermore, the cartographic analysis presented above fits well into the Neo-Davidsonian semantics of adjunct and complement association as laid out in Tsai and Chang (2003). As a result, our findings, though far from conclusive, do provide a plausible hypothesis of the genesis of complex and compound sentences in general.
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