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Cross-linguistic variation in the lexical semantics of conjunction*

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Abstract

A longstanding debate about conjunction concerns so-called 'asymmetric' interpretations with additional causal or temporal inferences. Some theories posit a semantic component of conjunction as part of their explanation (e.g. Gómez Txurruka 2003). In this paper, we explore an unstated prediction of such accounts: that the specific semantics of conjunction might vary **(i)** across languages, and **(ii)** across conjunction strategies within a language. Drawing on data from A'ingae (an indigenous language of Ecuador) and Gizey (an indigenous language of Cameroon and Chad) respectively, we show that both predictions are met, arguing that such semantic variation is constrained in ways anticipated by theories of discourse coherence such as SDRT (Asher & Lascarides 2003).

Keywords: A'ingae, Cofán, coherence, discourse topic, Gizey, parallelism, semantic typology

1 Introduction

When one associates conjunction with logical $\wedge$, it is important to confront Grice (1975)'s warning that "there are, or appear to be, divergences in meaning between, on the one hand, at least some of what I shall call the FORMAL devices $\neg$, $\wedge$, $\vee$, ... and, on the other,

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what are taken to be their analogs or counterparts in natural language – such expressions as *not*, *and*, *or* ….” For the case of English *and*, there are two well-known ‘divergences’. First, we often infer a **temporal** inference, roughly that the event described by A precedes B in a conjunction ‘A and B’, viz. (1). Second, we find **causal** inferences that the event described by A causes the event described in B in a conjunction ‘A and B’, viz. (2).

(1) Harold opened his briefcase, and he ceremoniously pulled out his completed term paper. (Bar-Lev & Palacas 1980)

(2) John raised the blinds, and the sun poured into the room. (Bar-Lev & Palacas 1980)

For Grice (1975), such inferences come from a Boolean semantics together with (by hypothesis universal) pragmatic reasoning based on the Maxim of Manner: ‘Be orderly.’ While they differ in the specific inferential processes, a range of subsequent accounts similarly propose to derive such inferences entirely from quite general pragmatic processes (see e.g. Carston 1993, Blakemore & Carston 2005).

Somewhat less discussed are cases where *and* in fact **blocks** otherwise available inferences (Bar-Lev & Palacas 1980 et seq.). For example, whereas (3a) conveys that the slipping event explains the falling event, (3b) does not naturally allow for this interpretation. Similarly, the exemplification relation conveyed by *for example* in (4a) is with *and* in (4b).

(3) a. Max fell; he slipped on a banana peel.

b. Max fell, and he slipped on a banana peel.

(4) a. John likes beans. For example, he likes pinto beans.

b. #John likes beans, and, for example, (he likes) pintos.

The analytical challenge, then, is to simultaneously explain the inferential patterns common to *and* and juxtaposition, viz. (1)-(2), while also capturing the differences in (3)-(4). To this end, Gómez Txurruka (2003) develops an analysis in terms of coherence relations, drawing on assumption from Segmented Discourse Representation Theory (SDRT; particularly Asher 1993), positing that *and* makes a lexical semantic contribution that explains the missing readings in (3b) and (4b).

Whereas the pragmatic reasoning in Gómez Txurruka 2003 – and indeed all the aforementioned accounts – is hypothesized to be universal, the presence of a lexical semantic contribution for *and* need not be. There are therefore two (unstated) predictions that (partially) semantic accounts make:

(5) Key predictions of semantic accounts:
   i. Lexical semantic restrictions imposed by conjunction may vary across languages.
   ii. Lexical semantic restrictions imposed by conjunction may vary across conjunction strategies within a language.

In this paper, we take the first steps in exploring these two predictions through two case studies, demonstrating that both are borne out. First, we explore the conjunction *tuya'kaen* in A'ingae (Isolate, Ecuador/Colombia), arguing that despite quite similar formal properties to *and*, it has a stronger semantic restriction on coherence. Second, we contrast two formally related conjunction strategies in Gizey (Chadic, Cameroon/Chad): a monosyndetic one ('single *mēj*') with a similar semantics to *and* and a bisyndetic one ('double *mēj*') with similar semantics to *tuya'kaen*.

We speculatively conclude that such variation is constrained in ways that follow from basic notions in SDRT: *discourse topic* and *thematic mapping*. Concretely, we propose that natural language conjunctions always impose a semantic requirement for one or both of these components, but differ in which of these options they instantiate.

The paper proceeds as follows: **§2** presents theoretical background; **§3** examines the semantics of conjunction in A'ingae; **§4** does the same for Gizey; **§5** concludes with thoughts on the broader typology of conjunctions.

2 Coherence relations in SDRT

Since at least the 1970s, linguists have been working to describe and model *coherence relations*, which are functions that a linguistic expression (or larger stretch of text) fulfills with respect to another. For instance, one clause may describe a situation that causes, explains, elaborates on or contrasts with another situation described by the subsequent clause (Grimes, 1975; Halliday & Hasan; 1976; Hobbs, 1979; *i.a.*).

Below are six coherence relations from SDRT (Asher & Lascarides 2003) that are characterized based on a schema from Sasaki & Altshuler 2026, showing discourse marker(s) in English that may cue a particular coherence relation, as well as its temporal import (if any) and an illustrating example. Following Duff (2023), we call the first argument of a coherence relation its *head*, and the second argument its *tail*.

(6) a. RESULT: head causes tail
   Schema: *head* SO / THEREFORE *tail*
   Example: *Cora scored a goal. Diane cheered.*

b. EXPLANATION: tail causes head

Schema: *head BECAUSE tail*

Example: *Diane cheered. Cora (had) scored a goal.*

c. NARRATION: head and tail share a contingent, common topic and are in a temporal progression relation

Schema: *head THEN tail*

Example: *Emily sat down. She sipped her coffee.*

d. ELABORATION: tail provides more information about the eventuality described by the head

Schema: *head <colon> tail*

Example: *Connie made lots of food. She made soup, lamb chops and tiramisu.*

e. PARALLEL: the tail and head are eventuality descriptions with similar in content and thematic structure.

Schema: *head AND tail*

Example: *Naomi read Middlemarch. Opal read Kindred.*

f. CONTRAST: the tail and head are eventuality descriptions with similar thematic structure, but there is a contrast in content.

Schema: *head BUT tail*

Example: *Yalitza loves tennis. Zoey hates it.*

In what follows, we describe how some of the coherence relations above relate to two basic notions in SDRT, namely *discourse topic* (§2.1) and *thematic mapping* (§2.2). We then show how these two notions allow us to analyze the way conjunctions may vary across languages.

2.1 Discourse topic requirement

A subset of coherence relations ('coordinating' ones in the sense of Asher & Vieu 2005) typically involve a discourse topic π, such that the head and tail of these relations elaborate on π. Below, is a reformulation of this idea in event semantic terms (Schlöder & Altshuler 2023):

(7) Discourse topic for a relation R: a discourse topic π is a description of an event e_π that contains a common part of the events described by the head e_α and the tail e_β of R.

e_π
$\texttt{part-of}(e_\alpha, e_\pi)$
$\texttt{part-of}(e_\beta, e_\pi)$
$(K_\alpha \sqcap K_\beta)^{e_\pi}$

Let's now apply (7) to the discourse in (8). To that end, consider the representations of (8a) and (8b), indicated as K_a and K_b respectively. As indicated by the bolding, the condition $\textbf{actor}(e_b, b)$ is the common part of K_a and K_b. Intersecting the contents of the two representations relative to a topical event e thus yields the representation in which the actor of e is Barrie (b).

(8) a. Barrie went to the garden.

b. And she looked for the cat.

$K_a =$

e_a, b, g
$\texttt{barrie}(b)$
$\texttt{going}(e_a)$
$\textbf{actor}(e_a, b)$
$\texttt{object}(e_a, g)$
$\texttt{garden}(g)$

$K_b =$

e_b, c
$\texttt{cat}(c)$
$\texttt{searching}(e_b)$
$\textbf{actor}(e_b, b)$
$\texttt{object}(e_b, c)$

$(K_a \sqcap K_b)^e =$

e
$\texttt{actor}(e, b)$

Moreover, one is likely to infer Narration in (8) because in addition to satisfying (7), one understands the post-state of the event described by (8a), i.e., being in the garden, to constitute the pre-state of the event described by (8b), i.e. Barrie was in the garden while looking for the cat.[1]

Gómez Txurruka (2003) proposes that the lexical semantics of *and* requires its conjuncts to contribute to a discourse topic in this sense. Following Asher (1993), Gómez Txurruka assumes that of the six coherence relations considered at the outset, only Narration, Result, Parallel and Contrast contribute to a discourse topic. Hence it's only with these relations that we find *and*. To wit, (3b) is typically understood as expemplifying Narration, rather than Explanation, as in (3a). This is because Narration but not Explanation contributes to a discourse topic.[2] Moreover, while (4a) is felicitious, (4b) is not because

1 For more discussion about Narration, see, e.g. Cumming 2021, Altshuler & Truswell 2022: Ch.6.

2 A caveat to this claim comes from examples with distinctive marked prosody, first attributed to Larry Horn:

(i) a. A: Did John break the vase?

b. B: WELL / the VASE BROKE / and HE dropped it.

We set aside such cases in what follows, as we do not believe they contradict the account given here.

(4b) does not exemplify a coherence relation that contributes to a discourse topic.[3]

2.2 Thematic mapping requirement

A subset of coordinating coherence relations (so-called *structural* relations) — Parallel and Contrast — require a **thematic mapping** (usually in addition to a discourse topic), which is a partial isomorphism between the head and the tail, with non-isomorphic elements being similar (or dissimilar) in some way (Asher, Hardt & Busquets 1997; Asher & Lascarides 2003; Schlöder & Lascarides 2020).[4]

Adverbial elements like English *too* have been claimed to presuppose such a thematic mapping. Consider, for example, (9) and the representation of this discourse below:

(9) [[Justin saw Teia] and [Anna saw her too]].

x, y, z
$\texttt{justin}(x)$
$\texttt{teia}(y)$
$\texttt{anna}(z)$
$\texttt{see}(x, y)$
$\texttt{see}(z, y)$

The thematic mapping constitutes the information that someone saw Teia, which we can represent as follows:[5]

u, t
$\texttt{teia}(t)$
$\texttt{see}(u, t)$

Now compare (9) to (10), where the presence of *too* leads to oddity:

For further discussion, see, e.g., Blakemore & Carston 2005 and Altshuler & Truswell 2022: Ch.6.

3 See Gómez Txurruka 2003 for many more examples that motivate her analysis; see also Asher & Vieu 2005 and Altshuler & Truswell 2022: Ch.6 for further discussion of these examples.

4 In what follows, we will primaily consider data with Parallel, though what we have to say generalizes to Contrast as well. See fn. 11 for an example of Contrast in Gizey, and Schlöder & Lascarides (2020) for discussion of Contrast more generally. For A'ingae, it remains unclear whether Contrast is felicitous with *tuya'kaen* given the existence of a dedicated adversative coordinator *tsa'ma* (Morvillo & AnderBois to appear). We leave it to future work to explore this further as nothing in the account here rules it out.

5 As noted by Altshuler & Truswell (2022), a major difference between thematic mapping and a discourse topic is that thematic mapping is not explicitly represented in the logical form. Rather, Parallel and Contrast entail that such a thematic mapping exists, and the quality of these relations is determined by the richness of the thematic mapping inferable from the head and the tail.

(10) [[Anna saw Justin] and [Ava saw Teia (#too)]].

This oddity can be explained by saying that unlike in (9), there is no isomorphic element that is identical in (10): Anna isn't Ava, Justin isn't Teia, and neither are the two events the same. The only thematic mapping that we can derive in (10) is that someone saw someone, which is not sufficient to support a good Parallel.[6]

Now consider (11):

(11) [[Teia had a high card] and [Ava had a great hand too]].
(Altshuler & Truswell 2022: p.250; Julian J. Schloeder (p.c.))

Either one finds this discourse odd, or one attributes to the speaker the erroneous belief that having a high card constitutes a good hand. The reason for this is that each conjunct contributes to the discourse topic and does so in a similar way.

2.3 Foreshadowing the analysis

In sum, this section has outlined two basic notions in SDRT, namley *discourse topic* and *thematic mapping*. In what follows we will build on Gómez Txurruka 2003, and propose that *and* in English, *tuya'kaen* in A'ingae and *mɛ̄j* in Gizey all lexically encode a requirement for a discourse topic. Moreover, we will argue that some coordinators, e.g., *tuya'kaen* and double *mɛ̄j*, also encode a requirement for a thematic mapping. This proposal is summarized in (12).

(12) **Semantic variation of conjunction by required discourse components:**

	Discourse Topic
Thematic mapping	A'ingae *tuya'kaen* Gizey *mɛ̄j … mɛ̄j*
No Thematic mapping	English *and* Gizey *mɛ̄j*

The goal of the next two sections is to motivate this proposal before concluding with a hypothesis about how we may expand the table above to encompass a broader typology of conjunctions.

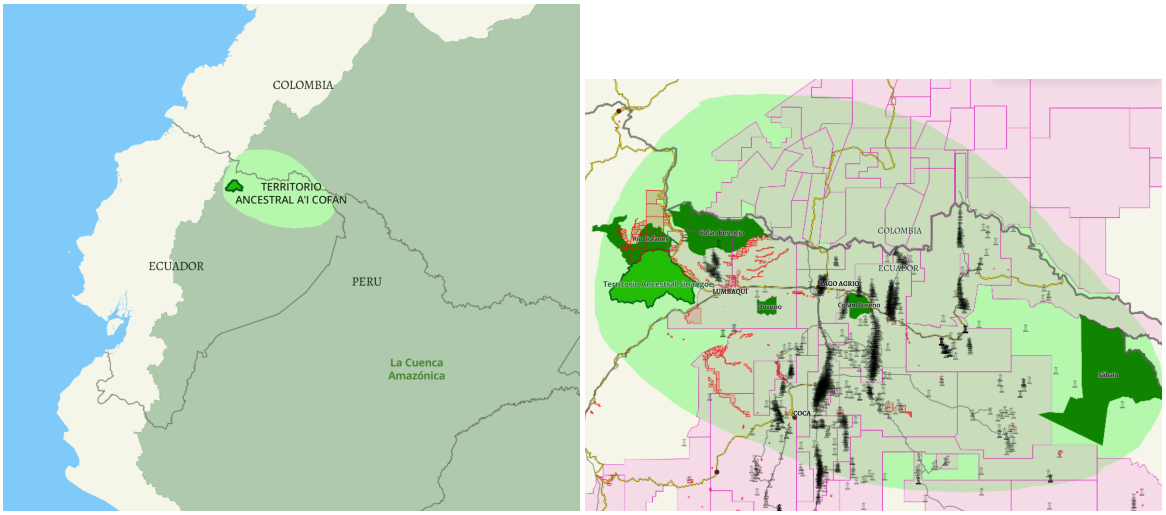
6 Unless, of course, additional context provides a common property, e.g., if Anna and Ava are a couple and Justin and Teia are also a couple.

3 Coherence constraints on conjunction in A'ingae

3.1 Background on A'ingae and its speakers

Our first study comes from A'ingae (Cofán, Kofán, ISO: con), a linguistic isolate spoken by ≈1,500 speakers at the Andes-Amazon interface in Northeast Ecuador and Southern Colombia. In Colombia, the language is heavily endangered, with few fluent speakers under 40. In Ecuador, recent ethnolinguistic vitality work, Pomilia 2025, has found the language to be quite vital in many ways, though with some communities experiencing incipient language change to Spanish. See Dąbkowski (2021) and references therein for comprehensive references.

Traditionally, the A'i are hunter-gatherers, with an ancestral territory as seen in the map on the left.[7] Many A'i live as hunter-gatherers now, though this way of life (along with their territory) is under persistent threat from extractive industries and concomitant colonization as seen in the map on the right:



3.2 Coherence properties of A'ingae *tuya'kaen*

Turning to conjunction in A'ingae, we will now examine the coherence properties of the A'ingae conjunction *tuya'kaen*. While space prevents us from giving all the evidence here, we first note that *tuya'kaen* syntactically shares a great many key properties with English *and* and other coordinators including: **(i)** requirement for syntactic and semantic

7 Maps created by Amazon Frontlines (https://sinangoe.amazonfrontlines.org/) as part of a community mapping project. Black icons are oil platforms, darker green patches are present-day A'i communities, pink and red boxes are oil and mining concessions.

likeness of the coordinated elements; **(ii)** ability to coordinate two constituents or more with *tuya'kaen* frequently only present prior to the last coordinand; **(iii)** ungrammaticality of asymmetric extraction; and **(iv)** ability to coordinate a broad range of syntactic categories including nominals, infinitives, and full clauses of various sentence types.

Despite these similarities, *tuya'kaen* differs substantially with respect to coherence relations. We explain this by appealing to (12). First, as illustrated in (13b), *tuya'kaen* is incompatible with Narration. This is because *tuya'kaen* lexically encodes a requirement for a thematic mapping, which is something that Narration does not provide.

(13) [Simba-je-'fa] **(tuya'kaen)** [tsûi-'je-'fa tsampi=nga] **(tuya'kaen)**
fish-IPFV-PLS **and** walk-IPFV-PLS forest=DAT **and**
[isian-'jen-'fa isian-'chu=ve] **tuya'kaen** [fi'thi-je-'fa].
record-IPFV-PLS record-NMLZ=ACC **and** hunt-IPFV-PLS

'They fished and walked in the forest and took photos and hunted.'

a. ✓ **List Context:** Responding to a question about what kinds of things the tourists do in general when they come visit the community.

b. # **Fixed tour context:** Describing a tour with a fixed order of activities.

Instead, the felicitous (13a) best exemplifies Parallel, which requires a thematic mapping. In lieu of *tuya'kaen*, there are several alternative constructions that are usable in cases where Narration is intended, as in the context in (13b) (see AnderBois & Altshuler 2022 and AnderBois, Altshuler & Silva 2023 for details). First, there are two constructions that semantically require Narration: clause-chaining and bridging/linkage. Second, there are constructions that are compatible with a broad range of coherence relations, but allow Narration to be readily inferred: juxtaposition and serial verbs.

Like Narration, other constructions allow Result to be inferred, e.g. the clausal adjunct in (14).[8] And yet, *tuya'kaen* discourages the otherwise natural Result — compare (14) and (15). This is because like Narration, Result doesn't contribute a Thematic mapping.

(14) **Causal inference natural w/o *tuya'kaen*:**

Ingi ka'ni-'fa-si=ki ke'i dyai-'fa.
1PL enter-PLS-DS=2 2PL sit-PLS

'When/because we came in, you all sat down'

8 While (14) is well-translated by *because*, AnderBois et al. (2023) have shown that the construction allows for either Narration or Result uses, being variously translatable with *because*, *since*, *after*, *upon*, and *when*.

(15) **No causal inference possible w/ *tuya'kaen*:**

Ka'ni-fa=ngi **tuya'kaen** ke tuya'kaen fuesû-ndekhû=ki dyai-'fa.
enter-PLS=1 **and** 2SG and other-HUM.PL=2 sit-PLS

'We came in and you and the others sat down.'
Consultant comments: Sounds like they sat down for other reasons, separately.

Relatedly, whereas the English translation allows us to naturally construe (16) as a single composite event, *tuya'kaen* instead indicates two separate events. Doing so supports a Parallel interpretation, and hence the thematic mapping requirement.

(16) Tsampi=ni jaka-mba fi'thi a'chu=ma **tuya'kaen** ña antia-ndekhû
forest=LOC hike-SS hunt woolly.monkey=ACC **and** 1SG relative-PL
isian-'fa isian-'chu=ve.
record-PLS record-NMLZ=ACC

'I hiked and hunted woolly monkey and my brothers took photos'

a. # **'One event':** My brothers took photos of the hike/hunt.

b. ✓ **'Two events':** Brothers took other photos, separate from the hunting.

Finally, we see that like *and*, *tuya'kaen* is not compatible with subordinating relations such as Elaboration, (17a). In contrast, AnderBois & Altshuler 2022 shows that juxtaposition in A'ingae (as in English) allows Elaboration or Explanation relations to be inferred, as in (17b). Kalpande 2024 shows the same in the case of A'ingae serial verbs.

(17) **Context:** addressing the question of whether he went to Lago Agrio (*Jati lago agrioningae?*)

a. #Ja=tsû lago agrio=ningae **tuya'kaen** indi=tsû bus=ma.
go=3 lago agrio=ALL **and** grab=3 bus=ACC
Intended: 'He went to lago Agrio; he took the bus.'
Consultant comments: it sounds like he took a bus after he went to Lago (e.g. he went to the bus terminal there)

b. Ja=tsû lago agrio=ningae. Indi=tsû bus=ma.
go=3 lago agrio=ALL grab=3 bus=ACC
'He went to lago Agrio; he took the bus.'

We see also that *tuya'kaen* readily co-occurs with the additive clitic *='khe*, (18), or other anaphoric elements supporting or ensuring parallelism, such as the anaphoric pro-verb *tsun* 'do so' in (19). This is expected given that *tuya'kaen* requires a thematic mapping.

(18) *Ja'ñu a'tangi tsampiningae ja tsa'umakhengi giyaen tuya'kaengi naeni'khe simbasû ja.*

Ja'ñu a'ta=ngi tsampi=ningae ja tsa'u=ma='khe=ngi giya-en tuya'kae=ngi
now day=1 jungle=ALL go house=ACC=ADD=1 clean-CAUS and=1
na'e=ni='khe simba-sû ja
river=LOC=ADD fish-NMLZ go

'Today I went to the jungle, cleaned my house as well, and also fished in the river.'

(19) *Katrinatsû tevaen kartave tuya'kaen Maria'khe tsun librove.*

Katrina=tsû tevaen karta=ve tuya'kaen Maria='khe tsun libro=ve
Katrina=3 write letter=ACC2 and Maria=ADD do.so book=ACC2

'Katrina wrote a letter and María did so for a book too.'

In sum, we've shown that, despite syntactic parallels with English *and*, A'ingae *tuya'kaen* has a narrower range of uses, which we have explained by analyzing *tuya'kaen* as requiring both a discourse topic (like *and*) and thematic mapping. In the next section, we turn to Gizey and argue that single *mēj* in this language shows the same constraints as *and*, while double *mēj* shows similar (possibly the same) constraints as *tuya'kaen*.

4 Coherence constraints on conjunction in Gizey

4.1 Gizey and its speakers

Gizey (Glottocode: gize1234) is a Chadic language belonging to the Masa branch spoken by 12,000 – 19,000 speakers (Gaffuri, Melis & Petrarca 2014; Melis 2019; Newman 2013; Seignobos 2005). It is spoken across northeastern Cameroon and southwestern Chad, and its homeland comprises 23 villages, three of which span the Cameroon-Chad border (Kouma, Dahay, Boura) and one of which is within Chad (Weyta) (D'Ascenzo 2019).

Gizey is not endangered, as it continues to be actively spoken in everyday life and passed down to younger generations (Guitang 2021). It forms a lectal continuum with Wina. This latter variety is spoken by a group of people, the Wina, who live in the eponymous administrative subdivision in Cameroon, in the western part of Lake Fianga. There are only limited number of texts available in Gizey, beyond a translated version of the New Testament and folktale collections. There have been published studies of specific features or domains of Gizey (e.g., Ajello 2006, 2007; De Dominicis 2006b,a, 2008; Ajello & Melis 2008; Ajello 2011; Guitang 2022), and a morphosyntactic description (Guitang 2024).

4.2 Coherence properties of Gizey 'mɛ̄j' and 'mɛ̄j … mɛ̄j'

Turning to conjunction in Gizey, this subsection examines the coherence properties of bisyndetic and monosyndetic uses of *mɛ̄j* ('single' and 'double' *mɛ̄j*). Before doing so, we first note that while the formal properties of *mɛ̄j* are clearly different from *tuya'kaen* 'and' in several respects, *mɛ̄j* nonetheless shares a number of properties that are characteristic of a coordinating conjunction, including **(i)** requirement for syntactic and semantic likeness of the coordinated elements; **(ii)** ability to coordinate two or more constituents with *mɛ̄j*, which can be realized after every conjunct or just after the last one[9]; and **(iii)** ability to coordinate a broad range of syntactic categories.[10]

With respect to coherence relations, we argue that:

i. single *mɛ̄j* shows the same constraints as *and*;

ii. double *mɛ̄j* shows similar (possibly the same) constraints as *tuya'kaen*.

The comparison between (20) and (21) motivates (i). Because (20) doesn't have *mɛ̄j*, it allows either Explanation or Result; adding *mɛ̄j*, as in (21), forces Result. Appealing to (12), we claim that this is because *mɛ̄j* lexically encodes a requirement for a discourse topic, which is typically available in the case of coordinating relations like Result, but not for subordinating relations like Explanation.

(20) ɬɛ̄k=ŋ hɛ̀lā Victor ʧ=ùmū
cock=DET crow.PST Victor hit.PST=3SM
'The cock crowed; Victor hit it.'

(21) ɬɛ̄k=ŋ hɛ̀lā Victor ʧ=ūm mɛ̄j
cock=DET crow.PST Victor hit.PST=3SM CONJ
'The cock crowed AND AS A RESULT Victor hit it.'

Now compare (20) and (21) to (22), which involves double *mɛ̄j*. It is odd because, like *tuya'kaen*, double *mɛ̄j* requires a thematic mapping, and neither Explanation nor Result satisfy this requirement. Moreover, Parallel is not possible here because no thematic mapping can be readily inferred without specific additional context.

9 An exception is when *mɛ̄j* is used in imperatives and rhetorical questions, where it is medial. Moreover, *mɛ̄j* does not work well with constituent and polar questions. We leave this to future work to explore.

10 Interestingly, however, VP coordination does not seem to be possible with *mɛ̄j*; *ʔɛ̀*, borrowed from French *et* 'and', provides a way to conjoin VPs.

(22) #ɬɛ̄k=ŋ hɛ̄l mɛ̄j Victor ʧ=ūm mɛ̄j
cock=DET crow.PST CONJ Victor hit.PST=3SM CONJ
'The cock crowed; Victor hit it.'

The contrast below provides further support for this proposed analysis, showing that single *mɛ̄j* allows Result, (23), but double *mɛ̄j* does not, (24).

(23) Fita zúd=únū àn nī gàŋgī mɛ̄j
Fita push.PST=1S 1S fall.PST down CONJ
'Fita pushed me, and I fell.'

(24) #Fita zúd=ún mɛ̄j àn nī gàŋgī mɛ̄j
Fita push.PST=1S CONJ 1S fall.PST down CONJ
Intended: 'Fita pushed me and I fell.'

Moreover, as illustrated below, adding a single or double *mɛ̄j* to (25) results in an infelicitous discourse, as in (26). This is because (25) only supports Elaboration, which does not contribute to a discourse topic or a thematic mapping.

(25) Zlo ʧī méɛ́=dā nàm ʧ=āʔ ɦìn kɛ̄w=tā
Zlo kill.PST goat=DEM 3SM kill.PST=3SF with knife=DEM
'Zlo killed the goat. He killed it with a knife.'

(26) #Zlo ʧī méɛ́=t (mɛ̄j) nàm ʧ=āʔ ɦìn kɛ̄w=t mɛ̄j
Zlo kill.PST goat=DEM (CONJ) 3SM kill.PST=3SF with knife=DEM CONJ
Intended: 'Zlo killed the goat. He killed it with a knife.'

On the other hand, (27) is good with either single or double *mɛ̄j* because both a discourse topic and a thematic mapping is supported by Parallel.[11]

11 Note that the same point could be made with Contrast, as in the example below:

(i) nàm mús gù mùs mùs (màj) mús kùlùm dì màj
3SM wash.PST DIR wash.RED wash.RED (CONJ) wash.PST horse NEG CONJ
'He washed himself but did not wash the horse.' (Ajello & Melis 2008)

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(27) gùrɛ́j=n k=ɔ̄k dɔ̀ɔ̀g-ɔ̀ (mɛ̄j) ʔàn gùrɛ́j=n k=ɔ̄n dɔ̀ɔ̀g mɛ̄j;
children=DET with=2SF ten-FV (CONJ) 1S children=DET with=1S ten CONJ
v=àj d=àf gùrù=nà
catch.IMPV=1PLINCL cook.IMPV children=DET
'You have ten children; (and) I have ten children; let's catch and cook them.'

Finally, (28) and (29) exemplify Narration, supporting a discourse topic. As a result both are good with a single *mɛ̄j*. However, these discourses are odd with double *mɛ̄j* because no thematic mapping is inferred, i.e. neither Parallel nor Contrast can be inferred here.

(28) v=āʔ kɛ̄j (#mɛ̄j) vād=āʔ vàt mɛ̄j
catch.PST in.hands CONJ finish.PST=3SF finish.RED CONJ
'(She) caught her and finished (killed) her.'

(29) Zlo fāl nìj=n(ā) (#mɛ̄j) nàm ʧ=ūm mɛ̄j
Zlo find.PST water=DET CONJ 3SM drink.PST=3SM CONJ
'Zlo found the water and he drank it.'

In sum, we've shown that single *mɛ̄j* shows the same constraints as *and*, while double *mɛ̄j* shows similar (possibly the same) constraints as *tuya'kaen*. We have explained these observations by analyzing single *mɛ̄j* as requiring a discourse topic, and double *mɛ̄j* as requiring both a discourse topic and thematic mapping.

4.3 A compositional challenge from Gizey and other languages

In the last subsection, we proposed that single *mɛ̄j* requires a discourse topic, while double *mɛ̄j* requires thematic mapping. The question that we would like to raise in this subsection is: Can we compositionally derive the thematic mapping requirement? In particular: Why does doubling a topic requirement result in a thematic mapping requirement? It is not clear to us how SDRT definitions of coherence relations could ever allow such a compositional derivation, suggesting that: (i) double *mɛ̄j* is not compositional, (ii) a different analysis of conjunction, and/or (iii) a different analysis of coherence relations.

We note that (i) is unlikely because conjunction doubling is a robust phenomenon cross-linguistically. One well-known example is the French *et*.[12] Here is an illustrative example

12 Note that *et* is from Latin, which is well known to have productive bisyndetic uses (see, e.g., Pinkster 2015: pp. 1252ff and Pinkster 2021: pp. 638ff). Thanks to Philomen Probert and Patrick Bray for discussing with us the uses of *et* in Latin and French respectively.

from French Baroque poetry, where *et* is first doubled across noun phrases (*la mer* and *l'amour)*[13], and then across clauses (*la mer est amère* and *l'amour est amer*). Focusing on the latter case of double *et*, we note that Parallel is not only inferred here, but this inference is crucial for the overall message of the poem, namely that the sea and love are alike in being bitter. The poem would lose it's power if only one *et* were used here.[14]

(30) **Et** la mer **et** l'amour ont l'amer pour partage, **Et** la mer est amère, **et**
And the sea and love have bitter for sharing And the sea is bitter, and
l'amour est amer
love is bitter.

'The sea and love alike have a bitter taste/share a certain bitterness. And the sea is bitter, and also love is bitter.' (Pierre de Marbeuf, *Anthologie* (1571-1677))

Russian is another language were conjunction doubling is robust. Consider the contrast in (31). (31a) is a joke in which doubling *i* across clauses forces the hearer to deduce an otherwise unlikely (and funny) Parallel between an electric samovar and insincere people – this is an ingenious way of saying that neither are authentic. (31b) shows a monosyndetic use of *i*, which results in oddity because Parallel is no longer semantically encoded and world knowledge doesn't support this relation (or any other).

(31) a. I samovar u nas èlektričeskij, i my davol'no neiskrennie.
And samovar to us electric, and we quite insincere

'Our samovar is electric (i.e., not authentic) and we are not sincere (i.e., not authentic).' (M. Zhvanetskij, *Moj portfel'*; Ekaterina Levina, p.c.)

b. #Samovar u nas èlektričeskij, i my davol'no neiskrennie.
Samovar to us electric, and we quite insincere

13 We have not focused on such cases here, though ultimately a holistic analysis of conjunction doubling would also extend to sub-clauses conjunction. See, e.g., Flor, Haslinger, Koopman, Rosina, Roszkowski & Schmitt 2017 for discussion of such cases.

14 When translated into Gizey, we see that conjunction doubling is retained, viz. the use of double *mɛ̄j*:

(i) *nìj lūmm ɦìn mìndà ɓráw gàlākkà mɛ̄j, nìj lūmm ká gàlāk-ì mɛ̄j, mìndà kāw ká gàlāk mɛ̀j*

nìj.lūm=m ɦìn mìn=dà ɓráw gàlāk=kà mɛ̄j, nìj.lūm=m ká gàlāk-ì mɛ̄j,
sea=DET with love=DET share.IPFV bitterness=DET CONJ sea=DET EXIST bitter-FV CONJ
mìn=dà kāw ká gàlāk mɛ̀j
love=DET too EXIST bitter CONJ

'The sea and love distribute bitterness. The sea is bitter, love too is bitter'.

'Our samovar is electric and we are not sincere.'

Further contrasts can be observed below with Russian idioms, which often involve conjunction doubling. In such examples, a monosyndetic use of *i* would greatly diminish its idiomatic interpretation, resulting in a slightly different interpretation in which a weaker Parallel is inferred and/or Narration is inferred instead.

(32) a. I rybku s"est', i v vodu ne lezt'.
And fish eat and in water not climb
'To have one's cake and eat it, too' (Lit. 'Eat a fish without going into the water.')

b. I ovcy cely, i volki cyty.
And sheep intact, and wolves full
'Win-win; everyone benefits.' (Lit. 'The sheep are safe and the wolves are fed.')

Coming back to the compositional challenge laid out at the outset, we offer the following tentative hypothesis that we hope to explore in future research: *Coordinating conjunctions signal the end of a topic chain.* Potential evidence for this hypothesis comes from contrasts like those in (33). Observe that while (33a) is a perfectly natural discourse, exemplfiying Narration, (33b) and (33c) are odd. This is because when describing a chain of eventualities with *and*, this conjunct must appear in the final clause.[15]

(33) a. Rachel adjusted her scarf, took a deep breath, crossed herself **and** walked into the room.

b. ??Rachel adjusted her scarf **and** took a deep breath, crossed herself, walked into the room.

c. ??Rachel adjusted her scarf, took a deep breath **and** crossed herself, walked into the room.

Now, if the working hypothesis is correct, we could say that doubling the request to end a topic chain is a way of signaling that either sub-chain could be the tail (or head) of the super-chain. This would explain the symmetrical nature of Parallel and Contrast (Lee 2024), and explain why, e.g., Narration is much harder to get with conjunction doubling (even though both relations are, in principle, compatible with Parallel/Contrast). To wit, consider (34). According to our intuitions, doubling *and* here makes it harder to infer Narration, which is salient in (33a), where we only see one instance of *and*.

15 Note that in languages with bisyndetic coordination, e.g. Gizey, the monosyndetic conjunct is in the final clause.

(34) (What did Rachel do to prepare?) Rachel adjusted her scarf **and** she took a deep breath **and** she crossed herself **and** she walked into the room.

5 Conclusions

We opened with a quote from Grice highlighting the widespread existence of discrepancies between the elements of first order logic and the meanings communicated by their natural language counterparts. One much debated such case is the availability of various inferences with English *and* and clausal juxtaposition, and crucially, the differences between the two. While a significant role for pragmatic inference of some kind is inescapable, prior theories differ in whether they also assume a lexical semantic contribution for *and*. In this paper, we explored an unstated prediction of accounts with a semantic component: the lexical semantics of conjunction could differ across languages.

Following Gómez Txurruka 2003 on English *and*, we've argued that monosyndetic coordination with Gizey *mɛ̄j* imposes a semantic requirement for a **discourse topic**. In contrast, we've argued that A'ingae *tuya'kaen* and bisyndetic coordination with Gizey *mɛ̄j … mɛ̄j* additionally impose a requirement for a **thematic mapping**. Overall, they therefore impose a stronger requirement than English *and*.

In light of these findings, one wonders, then, about the full semantic typology of conjunction. For example, are there conjunctions which encode a weaker meaning than English *and*? One candidate are asyndetic constructions that allow not only coordinating coherence relations, but also subordinating ones:

(35) **Serial Verb Construction:**
tse mangû jangi chû'fakhu ja'ya

tse [mangû] [jangi] [chû-'fa-khu ja]='ya
ANA.LOC crawl get.up bare-SH.LAT-AUG go-VER

'he [crawled] and [got up] and [left naked].' (Kalpande 2024)
20170730_kunsiana_cuento_vc_2MZ -- 2:23

(36) **Clausal juxtaposition**
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.' (AnderBois & Altshuler 2022)

Notably, however, both of these are by definition asyndetic, casting doubt on whether there truly are conjunctions lacking a coherence-related contribution.

Another relevant case comes from Murray 2017 on Cheyenne *naa* and Bochnak 2025 on Wá·šiw =ŋ*a*. In both of these languages, the coordinators are weaker than English *and* in the sense that they have uses with disjunctive truth conditions. While more detailed work is needed, the data in those papers crucially does not provide examples of subordinating coherence relations like Elaboration. Rather, it seems that these elements are usable for cases of Parallel, Contrast, and Alternate (in the case of disjunction), with other discourse particles interacting with these elements in ways described in those works. These three relations all rely on a thematic mapping.

Crucially, the Alternate relation associated with disjunction does not involve a discourse topic. That is to say, there is not a topical event to which the disjuncts contribute in the way that English *and* and Gizey *mɛ̄j* do. Assuming this interpretation of the Cheyenne and Wá·šiw data is correct, the following semantic typology is motivated:

(37) **Tentative typology of conjunction by required discourse components:**

	Discourse Topic	**No Topic**
Thematic mapping	A'ingae *tuya'kaen* Gizey *mɛ̄j … mɛ̄j*	Cheyenne *naa* Wá·šiw =ŋ*a*
No thematic mapping	English *and* Gizey *mɛ̄j*	[Unattested]

One final class of conjunctions that might fit in the same upper right cell are the 'non-exhaustive' connectives described by Barotto & Mauri (2022). These elements create meanings paraphrases like 'A and B and such' or 'things like A and B'. While the coherence properties of these have not been investigated in all cases, Nagatsuji (2017) specifically claims for Japanese *-tari* that causal and temporal inferences are disallowed. More generally, Barotto & Mauri (2022) explicitly compare these with additive particles like *too* and the examples they show appear compatible with a requirement for a thematic mapping, but no discourse topic (though of course likely requiring some additional semantic component). While speculative, we hope to have shown that not only do conjunctions differ in ways well characterized by coherence relations, but there may also be a meaningful universal generalization similarly statable in such terms.

Glossing abbreviations:

The following non-standard glossing abbreviations are used in examples here: irrealis accusative case 'ACC2,' additive focus 'ADD,' anaphoric demonstrative 'ANA,' comparative 'CMP,' contrastive topic 'CT,' diminutive aspect 'DMN,' different subject 'DS,' exclusive focus 'EXCL,' frustrative 'FRST,' instrumental case 'INST,' manner 'MANN,' new topic 'NEW,' nominal subordinator 'SBRD,' same subject 'SS, subject plurality 'PLS,' polar interrogative 'INT,' prospective aspect 'PRSP,' veridical 'VER.'

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