

Coordination, coherence and A’ingae clause linkage*

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Abstract This paper examines a particular type of clause linkage (‘bridging’) in A’ingae, an endangered isolate spoken in Amazonian Ecuador and Colombia. We propose a formal characterization of its meaning (to our knowledge the first formal account for any language) that relies crucially on two SDRT coherence relations: NARRATION and BACKGROUND. We motivate this characterization with textual data and elicited data from context-relative felicity judgments, and propose to derive it from independently observable facts about prosody, coordination, and anaphora in the language.

Keywords: anaphora, Cofán, coherence, coordination, discourse topic, switch reference

1 Introduction

Presumably all languages allow certain kinds of repetition, including especially for emphasis. However, a sizable minority of the world’s languages (esp. those in Amazonia, Papua New Guinea, and the Austronesian family) display a specific form of repetition that recent typological work by Guérin & Aiton (2019) has called ‘bridging’ (no relation to definite associative anaphora). Formally, bridging constructions, as in (1), involve a sequence of three clauses in the following order: REFERENCE CLAUSE (R), a fully finite main clause, nearly always declarative; BRIDGING CLAUSE (B), a subordinate clause which repeats and/or summarizes R; and CONTINUATION CLAUSE (C), a main clause which forms a sentence (or other complex unit) with B to the exclusion of R.¹

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¹ In addition to the Leipzig conventions, the following glossing abbreviations are used: ADD ‘additive’, ANA ‘anaphoric’, AM ‘associated motion’, ATTR ‘attributive’, AUG ‘augmentative’, CMP

- (1) *Kinikhuma chathûje, kinikhuma chathûpatsû gafama utsian.*

[kinikhu=ma chathû-je]_R [[Kinihku=ma chathû-pa]_B=tsû gafa=ma
 tree=ACC cut-IPFV tree=ACC cut-SS=3 goggle-ACC
 utsian]_C
 put.on

‘He cuts trees. Having cut trees, he puts on goggles.’

For clarity’s sake, we will use overly literal English translations throughout. Simpler translations with *and*, *then*, *after*, or *next* are arguably more natural than the repeated clause. In terms of meaning, (Guérin & Aiton 2019: 3, 26) characterize bridging’s function as “to add structure and cohesion”, backgrounding **R**’s content and foregrounding **C**, highlighting “important turning points, or new events on the main event line”, and expressing “a semantic relation between discourse segments, typically, expressing sequentiality”. While giving some sense of the pragmatic contribution of bridging, these descriptions are arguably lacking in precision (e.g. they do not clearly differentiate between bridging and other sequences of matrix clauses with no bridging), as well as compositionality, in the sense that they assign a single function to the bridging construction as a whole rather than to its specific component parts. Previous descriptive literature on the construction—also known as tail-head linkage, head-tail linkage, or recapitulation clauses among other names—shows similar limitations.

This paper presents a case study of bridging in A’ingae (ISO: con), an isolate with ≈1,500 speakers in Amazonian Ecuador and Colombia. We propose a formal characterization of A’ingae bridging (to our knowledge the first formal account of bridging) that relies crucially on two coherence relations familiar from Segmented Discourse Representation Theory: NARRATION and BACKGROUND (see, e.g. Asher & Lascarides 2003). We motivate this characterization with textual data and (unlike most prior work on bridging) elicited data from context-relative felicity judgments (see Matthewson 2004). We propose to derive the characterization from independently observable facts about prosody, coordination, and anaphora in the language.

The paper proceeds as follows: §2 presents background on A’ingae, its speakers, and grammar; §3 introduces the formal and semantic properties of bridging; §4 develops a compositional account of A’ingae bridging, capturing coherence-related constraints on its use; §5 briefly explores coherence in related constructions and then concludes.

‘comparative’, CT ‘contrastive topic’, DS ‘different subject’, HUM ‘human’, MVM ‘movement-cum-manner’, PEJ ‘pejorative’, PLS ‘plural subject’, PRO ‘independent pronoun’, PROSP ‘prospective’, REP ‘reportative’, SBRD ‘subordinator’, SS ‘same subject’, VER ‘veridical’.

2 Background on A'ingae, its speakers and grammar

2.1 A'i speaker communities

A'ingae (ISO: con) is an isolate spoken by $\approx 1,500$ speakers at the interface between the Andes and the Amazon in what is now Northeastern Ecuador and Southern Colombia. Here, we use the autonyms A'ingae for the language and A'i for the people. The exonym Cofán (alternatively, Kofán) is of unknown origin, but is also commonly used including at times by the A'i themselves. The language is heavily endangered in Colombia, less so in Ecuador where still robustly learned by children in all communities.

The A'i are traditionally hunter-gatherers, and while many still are, this way of life (along with their territory) is increasingly threatened by extractive industry such as oil and mining and colonization by people from other regions facilitated by the roads and other infrastructure built in part to support such industries.

2.2 A'ingae grammar background

In terms of its grammar, A'ingae is for the most part a fairly typical SOV language. It is consistently head-final and predominantly dependent marking, including the use of case clitics on nominals in a Nominative-Accusative alignment. Morphologically, A'ingae is agglutinative with lots of suffixes and enclitics, especially on verbs.²

Of particular relevance here is the marking of subjects and other arguments. A'ingae freely allows 'pro-drop' for subjects, objects, and other arguments and so these other mechanisms along with world knowledge play key roles in linking arguments. A'ingae makes use of three argument-indexing mechanisms illustrated in (2): ① case clitics on nominals (the unmarked nominative case is unmarked, while other cases are overt); number agreement on predicates (the plural subject marker -'fa); and ③ second position clitics in matrix clauses that indexing the person of the subject:

(2) *Junguesûmatsû tsunjen'fa turistandekhûja?*

	3		2		1	
Junguesû=ma=tsû	└─┘	tsun-jen-	└─┘	'fa	turista-ndekhû=	└─┘
what=ACC=3		do-IPFV-PLS		tourist-HUM.PL=NOM=CT		=ja

'What do the tourists do?'

Subordinate clauses—including B clauses in bridging—are formally distinguishable from matrix clauses in several ways, see Table 1 below. First, whereas matrix

² See Fischer & Hengeveld forthcoming and references therein for a more detailed grammatical description.

	Subordinate	Matrix
Word order	Rigidly V-final	Flexible
2nd position subject clitics?	No	Yes
Assertive/Veridical suffix -'ya?	No	Yes

Table 1 Properties of subordinate vs. matrix clauses

clauses have flexible word order driven by prosodic and/or information-structural factors, subordinate clauses are rigidly verb-final and very typically SO(Adv)V. Second, second position person clitics are only possible in matrix clauses. Third, while most verbal morphology is possible in subordinate clauses, certain illocutionary and other higher verbal morphology such as the assertive/veridical suffix -'ya is limited to matrix clauses.

3 Properties of A'ingae bridging

In this section, we provide a detailed description of bridging linkage in A'ingae: §3.1 examines the formal properties of bridging, focusing primarily on the properties of B clause; §3.2 establishes the main semantic/pragmatic properties of the construction, arguing that bridging sequences are constrained in ways not shared by other sequences of clauses.

3.1 Formal properties of A'ingae bridging

Recall that, building on Guérin & Aiton (2019), we described bridging as being comprised of a sequence of three clauses: (R)eference, (B)ridging, and (C)ontinuation clauses. There are two general properties of bridging worth noting, both of which appear to be typical of the construction cross-linguistically (though likely not universal).

First, B clauses are introduced by subordinators that exhibit switch-reference morphology, distinguishing whether the subject of the B clause is the identical, (3a), or non-identical, (3b), to that of the C clause, to which it attaches. The switch-reference in A'ingae is relatively simple, consisting of two main morphemes: same subject -*pa* (allomorph -*mba* following nasal vowels) and different subject -*si*. As described in detail by AnderBois, Altshuler & Silva (in prep), these switch-reference morphemes are also found in clause-chaining (a type of low clausal coordination) as well as in causal and temporal adverbial clauses (cf. Fischer 2007 for an alternate perspective). As for the B clause itself, we follow arguments by AnderBois et al. (in prep) and take B clauses to be clausal adjuncts, patterning together with other SR

adjuncts.

- (3) a. *Bûthuïn japa shagatunga ka'ni. Ka'nimba ja tsûtupani.*
 [bûthu-in ja-pa shagatu-nga ka'ni]_R [[Ka'ni-mba]_B ja tsûtupa=ni]_C
 run-MVM go-SS cedar=DAT enter enter-SS go end=LOC
 'He ran and entered a cedar tree. Entering it, he went to the tip-top.'
 (Borman 1977: 295)
- b. ... *a'i khûtsû'ya khûtsûsite jipa kukefa'u sù'ya: ...*
 [a'i khûtsû-'ya]_R [[khûtsû-si]_B=te ji-pa kuke-fa'u sù-'ya]_C.
 person stand-VER stand-DS=REP come-SS hare-PEJ.ACC say-VER
 '... a person stood there, as they stood, the hare came and said:'
 20170804_Kuke_Chiste_FACQ: 20-22

Second, in contrast to other uses of switch reference in A'ingae, B clauses in bridging are prosodically distinct in two ways. They are deaccented, similar to what Krifka & Levina (2019) have shown for bridging in Daakie (ISO-639-3: PTV). While little is known about deaccenting in A'ingae, we assume that this is due to the fact that B clauses at least typically encode information that is given and indeed previously mentioned in the R clause. In addition, though, the R and C clause in bridging are more tightly integrated than are other sequences of finite clauses elsewhere in the language.

While their prosody awaits future investigation, similar tight prosody has been widely found cross-linguistically (cf. Guérin & Aiton 2019 and references therein) and may even be universal. In addition to this cross-linguistic plausibility, speakers of A'ingae report the orthographic intuition that R and C comprise two separate sentences, yet should be separated by a comma rather than a period.

Syntactically, we take this prosody to be a reflex of asyndetic coordination of R and C. Independent support for this claim comes from A'ingae DPs, which as illustrated in (4), use coordination signalled only by prosody to convey a 'tight' or 'natural' semantic connection (as opposed to the overt coordinator *tuya'kaen*, which has no such semantic effect):

- (4) *Tsunsî ña asi'thaen'chuta'tsû tayupija tsa'kaen yuku yaje kû'ipa kansepa tsû tayupi'sû a'i ja kinsetshi'fa*
 tsun-si ña asi'thaen-'chu=ta='tsû tayupi=ja tsa-'ka-en [yuku
 do-DS 1.SG think-SBRD=TOP=3 long.ago=CT ANA-CMP-ADV yoco
 yaje] kû'i-pa kanse-pa=tsû tayupi-'sû a'i ja
 ayahuasca drink-SS live-SS=3 long.ago-ATTR person go
 kinse-tshi-'fa
 health-ADJ-PLS

‘Then, I wonder, long time ago, because they drink [yuku and yaje] (two culturally important traditional beverages), they were healthier.’

[20170804_yaje_house_project_FACQ: 30](#)

Having reviewed two key properties that hold of all bridging (switch reference and distinctive prosody/asyndetic coordination), we turn now to look at variation within the construction, specifically within the B clause. Guérin & Aiton (2019)’s cross-linguistic work distinguishes three subtypes of bridging defined by the form of the B clause. As seen in (5), A’ingae has examples fitting each of these descriptions:

- (5) a. **Recapitulative:** B repeats part or all of R, often just the main verb.
... kueje’fa khutsiañaña, kueje’nga khûtsiansi tsaja aceite yaya’pave
daya’ya.
 [kueje’fa khûtsi-a-ña-ña]_R [[kueje=’nga khûtsi-an=si]_B tsa=ja
 sun stand-CAUS-IRR-VER sun=DAT stand-CAUS=DS ANA=CT
 aceite yaya’pa=ve da-ya-’ya]_C
 oil oil=ACC2 become-IRR-VER
 ‘He set it in the sun, after he set it in the sun, it became a natural oil’
[20170806_Charapa _proyecto_BRCA:12-14](#)
- b. **Summary:** B consists of an anaphoric pro-verb like *tsun* ‘do so’.
Ingi ka’nifani dyai’fa, tsunsi ña’khe dyai
 [Ingi ka’ni-fa=ni dyai-’fa]_R [[tsun-si]_B ña=’khe dyai]_C
 PRO.1PL enter-PLS=LOC sit-PLS do-DS PRO.1SG=ADD sit
 ‘When we entered, they sat down, them having sat down, I sat down too.’
- c. **Mixed:** B repeats the main verb of R along with an anaphoric adverbial.
Josetsû fi’thi thesima, tsa’kaen fi’thipatsû Jose tise tsa’uni anga.
 [Jose tsû fi’thi thesi=ma]_R, [[Tsa-’ka-en fi’thi-pa]_B=tsû Jose
 Jose 3 kill jaguar=ACC ANA-CMP-ADV kill-SS=3 Jose
 tise tsa’u=ni anga]_C
 PRO.3SG house=LOC carry
 ‘José killed the jaguar, having so killed it, José carried it to his house.’

While Guérin & Aiton (2019) appear to regard these as distinct, discrete constructions, we assume here, following AnderBois et al. (in prep), that the B clause is interpreted compositionally. That is to say, we do not take there to be any syntactic constraints or other special properties of B clauses above and beyond those common to all subordinate clause and the coherence-based constraints we propose here. B clauses may be comprised of any mix of anaphoric and lexical resources available

in the language (together with deaccenting), rather than a grammar which specifies types such as 'summary' and 'recapitulative'.³

Semantically, Aiton (2019) claims for Eibela (AIL, Papua New Guinea) that summary bridging tends to target 'paragraphs' while recapitulative bridging targets 'episodes'. We observe a similar tendency in A'ingae in (6)-(7). Whereas the anaphoric pro-verb in (6a) can refer back to a complex sequence of events described by the clauses in (6b), the deaccented lexical verb in (7) appears to refer back to the event of the single clause preceding it.

(6) **Anaphoric tsun 'do so' can refer to complex DU**

a. *Me'in ñanda tisûyi ji'chuma ke yayasû iya tisûyi ña kanjensitsû iya vaningae*

me'in ña=nda tisû=yi ji-'chu=ma ke yaya-sû
no 1.SG=TOP REFL=EXCL come-SBRD=ACC 2.SG dad-ATTR
i-ya tisû=yi ña kanjen-si=tsû i-ya va=ningae
bring-VER REFL=EXCL 1.SG live-DS=3 bring-VER PROX=ALL

'no, I came alone, your father brought me because I was alone.'

b. *Tsumbangi tse kansepa vanima athe mingae sûya tse vani kanjemba Jhonnykhunga daya*

tsu-mba=ngi tse kanse-pa va=ni=ma athe mingae sû-ya
do=SS=1 ANA.LOC live-SS PROX=LOC=ACC see how say-VER
tse va=ni kanje-mba Jhonny-khu-'u=nga da-ya
ANA.LOC PROX=LOC live-SS Jhonny-AUG-AUG=DAT become-VER

'So I came here and found, how do you say, I met Jhonny.'

[20170801_Autobiography_ARLQ: 182-184](#)

(7) **Deaccented lexical verb refers to simple DU in preceding clause**

Tsampini japa yuku'ma chathûnga'ya, chathûngapa jiya.

tsampi=ni ja-pa yuku=ma chathû-nga-'ya **chathû-nga**-pa ji-ya
forest=LOC go-SS yoco=ACC cut-AM-VER cut-AM-SS come-VER

'I went to the forest and cut him some yoco. Having cut yoco, I came back.'

[20170807_autobiography_JWC: 421-422](#)

Rather than being a grammatically specified property of particular bridging constructions, we regard this tendency as emergent. In particular, following Asher (1993) and others, it is well-established that propositional anaphors in general have

³ Beyond the more extensive arguments by AnderBois et al. (in prep), one very clear piece of evidence is the existence of (admittedly somewhat atypical) examples like (26) in which non-repeated yet readily inferable lexical material may be present.

the potential to refer to complex discourse units. For A'ingae specifically, this property has been discussed in recent works by [Morvillo & AnderBois \(to appear\)](#) for *tsa* ANA and [Zheng \(2022\)](#) for anaphoric expressions more broadly. Beyond this, the formal framework we adopt in §4, SDRT, assumes overarching principles of discourse coherence that help determine which complex discourse units are available for anaphoric reference at any given point in discourse.

To summarize, in this section we have presented the formal properties of A'ingae bridging and argued that they are compositionally constructed from ordinary lexical/anaphoric elements found elsewhere, rather than a construction-specific 'bridging' mechanism.

3.2 Semantic/rhetorical constraints on bridging

As noted in the introduction, previous characterizations for other languages (see, e.g. [Guérin & Aiton 2019](#)) discuss a tendency for iconically ordered temporal sequentiality. That is to say the event described in the R clause precedes the event described in the C clause. Such descriptions, however, are too permissive for A'ingae in several respects. First, iconic ordering is a requirement, rather than being a mere tendency. For example, speakers judge an example like (8) infelicitous in the (more plausible) scenario in which the subject put on safety goggles before cutting the tree. The use of the bridging linkage forces the otherwise less natural interpretation that the safety goggles were put on after cutting the tree.⁴

(8) *Kinikhuma chathûje, kinikhuma chathûpatsû gafama utsian.*

[kinikhu=ma chathû-je]_R. [[Kinihku=ma chathû-pa]_B=tsû gafa=ma
tree=ACC cut-IPFV tree=ACC cut-SS=3 goggle-ACC
utsian]_C
put.on

'He cuts trees. Having cut trees, he puts on goggles.'

More strikingly, bridging imposes a further constraint above and beyond temporal sequentiality: direct causal connections between the events described in R and C are not possible. Speakers judge sequences infelicitous where there is a clear direct causal connection between the events described by R and C, as in (9).

⁴ One further restriction implicit in prior descriptions is that the C event must follow the R event fairly closely. That is to say that the event C describes cannot simply occur at just any time following R, but rather at a time following it relatively closely (cf. [Partee \(1984\)](#)'s time 'just after'). The formal account below will make this somewhat vague description a bit more precise.

- (9) #[Jose tsû bûthujangi]_R, [[tsa-'ka-en uya-si]_B shavu='khe uya]_C
 Jose 3 jump ANA-CMP-ADV move-DS canoe=ADD move

'Jose jumped, him having moved like that, the canoe moved too.'

Scenario A: #José jumps and his jumping shakes the canoe.

Scenario B: José jumps and then the canoe shakes (e.g. from a wave).

Indirect causal sequences can be acceptable in bridging, but clear cases of direct causal inferences involving R and C are not attested and are judged infelicitous in elicitations.

Crucially, both of these constraints distinguish bridging from ordinary sequences of finite clauses. Thinking about English for a moment, we observe that there is a mere tendency for iconic ordering, which has often been thought of in terms of pragmatic reasoning (e.g., Gricean Manner implicatures; see also Dowty 1986, Lascarides & Asher 1993). Much the same can be said for clausal coordination, though see §4 for further discussion.

In contrast to bridging, sequences of matrix clauses in A'ingae appear to pattern similar to what we find in English. While there is a tendency for iconic ordering and we may at times draw such an inference, sequences of matrix clauses do not require such ordering (nor do clausal coordinations with *tuya-'ka-en* still-CMP-ADV 'and'). For example, (10) is felicitous and truthful in contexts where the events occur in any order.

- (10) **Context:** A response to question (2): "What do the tourists do when they visit?"

Simbaje'fa, tsui'je'fa tsampinga, isian'jen'fa isian'chuve fi'thije'fa

Simba-je-'fa, tsui-'je-'fa tsampi=nga, isian-'jen-'fa
 fish-IPFV-PLS walk-IPFV-PLS forest=DAT photo-IPFV-PLS
 isian-'chu=ve fi'thi-je-'fa.
 photo-SBRD=ACC2 hunt-IPFV-PLS

'They fish, walk in the forest, take photos, and hunt.'

Similarly, we find that sequences of finite clauses in A'ingae readily allow for a direct causal interpretation. In (11), for example, the anger is caused by getting stuck in the rabbit's hole rather than some independent source or more indirect causal chain.

- (11) **Context:** A traditional story in which the hare dug a hole and the fox fell in, angering the fox.

Tsefa'e indiya tse'thinga. Ti'tshe panduja iyikhayeya tsa kukefan'an

tse-fa-'e indi-ya tse-'thi=nga ti'tshe pandu=ja
 ANA.LOC-PEJ-ADV stuck-VER ANA.LOC-LOC=DAT more fox=CT
 iyikhaye-ya tsa kuke-fan'an
 anger-VER ANA rabbit-PEJ.ACC

'He got stuck in that damn place!' The fox got more angry at the hare.

[20170804_Kuke_Chiste_FACQ: 152](#)

To summarize, we have found in this section that in contrast to non-bridging sequences of finite clauses in A'ingae, bridging requires the event described by R (and by extension B) to precede that described by C and also to not have directly caused it.

4 How to build a bridge

Recall from above that we have schematized bridging as in (12). A compositional account of bridging will therefore have two main components: a semantics for asyndetic coordination (linking R and C) and a semantics for adjoined switch reference clauses (linking B and C).

- (12) [REFERENCE]_R. [[BRIDGE]_B CONTINUATION]_C

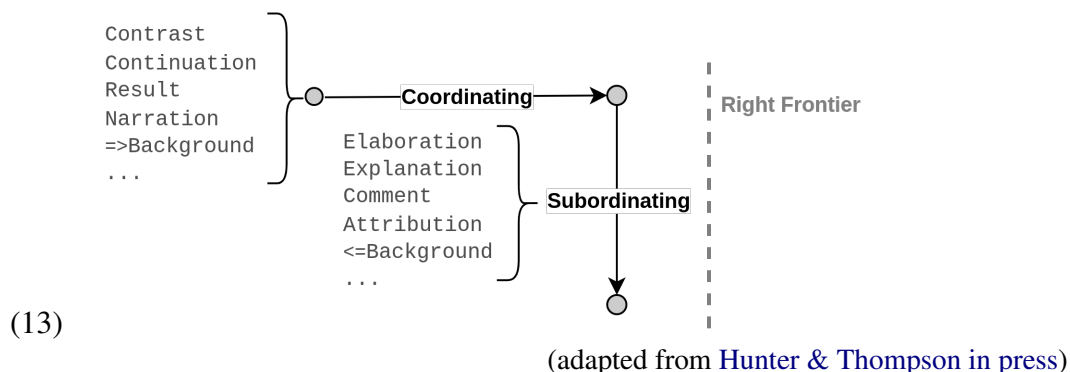
We begin with the contribution of asyndetic coordination in §4.1-4.2, before turning to the adjoined B clause itself in §4.3.

4.1 Unpacking the NARRATION relation

A longstanding debate in the study of conjunction concerns the question of causal, temporal, and other inference that arise. Can they be derived in a purely pragmatic fashion a la Grice (1975)? Are they fully derivable from other kinds of general pragmatic principles such as discourse coherence? Or are they at least partially rooted in the semantics of conjunction (presumably together with some sort of pragmatic reasoning)?

For asyndetic coordination in A'ingae, we follow this latter approach, building on Gómez Txurruka (2003)'s proposal for English *and*, couched in an early version of SDRT proposed by Asher (1993). Building on empirical observations by Bar-Lev & Palacas (1980), Gómez Txurruka (2003) argues that English *and* is a

marker of discourse coordination, i.e., it requires a coordinating coherence relation, schematized informally in (13).⁵



Comparing clausal coordinations with *and* to sequences of finite clauses, then, we see that different coherence-based inferences arise. In particular, *and* in (14b) forces coordinating coherence relations to be inferred in an otherwise subordinating coherence context; *and* in (15b) triggers infelicity because the subordinating coherence context is maintained.

- (14) a. I had a great meal last week. I went to Burger King. (ELABORATION)
 b. I had a great meal last week and I went to Burger King. (NARRATION, CONTRAST)
- (15) a. Emar bought many things at the fish market in Groningen. For example, he bought smoked eel. (ELABORATION)
 b. ??Emar bought many things at the fish market in Groningen and, for example, he bought smoked eel. (ELABORATION)

To capture these and related empirical observations, Gómez Txurruka develops an analysis in which *and* semantically requires that its conjuncts contribute to a common (discourse) topic. She further assumes, following Asher (1993), that more generally, coordinating coherence relations require common topics, while subordinating ones do not.

However, more recent versions of SDRT proposed by, e.g. Asher & Lascarides 2003; Asher 2004, argue that NARRATION but not RESULT requires a common topic (see also Kehler 2002: Ch. 5). For English *and*, the account therefore fails since—as Gómez Txurruka (2003) herself argues—*and* is compatible with RESULT, as in (16)

⁵ A rough characterization of coordinating vs. subordinating coherence relations is that the former change the scene, hence moving forward the narrative (schematized as moving ‘rightwards’), while the latter detail the scene, hence deepening the narrative (schematized as moving ‘downwards’). For more discussion, see Asher & Vieu 2005.

(16) Wonder Woman pushed the villain and the villain fell. (**RESULT**)

While Txurruka’s analysis is inadequate for *and*, we claim that it is precisely what the asyndetic coordination in A’ingae bridging constructions encodes.⁶

Fleshing things out a bit more formally, we can spell out the relationship between NARRATION and discourse topics as in (17) and (18), following Asher & Lascarides (2003).

(17) If $\text{NARRATION}(\alpha, \beta)$ then $\exists \pi. \text{ELABORATION}([\alpha, \beta], \pi)$, where π is a topic for $[\alpha, \beta]$.

(18) Requirement on the topical event e_π :

e_π
part-of(e_α, e_π)
part-of(e_β, e_π)
$(K_\alpha \sqcap K_\beta)^{e_\pi}$
post(e_α) \approx pre(e_β)

(17) says that whenever NARRATION holds between two discourse segments α and β , there must be discourse topic π that α and β elaborate upon. (18) makes this elaboration precise in event-theoretic terms: the events described by α and β (i.e. e_α and e_β) must be parts of an event described by the π (i.e. e_π). (18) also imposes the condition ‘ $(K_\alpha \sqcap K_\beta)^{e_\pi}$ ’, which is the DRS that records ‘the common content’ of the DRSs of α and β , namely K_α and K_β respectively, with respect to what they contribute to the topical event e_π .⁷ Finally, the condition ‘post(e_α) \approx pre(e_β)’ says that the post-state of the event represented in a DRS α constitutes the pre-state of the event described by the DRS β .⁸

4.2 Inferring NARRATION from world knowledge

Having fleshed out the relationship between discourse topics and NARRATION, this subsection considers how this relationship plays out in A’ingae bridging. In what

⁶ Notably, the overt coordinator in A’ingae, *tuya’kaen* (itself morphologically complex at least historically: *tuya* ‘still’ + *-’kan* CMP + *-e* ADV) does not seem to share this restriction, though we leave this to future work to examine in detail. More broadly, we speculate that Gómez Txurruka (2003)’s analysis might apply to cases of ‘tight’ coordination in languages distinguishing between ‘tight’ or ‘natural’ coordination and ‘loose’ or ‘accidental’ coordination (for further discussion, see e.g. Haiman (1985: 111-124), Haspelmath (2007, 2008), Weisser (2016)).

⁷ Asher & Lascarides (2003) admit that this is ‘a very difficult operation to define in practice’. For more discussion of this operation, see Altshuler & Schlöder (2019); Schlöder & Altshuler (to appear).

⁸ We note that Asher & Lascarides (2003) frame this constraint in terms spatiotemporal contiguity. We don’t say more about this constraint here, but direct the reader to Truswell (2019), who shows that while spatial contiguity between the events in a narrative is common in human experience, it does not seem to be a necessary condition.

follows, we will claim that in such constructions, asyndetic coordination *semantically* requires a common topic. Before proceeding to this claim, however, we first consider sequences of finite clauses with no coordination, where NARRATION can be—but crucially need not be— inferred *pragmatically*.

To do this, we first consider a sequence of finite clauses in (19). In contrast to bridging, such sequences formally lack both the distinctive prosody noted above and the recapitulating/summarizing B clause. Similar to sequences of sentences in English, then, we have seen in §3.2 that NARRATION is a possible relation to infer in such cases, but that other relations such as RESULT (11), PARALLEL (10), and ELABORATION are possible too. Here we consider the case in which NARRATION is naturally inferred, spelling out the assumptions that allow for this construal.

(19) *Ja tsû lago agrioningae. Indi tsû busma.*

Ja tsû lago agrio=ningae. Indi tsû busma.
go 3 lago agrio=ALL grab 3 bus=ACC

‘I went to Lago Agrio. I caught a bus.’

As in the English gloss, the interpretation does not *semantically* specify how the two DUs are related:

(20) Semantic interpretation for (19):

$$K_1 = \begin{array}{|l|} \hline e_1, x, z \\ \hline \text{go}(e_1) \\ \text{agent}(e_1, x) \\ \text{Lago Agrio}(z) \\ \text{goal}(e_1, z) \\ \hline \end{array} \quad K_2 = \begin{array}{|l|} \hline e_2, x, y \\ \hline \text{take}(e_2) \\ \text{bus}(y) \\ \text{agent}(e_2, x) \\ \text{theme}(e_2, y) \\ \hline \end{array} \quad (K_1 \sqcap K_2)^{e_\pi} = \begin{array}{|l|} \hline e_\pi, x \\ \hline \text{agent}(e_\pi, x) \\ \hline \end{array}$$

In order to interpret NARRATION here, world knowledge must support the conditions listed out in §4.1 for a common topical event and appropriate temporal sequencing. The first condition is met if the interpreter can establish a common topical event e_π that is comprised of e_1 and e_2 . In this example, e_π can be readily interpreted as a trip by the speaker to a salient location (e.g. the capital city of Quito) via Lago Agrio. The temporal sequencing condition is met if the post state of e_1 constituted the pre-state of e_2 : $\text{post}(e_1) \approx \text{pre}(e_2)$. In this example, the post-state of e_1 , going to Lago Agrio, can be readily interpreted as the pre-state of catching the bus given world knowledge that buses (to Quito) depart from Lago Agrio. Given these assumptions, then, we arrive at the following interpretation:

(21) Interpretation of (19) as NARRATION:

$K_1 =$	$K_2 =$
e_1, x, z	e_2, x, y
$go(e_1)$	$take(e_2)$
$agent(e_1, x)$	$bus(y)$
$Lago\ Agrio(z)$	$agent(e_2, x)$
$goal(e_1, z)$	$theme(e_2, y)$
NARRATION(K_1, K_2)	

Crucially, however, given a different context/world knowledge, we could instead infer other relations between K_1 and K_2 such as ELABORATION(K_1, K_2). If no other location such as Quito is salient, a topical event e_π may not be readily recoverable. For example, if the sequence in (19) were uttered in response to a question like ‘Did you go to Lago Agrio?’, a larger topical event would not be salient and we therefore would likely interpret the second sentence ‘I caught a bus’ as an elaboration on the event described by the first sentence, i.e. as giving more detail on the trip to Lago Agrio.

In A’ingae bridging, on the other hand, we have claimed that asyndetic coordination hard wires a requirement for this common topic, π , upon which R and C elaborate:

(22) *Ja tsû lago agrioningae, japatsû indi busma.*

Ja tsû lago agrioningae, japatsû indi busma.
go 3 lago agrio=ALL go-SS=3 grab bus=ACC

‘I went to Lago Agrio. Having gone to Lago Agrio, I caught a bus.’

By hard wiring a requirement for a common discourse topic, asyndetic coordination ensures that NARRATION emerges. This claim is based on independent claims in the SDRT literature, namely that (i) subordinating relations generally lack a common discourse topic⁹, (ii) the same goes for the coordinating relation RESULT (as we already noted above), and (iii) other so-called ‘structural’ coordinating relations, namely PARALLEL and CONTRAST, require a common theme, rather than a common discourse topic (for more discussion, see [Schlöder & Lascarides \(2020\)](#) and [Altshuler & Truswell \(2022: §6.5\)](#)).¹⁰ For example, (22) is infelicitous in contexts

⁹ The lone exception to this generalization may be BACKGROUND, which we discuss in the next subsection.

¹⁰ According to [Asher & Lascarides \(2003\)](#), CONTINUATION, like NARRATION, encodes a common discourse topic, though it does not encode the $\text{post}(e_\alpha) \approx \text{pre}(e_\beta)$ condition. Further fieldwork is necessary to test whether CONTINUATION is compatible with bridging. Our initial impression, based

that preclude a larger topical event e_π , such as a response to a question like “Did you get/go to Lago?”. With the asyndetic coordination indirectly enforcing NARRATION, the B clause itself then serves to help the listener determine how exactly to meet this requirement, by spelling out the precise relevant post-state for the temporal sequencing condition as described in §4.3.

4.3 Bridging clauses specify the necessary conditions for NARRATION

We have thus far argued that asyndetic coordination contributes a requirement for a common topic for R and C to the logical form. In this section, we turn to the contribution of the clausal adjunct B itself.

Before proceeding, one quick caveat is in order. Switch reference adjunct clauses outside of this construction allow also for causal interpretations, (27), which we return to briefly below. They therefore must have a broader semantics, one that is compatible with not just with NARRATION, but also with other coordinating coherence relations such as RESULT. Here, we focus on the sole interpretation for these that is compatible with the aforementioned NARRATION requirement, leaving a more general account of switch reference adjuncts to future work. What matters here is that the semantics of the clausal adjuncts is constrained enough that it readily allows the interpreter to infer the relevant information.

With this caveat in mind, the claim we make here is that the B clauses in bridging help to produce a ‘better’ NARRATION by making salient and precise the BACKGROUND for C. While this may in principle seem redundant or unnecessary in light of the example above, we will see below that there are in fact several ways in which this is useful in helping steer the listener to the intended interpretation.

According to Asher & Lascarides (2003), BACKGROUND does not contribute a common topic to logical form.¹¹ Here, we focus on a particular kind of BACKGROUND, \Rightarrow BACKGROUND, whose first argument is a stative description and the second argument is an eventive description:

on the infelicity of a bridging counterpart to (10), is that CONTINUATION is incompatible. If that’s right, we predict independent factors, possibly the temporal semantics of the B clause and/or the R clause, to rule out CONTINUATION.

¹¹ It does, however, contribute a different kind of topic “whose content is constructed by *repeating* (rather than summarising) the contents of K_{π_1} and K_{π_2} . This topic is related to the background segment with a relation called *Foreground–Background Pair* or *FBP* for short (see Asher & Lascarides (2003: 166) for more discussion). Since what we are concerned with are common topics, we don’t discuss the FBP further. For a more recent approach to BACKGROUND, including how it interacts with presupposition, see Asher, Prévot & Vieu (2007).

(23) **Semantic contribution of \Rightarrow BACKGROUND:** \Rightarrow BACKGROUND(α, β) contributes the following condition:

e_π
$\text{overlap}(s_\alpha, e_\beta)$
$e_\pi = e_\beta$

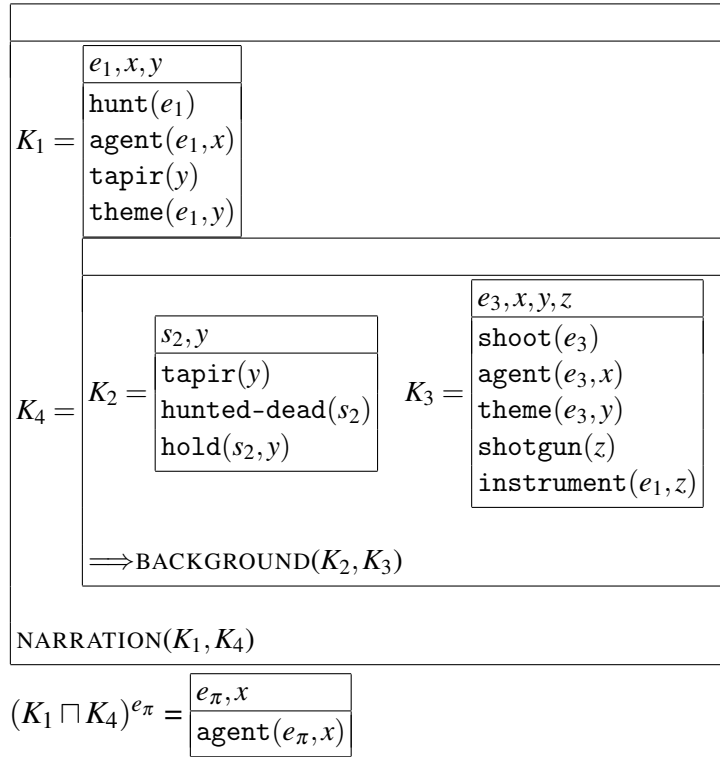
Putting together the two conditions we have proposed – NARRATION(R,C) from asyndetic coordination and \Rightarrow BACKGROUND(B,C) from the clausal adjunct – we arrive at the following picture:

(24) *Panzatsû khuvima, panzapatsû pu'taen putae'ngukhû.*

[Panza=tsû khuvi=ma]_R [[panza-pa]_B=tsû pu'taen putae'ngu=khû]_C
 hunt=3 tapir=ACC hunt-SS=3 shoot shotgun=INS

‘He hunted the tapir, having hunted (it), he shot it with a shotgun.’

(25) Interpretation for bridging example, (24):



In recapitulative cases like (24), the B clause enforces \Rightarrow BACKGROUND, making **prominent** the final state of the previously described event required by NARRA-

TION.¹² In this way, a *very good* NARRATION is ensured.¹³

Bridging in these cases, therefore, allows for NARRATION in situations where it may not be naturally inferred otherwise. That is to say, the additional explicitness that the B clause provides allows the listener to infer a transition from one event to the next in a case where this transition may not be obvious, or as Guérin & Aiton (2019: 26) put it informally, “bridging constructions highlight important turning points”. In our account this is so since major turning points are ones where the next event in the narrative sequence is not obvious, with multiple potential directions in principle available. This contrasts with clause-chaining in A'ingae, which also triggers NARRATION, but tends to do so in cases where the sequencing is *a priori* more expected or obvious and so no additional handholding is needed (see AnderBois *et al.* (in prep) for discussion of clause-chaining in A'ingae).

Beyond these recapitulative cases, however, we have also seen in §3 that the B clause can vary widely in its form and relationship to the preceding R clause. Not only do we find straightforward cases like (24) above, but also several kinds of more complex patterns. First off, we find examples like (5b-5c) (especially in ‘summary’ and ‘mixed’ bridging) where the anaphoric B clause may pick up a complex DU, rather the single preceding clause (suitable lexical material presumably may in some cases produce similar effects, e.g. ‘It rained. It thundered too. Having stormed, I cleaned up the down branches.’). Second, we can also find cases where there are implied events between the events described by the R and B clauses (here, the drying of the dishes):

12 At this point, we're unsure about exactly how BACKGROUND is triggered and note three possibilities: (i) the aktionsart and/or interpretation of the material inside the SR clause makes salient the result state (N.B. bare verb roots in isolation receive a perfective-like or non-future interpretation), (ii) the SR morphemes themselves contribute the relevant meaning, (iii) the clausal adjunction structure itself contributes this. We think (ii) is unlikely given that no such meaning is seen with these morphemes in clause-chaining. (i) and (iii) are difficult to disentangle (perhaps similar to English adjunct infinitives and absolute adjuncts). However, we hope that future work can address this by investigating B clauses of different aspectual classes and with different temporal morphology in the B clause. Thanks to Gillian Ramchand and Jessica Rett for discussion.

13 Note that while a coherence relation either holds between discourse units or it doesn't, SDRT commonly holds that the *acceptability* of a given discourse, assigned a particular structure, is a gradient matter. This is especially clear with NARRATION (cf. *?Ava came in. Teia put on her gloves.* vs. *Ava came into the examining room. Dr. Mata put on her gloves*). For a detailed discussion, see Altshuler & Truswell (2022: §6.3.2).

- (26) *Sinte jangipangi kashi apishu'thuma, apishu'thuma san'jambangi anañe ja.*

Sinte jangi-pa=ngi kashi apishu'thu=ma, apishu'thu=ma
 morning arise-SS=1 wash dish=ACC dish=ACC
 san'ja-mba=ngi ana-ñe ja.
 dry-SS=1 sleep-INF go

'I got up and washed dishes, having dried the dishes, I went to sleep.'

Bridging in these sorts of more complex cases, then, serves to make explicit *which* of the available discourse segments is related to C by \Rightarrow BACKGROUND. Since we are operating within the framework of SDRT, we take it that this ability is restricted by general architectural constraints on the attachment of DUs, most notably the Right Frontier constraint (for more discussion, see [Asher & Vieu 2005](#); [Hunter & Thompson in press](#)).

To sum up, we argued that bridging enforces two different coherence requirements: NARRATION(R,C) (from asyndetic coordination) and \Rightarrow BACKGROUND(B,C) (from the clausal adjunct). We then showed how taken together, these constraints lead to bridging being used to help construct *better* NARRATIONS for a variety of reasons depending on world knowledge, the form of the B clause, and the B clause's relationship to that of the R clause.

5 Conclusions

In this paper, we presented an analysis of A'ingae bridging as requiring the coherence relations of NARRATION(R,[B,C]) and \Rightarrow BACKGROUND(B,C). We argued that such a characterization provides a precise account formally capturing key intuitions about the pragmatic function of bridging and crucially distinguishing it from other sequences of juxtaposed clauses.

More broadly, A'ingae SR morphemes appear in only three environments (see [AnderBois et al. \(in prep\)](#) for details). In addition to bridging linkage discussed in detail here, they occur in causal/temporal adjuncts, (27), and in clause chaining, (28).

- (27) *Ñajan ja'ñu si'tsive kañe tsunjen, tû'i jayisi.*

Ña=jan ja'ñu si'tsi=ve ka-ñe tsunjen [tû'i
 PRO.1SG=CT now firewood=ACC2 look-INF PROSP tomorrow
 jayi=si]
 go.PROSP=DS

'I am now going to look for firewood, [because tomorrow you're going to leave].'

[20170731_attembi_ai: 64](#)

(28) *Simba'fapa, tsampinga tsui'fapa, isian'chuve isian'fapa fi'thi'fa.*

Simba-'fa-**pa** tsampi=nga tsui-'fa-**pa** isian-'chu=ve
 fish-PLS-SS forest=DAT hike-PLS-SS take.photo-NMLZ=ACC2
 isian-'fa-**pa** añachu=ma fi'thi-'fa
 take.photo-PLS-SS animal=ACC hunt-PLS

'They fished, walked in the forest, took photos, and (then) hunted.'

One might then wonder what unifies these three environments to the exclusion of other kinds of coordination, adjunction, and other ways of combining clauses that lack SR. While Fischer (2007) has claimed for A'ingae that they share a common syntax, this position has been refuted by AnderBois et al. (in prep) for A'ingae, and works like McKenzie (2015) have argued against such a view cross-linguistically.

Building on the account here, however, an alternative coherence-based generalization appears more promising. We have argued here that bridging linkage requires NARRATION and \Rightarrow BACKGROUND to hold. While detailed work is needed to establish these generalizations definitively, the other cases of switch reference in A'ingae appear to be similarly restricted to particular coherence relations: clause chaining in A'ingae also requires NARRATION, clausal adjunct uses require \Rightarrow BACKGROUND, NARRATION, or RESULT. Moreover, these relations form a natural class in SDRT: they are the *non-structuring coordinating discourse coherence relations* (i.e. not PARALLEL, CONTRAST).

References

- Aiton, Grant. 2019. The form and function of bridging constructions in eibela discourse. In Valérie Guérin (ed.), *Bridging constructions*, 157–184. Language Science Press. doi:[10.5281/zenodo.2563688](https://doi.org/10.5281/zenodo.2563688).
- Altshuler, Daniel & Julian J. Schlöder. 2019. Anaphora and ambiguity in narratives. Lecture notes from ESSLLI 2019, University of Latvia, <http://jjsch.github.io/teaching/esslli2019.html>.
- Altshuler, Daniel & Robert Truswell. 2022. *Coordination and the Syntax-Discourse Interface*. Oxford University Press.
- AnderBois, Scott, Daniel Altshuler & Wilson Silva. in prep. The forms and functions of switch reference in a'ingae. Ms. in preparation for edited volume "Current Studies in Morphosyntax, Semantics, and Pragmatics: A View from the South American Lowlands and Beyond", Guillaume Thomas and María Luisa Zubizarreta eds.
- Asher, Nicholas. 1993. *Reference to abstract objects in discourse*. Kluwer. doi:[10.1007/978-94-011-1715-9](https://doi.org/10.1007/978-94-011-1715-9).

- Asher, Nicholas. 2004. Discourse topic. *Theoretical Linguistics* 30. 163–202. doi:[10.1515/thli.2004.30.2-3.163](https://doi.org/10.1515/thli.2004.30.2-3.163).
- Asher, Nicholas & Alexis Lascarides. 2003. *Logics of conversation*. Cambridge University Press.
- Asher, Nicholas, Laurent Prévot & Laure Vieu. 2007. Setting the background in discourse. *Discours* 1. 1–30. doi:[10.4000/discours.301](https://doi.org/10.4000/discours.301).
- Asher, Nicholas & Laure Vieu. 2005. Subordinating and coordinating discourse relations. *Lingua* 115. 591–610. doi:[10.1016/j.lingua.2003.09.017](https://doi.org/10.1016/j.lingua.2003.09.017).
- Bar-Lev, Zev & Arthur Palacas. 1980. Semantic command over pragmatic priority. *Lingua* 51. 137–146. doi:[10.1016/0024-3841\(80\)90004-2](https://doi.org/10.1016/0024-3841(80)90004-2).
- Borman, M.B. 1977. Cofan paragraph structure and function. In Robert Longacre & Frances Woods (eds.), *Discourse Grammar: studies in indigenous languages of Colombia, Panama, and Ecuador*, vol. 3, 289–338. Summer Institute of Linguistics.
- Dowty, David. 1986. The effects of aspectual class on the temporal structure of discourse: Semantics or pragmatics? *Linguistics and Philosophy* 9. 37–62. <https://rdcu.be/cURzX>.
- Fischer, Rafael. 2007. Clause linkage in Cofán (A’ingae). In Leo Wetzels (ed.), *Language Endangerment and Endangered Languages*, 381–399. CNWS.
- Fischer, Rafael & Kees Hengeveld. forthcoming. A’ingae (Cofán/Kofán). In Patience Epps & Lev Michael (eds.), *Smaller Language Families and Isolates*, vol. 1, Berlin: De Gruyter Mouton.
- Grice, Paul. 1975. Logic and conversation. In P. Cole & J. Morgan (eds.), *Syntax and Semantics 3: Speech Acts*, 64–75. doi:[10.1163/9789004368811_003](https://doi.org/10.1163/9789004368811_003).
- Guérin, Valérie & Grant Aiton. 2019. Bridging constructions in typological perspective. In Valérie Guérin (ed.), *Bridging constructions*, 1–44. Language Science Press. doi:[10.5281/zenodo.2563678](https://doi.org/10.5281/zenodo.2563678).
- Gómez Txurruka, Isabel. 2003. The natural language conjunction *and*. *Linguistics and Philosophy* 26. 255–85. doi:[10.1023/A:1024117423963](https://doi.org/10.1023/A:1024117423963).
- Haiman, John. 1985. *Natural syntax: Iconicity and Erosion*. Cambridge University Press.
- Haspelmath, Martin. 2007. Coordination. In Timothy Shopen (ed.), *Language typology and syntactic description, Vol. II: Complex constructions*, 1–51. Cambridge University Press.
- Haspelmath, Martin. 2008. Frequency vs. iconicity in explaining grammatical asymmetries. *Cognitive Linguistics* 19. 1–33. doi:[10.1515/COG.2008.001](https://doi.org/10.1515/COG.2008.001).
- Hunter, Julie & Kate Thompson. in press. On the role of relations and structure in discourse interpretation. In Daniel Altshuler (ed.), *Linguistics meets Philosophy*, Cambridge University Press.
- Kehler, Andrew. 2002. *Coherence, reference, and the theory of grammar*. CSLI.

- Krifka, Manfred & Ekatarina Levina. 2019. Recapitulative linkage in Daakie (Ambrym, Vanuatu). Presentation at 11th International Austronesian and Papuan Languages and Linguistics Conference (APLL11).
- Lascarides, Alex & Nicholas Asher. 1993. Temporal interpretation, discourse relations, and common sense entailment. *Linguistics and Philosophy* 16. 437–95. doi:[10.1007/BF00986208](https://doi.org/10.1007/BF00986208).
- Matthewson, Lisa. 2004. On the methodology of semantic fieldwork. *International Journal of American Linguistics* 70(4). 369–415. doi:[10.1086/429207](https://doi.org/10.1086/429207).
- McKenzie, Andrew. 2015. A survey of switch-reference in North America. *International Journal of American Linguistics* 81(3). 409–448. doi:[10.1086/681580](https://doi.org/10.1086/681580).
- Morvillo, Sabrina & Scott AnderBois. to appear. The inner workings of contrast: decomposing A'ingae *tsa'ma*. In *Proceedings of SULA 11*, <https://osf.io/t7v5r>.
- Partee, Barbara Hall. 1984. Nominal and temporal anaphora. *Linguistics and Philosophy* 7. 243–286. doi:[10.1007/BF00627707](https://doi.org/10.1007/BF00627707).
- Schlöder, Julian J. & Daniel Altshuler. to appear. Super pragmatics of (linguistic-)pictorial discourse. *Linguistics and Philosophy*.
- Schlöder, Julian J. & Alex Lascarides. 2020. Understanding focus: Pitch, placement, and coherence. *Semantics & Pragmatics* 13. 1–48. doi:[10.3765/sp.13.1](https://doi.org/10.3765/sp.13.1).
- Truswell, Robert. 2019. Event composition and event individuation. In Robert Truswell (ed.), *The Oxford Handbook of Event Structure*, 90–122. Oxford: Oxford University Press. doi:[10.1093/oxfordhb/9780199685318.013.5](https://doi.org/10.1093/oxfordhb/9780199685318.013.5).
- Weisser, Philipp. 2016. Is there switch-reference marking in coordinated clauses? In Rik van Gijn & Jeremy Hammond (eds.), *Switch Reference 2.0*, 93–114. John Benjamins. doi:[10.1075/tsl.114.03wei](https://doi.org/10.1075/tsl.114.03wei).
- Zheng, Yuqi Holly. 2022. Anaphoric expressions in A'ingae. BA Thesis, Brown University.

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