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Clause-level coordination and discourse continuity in Tohono O’odham

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Abstract: Coordination in Tohono O’odham, a Southern Uto-Aztecan language spoken in Arizona and Sonora, Mexico, is sensitive to the syntactic categories of the conjuncts. Clausal coordination can be marked by an overt prefix *ku-* which is the synchronic descendent of the Proto-Uto-Aztecan obviative subordinator **-ku ~ -ko* and shares numerous cognates throughout the language family. The distribution of *ku-* in the left periphery parallels that of the polar question marker *n-* and the subordinator *m-*. However, other typological characteristics of Tohono O’odham (e.g., auxiliary-second word order) closely interact with these elements in the left periphery of the clause. Drawing from corpus sources and previous literature on functional elements in Tohono O’odham, this work aims to analyze the available instances of Tohono O’odham CP coordination within a Minimalist syntactic framework and compare its semantic and discourse functions to its cognate morphemes throughout the language family. Thus, this work presents evidence in favor of an analysis of the Uto-Aztecan switch reference system that not only switches between subject referents but also plays a role in the event structure of the clause and discourse. In O’odham discourse specifically, *ku-* surfaces as the first element of the second clause at the boundary between two clauses in a shared narrative. In these frames, it signals an episodic shift. Usages of switch-reference linked to eventualities in discourse are commonly referred to as “non-canonical switch-reference” and can be accounted for by an implicature-based theory of switch reference.

Keywords: Tohono O’odham; Uto-Aztecan; coordination; switch reference; implicature

1 Introduction

The purpose of this work is to present a Minimalist analysis of coordination in Tohono O’odham, a Southern Uto-Aztecan language, with a specific emphasis on CP (i.e., clause) level coordination. We argue that the special *ku-* prefix, characteristic of

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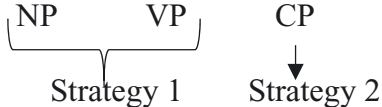
CP coordination, is a switch reference complementizer. We argue that *ku-* is syntactically merged in C^0 in Tohono O’odham and that it consistently marks switch-reference semantic interpretations throughout the Uto-Aztecan languages examined in this work. Furthermore, in Tohono O’odham, O’ob No’ok, and Comanche, it appears to mark obviation not only between subjects but also between eventualities occurring in a successive linear fashion.

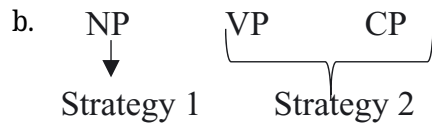
Subsequently, we present the characteristics of category-sensitive coordination in Tohono O’odham within the general cross-linguistic typology of coordinate structures. We then go over a few examples highlighting exactly how c-selection of the conjuncts is realized by different coordinators in the language and highlight the word-order flexibility of Tohono O’odham clauses.

We then narrow our focus to CP coordination to illustrate how the special form of the auxiliary that surfaces in between two coordinate clauses can suffix onto C^0 phonologically realized as *ku-*, which we follow Hale (1983) in analyzing as a marker of obviation deriving from the Uto-Aztecan switch reference system. We show that the auxiliary suffixing onto a functional element high in the left periphery is not unique to *ku-* and that *ku-* itself is not restricted to coordinated structures. To this end, we present data from information questions that license *ku-* in the left periphery, polar questions introduced by *n-*, subordinate clauses introduced by *m-*, and Tohono O’odham narratives where *ku-* can function as a marker of discourse discontinuity. We also offer a diachronic account of *ku-* as originating from a Proto Uto-Aztecan suffix **-ko ~ -ku* and present cognates throughout the language family.

2 Tohono O’odham coordination strategies

Tohono O’odham is a Southern Uto-Aztecan language spoken in Southern Arizona and Northern Sonora, Mexico by the Tohono O’odham. It is mutually intelligible with Akimel O’odham and closely related to O’ob No’ok. Zepeda (1983) describes the system of coordination as sensitive to the syntactic categories being coordinated. Haspelmath (2004:7) notes that category-sensitive coordination is common cross-linguistically, being found in roughly half of the world’s languages. A further typological split exists in such languages depending on whether VP-coordination employs the same strategy as NP-coordination or clausal coordination (Haspelmath 2004:8). This difference can be represented as follows:

- (1) a. 



Tohono O'odham's category-sensitive system for coordination is typologically closest to strategy (1a) since VPs in the imperfective aspect and NPs use the same coordination strategy, distinct from clausal coordination. However, we see in later examples that it makes a further distinction between imperfective and perfective VP coordination, making (1a) an over-simplistic generalization.

In instances of coordinating lower in the syntactic structure than the CP level, the grammar utilizes (*k*)*c* (Zepeda 1983:24). Below are examples for both NPs in (2) and (3) and imperfective VPs in (4). These examples also highlight the flexibility of Tohono O'odham word order. Except for the auxiliary invariably surfacing as the second constituent in the clause, nominal constituents in simple declarative sentences can appear in any order (Zepeda 1983:130). Thus, intransitive sentences may surface as Subject-Verb or Verb-Subject (Zepeda 1983:129):

- (2) a. *Mi:lon c 'u:w-ha:l c ha:l 'o 'e'esa.*
Mi:lon c 'u:w-ha:l c ha:l 'o 'e'esa.
 Watermelon **CONJ** cantaloupe **CONJ** squash AUX.IPFV.3SG plant:USIT
 'He plants watermelons and cantaloupes and squash.'¹ (Hale 1983:3)
- b. *Hegai 'o 'e'esa g mi:lon c 'u:w-ha:l.*
Hegai 'o 'e'esa g mi:lon c 'u:w-ha:l.
 3SG AUX.IPFV.3SG plant:USIT **DET** watermelon **CONJ** cantaloupe
c ha:l.
CONJ squash
 'He plants watermelons **and** cantaloupes **and** squash.'²

The *g* determiner present in (2b) is always omitted in a sentence-initial NP (Zepeda 1983:13). However, it surfaces preceding any sentence-internal NPs. In instances of

¹ The glossings for Zepeda (1983) were done by me following the Leipzig Glossing Rules updated to May 2015 (<https://www.eva.mpg.de/lingua/resources/glossing-rules.php>). I have also adjusted data in Tohono O'odham from sources other than Zepeda (1983) and Hale (1983) to conform to the Alvarez-Hale orthographic system currently adopted by the Tohono O'odham Nation. The glosses for languages other than Tohono O'odham that have been adjusted to conform to the conventions used in this work are noted in square brackets (i.e., [...]). The original glosses have been maintained as much as possible to avoid misconstruing other researchers' analyses.

² The Tohono O'odham sentences that are not attributed to corpus sources derive from homework assignments and personal skill development from attending Tohono O'odham language classes at the University of Arizona.

coordination, it surfaces only once, preceding the first NP in the linear order. Note that NP juxtaposition cannot be interpreted as coordination; the coordinator must be repeated between each NP in the conjunct:³

- (3) **Hegai 'o 'e'esa g mi:lon, 'u:w-ha:l c ha:l.*
 **Hegai 'o 'e'esa g mi:lon, 'u:w-ha:l c*
 3SG AUX.IPFV.3SG plant:USIT DET watermelon, cantaloupe CONJ
ha:l
 squash.
 'He plants watermelons, cantaloupes, and squash.'

In (4a), we see the phonologically determined alternation between *kc* and *c*, as the conjunction surfaces as *kc* if and only if the preceding word is vowel-final (Zepeda 1983:25). In (4a), the first verb in the linear order *cicwi* 'play' is vowel final; therefore, the conjunction surfaces as *kc*. In (4b), the ordering of the verbs within the coordinated VP has been changed to illustrate the other allomorph of the coordinator. Furthermore, the constituents within the clause have been rearranged to show the possibilities of Tohono O'odham word order:

- (4) a. *'A'al 'o cicwi kc hehem.*
'A~'al 'o cicwi kc hehem
 PL~child AUX.IPFV.3PL play:IPFV.PL CONJ laugh:IPFV.PL
 'The children are/were playing and laughing.' (Zepeda 1983: 24)
- b. *Hehem c cicwi 'o g 'a'al.*
Hehem c cicwi 'o g 'a'al
 Laugh:IPFV.PL CONJ play:IPFV.PL AUX.IPFV.3PL DET PL~child.
 'The children are/were playing and laughing.'

A separate strategy is attested for coordinating VPs in the perfective aspect (Hale 1983:7). In these instances, the grammar employs (-)k, which may fuse onto a perfective verbal form and prevent truncation (Hale 1983: 7), as evident in the example below:

- (5) *Juḍumĩ 'ant ce:gk gatw.*
Juḍumĩ 'ant ce:g-k⁴ gatw.
 Bear AUX.PFV.1SG find:PFV.SG-CONJ shoot:PFV.SG
 'I saw a bear and shot it.' (Hale 1983:7)

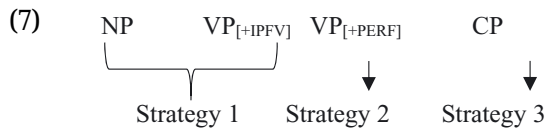
³ In Tohono O'odham, NP juxtaposition is used for possessive constructions (Zepeda 1983: 74–83), which may be related to why it is not used as a coordination strategy.

⁴ The perfective form of *ce:g* is otherwise the truncated *ce:*.

When *k* is not post-verbal, perfective truncation takes place,⁵ and *k* does not fuse onto the preceding element (Hale 1983:7):

- (6) *M 'ant o ha-ku'iwañ g şu:dagi k 'am o şul g mu:ñ.*
 There AUX.PFV.1SG [IRR] [OBJ.3PL]-boil:CAUS.PFV DET water CONJ
'am o şul g mu:ñ.
 there [IRR] throw:PFV.PL DET beans.
 'I'll boil up some water and throw in some beans.' (Hale 1983:7)

These data indicate that Tohono O'odham does not quite fit the typological generalization made in (1). Similar tripartite divisions of coordination strategies are cross-linguistically attested (e.g., Somali in Haspelmath (2004:8)). However, in Tohono O'odham, aspectual considerations determine the appropriate strategy for VPs. Thus, we can amend (1) to account for these data:



We leave an account of the aspectually-determined alternation in VP coordination to future research and turn to the main focus of this work; let us consider some examples of coordination of finite clauses.

When coordinating separate clauses in the imperfective aspect with distinct subjects, the auxiliary of the second clause surfaces between the two clauses in phonologically reduced form, agreeing in person and number with the subject of the second clause (Zepeda 1983:26). In the following examples, we show how two separate clauses can be conjoined using this strategy. The (a) line in each example represents the sentences as they would appear independent of each other, and the (b) line represents their structure when coordinated. In this initial section, we have glossed all coordinators as exhibiting both properties of conjunctions and auxiliaries. As we proceed with our analysis, we can see that this is not an entirely accurate description:

⁵ Note that the irrealis/future form illustrated in (6) and characterized by the particle *o* still selects for the truncated perfective form of the verb, even though the English translation is not obviously perfective.

- (8) a. *'Uwĩ 'o cipkan + A:ñi 'añ ko:ş.*
'Uwĩ 'o cipkan +
 Woman AUX.IPFV.3SG work:IPFV.SG +
'A:ñi 'añ ko:ş.
 1SG **AUX.IPFV.1SG** sleep:IPFV.SG
 'The woman is/was working' + 'I am/was sleeping.'
- b. *'o cipkan ñ 'a:ñi ko:ş.*
'Uwĩ 'o cipkan ñ
 Woman AUX.IPFV.3SG work:IPFV.SG **AUX;CONJ.IPFV.1SG**
'a:ñi ko:ş.
 1SG sleep:IPFV.SG
 'The woman is/was working, and I am/was sleeping.' (Zepeda 1983:25)
- (9) a. *Ceoj 'o ñeok. + 'A:pi 'ap şoak.*
Ceoj 'o ñeok. +
 Boy AUX.IPFV.3SG speak:IPFV.SG + PRO.2SG
'A:pi 'ap şoak.
 2SG **AUX.IPFV.2SG** cry:IPFV.SG
 'The boy is/was speaking' + 'You are/were crying.'
- b. *Ceoj 'o ñeok p 'a:pi şoak.*
Ceoj 'o ñeok p
 Boy AUX.IPFV.3SG speak:IPFV.SG **AUX;CONJ.IPFV.2SG**
'a:pi şoak.
 2SG cry:IPFV.SG
 'The boy is/was speaking, and you are/were crying.' (Zepeda 1983: 26)

Once again, if an NP that would otherwise appear in sentence-initial position is now sentence-internal, the *g* determiner must be realized:

- (10) *'A:pi 'ap şoak k g ceoj ñeok.*
'A:pi 'ap şoak k g ceoj
 2SG AUX.IPFV.2SG cry:IPFV.SG AUX;CONJ.IPFV.3SG **DET** boy
ñeok.
 speak:IPFV.SG
 'You are/were crying, and the boy is/was speaking.'

Thus, we see a special form of the imperfective auxiliary that is employed specifically for CP coordination. The full paradigms of the imperfective auxiliary and its special coordinative forms are given in Tables 1 and 2.

As a descriptive generalization, initial-vowel deletion holds between the first and second-person of the auxiliary and CP conjunction (Zepeda 1983:26). The third-person auxiliary, however, does not follow this pattern, surfacing as *k* (e.g., (6)).

Table 1: Imperfective auxiliary (Zepeda 1983:19).

	Singular	Plural
1st person	’añ	’ac
2nd person	’ap	’am
3rd person	’o	’o

Table 2: Imperfective CP conjunction (Zepeda 1983:27).

	Singular	Plural
1st person	ñ	c
2nd person	p	m
3rd person	k	k

Below, we analyze the emergence of *k* as a reflex of the Uto-Aztecan obviative switch reference prefix *ku-* that has undergone final-vowel deletion. For the purposes of this work, we adopt the definition of switch reference presented by Baker (2020:1):

SR is a “grammatical phenomenon in which one clause is morphologically marked to show whether or not one of its nominal arguments refers to the same entity or entities as a nominal argument of a structurally nearby clause.” SR contrasts between same subject (SS) (i.e., proximate) and different subject (DS) (i.e., obviative) marking.

To initiate this line of reasoning, we now present a variant of CP coordination that gives phonological realization to the *ku-* prefix in the first and second person. Consider the following example:

- (11) % ’Uwĩ ’o cipkan kuñ ’a:ñi ’o’ohan.
 ’Uwĩ ’o cipkan **ku-ñ**
 Woman AUX.IPFV.3SG work:IPFV.SG **CONJ-AUX.IPFV.1SG**
 ’a:ñi ’o’ohan.
 PRO.1SG write:IPFV.SG
 ‘The woman is/was working, and I am/was writing.’ (Zepeda 1983: 27)

Thus, the paradigm for these forms can be understood as being composed of two diachronically distinct parts: the obviative marker *ku-* and the appropriate auxiliary agreeing in person and number with the subject of the second clause, as in Table 3.

Table 3: % Form of the coordinating auxiliary (based on data from Zepeda (1983:27)).

	Singular	Plural
1st person	kuñ	kuc
2nd person	kup	kum

Hale (1983:15) notes that the obviative prefix *ku-* and the perfective proximate (-) *k* illustrated in the coordinate constructions in (5–6) above have separate diachronic origins. We return to the diachrony of *ku-* in §3.2, presenting cross-linguistic evidence and a phylogenetic tree to support an obviative analysis of *ku-* throughout the language family. We analyze such obviation not only in terms of subject reference but also with respect to the identification of separate eventualities in a temporal sequence. Although we have seen above that the appropriate allomorph for VP coordination is aspectually determined, the same does not hold for CP coordination, as the strategy of perfective CP coordination is the same as that of imperfective CP coordination.

Before turning to specific instances of perfective CP subordination and coordination with *ku-* in (13–14), consider the following illustrative example highlighting the morphological changes between the imperfective (12a) and perfective aspects (12b):

- (12) a. 'A:ñi 'añ ñeok.
 'A:ñi 'añ ñeok
 1SG AUX.IPFV.1SG speak:IPFV.SG
 'I am/was speaking.' (Zepeda 1983: 61)
- b. 'A:ñi 'ant ñeo.
 'A:ñi 'ant ñeo
 1SG AUX.PFV.1SG speak:PFV.SG
 'I spoke.' (Zepeda 1983: 61)

The full paradigm for the perfective auxiliary is given in Table 4.

Table 4: Long form of the perfective auxiliary (Zepeda 1983:61).

	Singular	Plural
1st person	'ant	'att
2nd person	'apt	'amt
3rd person	'at	'at

Glossed instances of perfective clause coordination are not attested in Hale (1983); however, the SR origins of the language's strategies for coordination are highlighted in (13), as the same strategy for CP imperfective coordination is employed for SR perfective subordination, signaling a switch in topic (Hale 1983:9):

- (13) *Napt o ñ-we:mt nt o ñ-wapko.*
N-apt o ñ-we:mt nt o
 Q-AUX.PFV.2SG [IRR] OBJ.1SG-help:PFV AUX;CONJ.OBV.PFV.1SG [IRR]
ñ-wapko?
 POSS.1SG-wash:PFV.PL
 'Will you help me to do my washing?' (Hale 1983: 9)



There is, however, a clear instance of perfective coordination in Scancarelli (1988), where the auxiliaries are inflected following the perfective paradigm, and lexical verbs undergo truncation. We may thus deduce that the *ku-* + AUX strategy remains the same for CP coordination with an auxiliary in the perfective aspect:

- (14) *Hegai 'uwĩ 'at 'am şonhi hegai ceoj kut 'am sosa.*
Hegai 'uwĩ 'at 'am şonhi hegai ceoj
 DEM.3SG woman AUX.PFV.3SG LOC hit:PFV.SG DEM.3SG boy
ku-t 'am sosa.
CONJ-AUX.PFV.3SG LOC cry:PFV.SG
 'The woman hit the man and he cried (Scancarelli 1988:133)

Hale (1983:9) notes that the first-person auxiliary *nt* in (13) is the residue of *kunt* following deletion. As is the case in the imperfective aspect, both the form with and the form without *ku-* are grammatical. Overall, licensing of *ku-* or of a null element bearing the same features in a higher projection of the subordinate clause in (13) is consistent with its suggested obviative nature, as the subjects of the two clauses are, in fact, distinct. The superordinate clause surfaces with the second-person singular auxiliary *apt*, and the reduced auxiliary of the subordinate clause is the first-person singular *nt*.

(13) effectively broadens the picture of possible analysis of Tohono O'odham coordination. In the following section, we explore the appearance of *ku-* in information questions, as presented by Zepeda (1983:55). Furthermore, we present further corpus data from a collection of Tohono O'odham stories published by the Summer Institute of Linguistics (SLI) in 1969 (here cited as Enos et al. (1969)) to highlight the pervasive use of *ku-* as a discourse marker in narratives.

3 A closer examination of obviative *ku-*

3.1 *Ku-* in information questions and narratives

Tohono O’odham has distinct strategies for forming polar and information questions (Zepeda 1983:13, 53–57). Polar questions surface with a sentence-initial question marker (i.e., *n-*) on which the auxiliary suffixes. The relative ordering of the verb and nominal elements is free, but they must follow *n* + AUX. Consider the following examples:

- (15) a. *No g mi:stol ko:ʃ?*
N-o g mi:stol ko:ʃ?
 Q-AUX.IPFV.3SG DET cat sleep:IPFV.SG
 ‘Is/was the cat sleeping?’ (Zepeda 1983: 14)
- b. *Nat ko:k g ‘a’al?*
N-at ko:k g ‘a~’al?
 Q-AUX.PFV.3PL sleep:PFV.PL DET PL~child
 ‘Are the children sleeping?’ (Zepeda 1983:64)

Tohono O’odham features two distinct strategies for information questions. In one case (i.e., (16a)), it raises a *wh-* element to the specifier of a projection at the left edge of the clause. In the other (i.e., (16b)), the auxiliary exceptionally is able to occur initially, in construction with a following indefinite pronoun or adverbial (Zepeda 1983:54–55). In the latter strategy, the indefinite element must immediately follow the auxiliary, and the auxiliary surfaces in the same phonologically reduced forms as presented in Table 2 for coordination. Once again, the auxiliary can optionally surface as a suffix onto *ku-* (see 16c and Tables 5 and 6) (Zepeda 1983:55).

Table 5: Pre-auxiliary Wh- words (Zepeda 1983:54).

Do:	Who, whom
ʃa:	What (<i>abstract</i>)
ʃa:cu	What (<i>concrete</i>)
Ba:	Where

Table 6: Indefinites in post-auxiliary questions (Zepeda 1983:55, Mathiot 1973).

Heḍai	Who, whom
Has	What (<i>abstract</i>)
Hascu	What (<i>concrete</i>)
Hebai	Where

- (16) a. *Do:'o ñu:kud g 'ali?*
Do: 'o ñu:kud g 'ali?
Who AUX.IPFV.3SG take.care.of:IPFV.SG DET baby
 'Who is/was taking care of the baby?' (Zepeda 1983:54)
- b. *M hebai cicpkan a:pim?*
M hebai c~icpkan a:pim?
Q;AUX.IPFV.2PL where PL~work:IPFV 2PL
 'Where do you work?' (Zepeda 1983:55)
- c. *Kum hascu hihidođ a:pim?*
Ku-m hascu hihidođ a:pim?
Q-AUX.IPFV.2PL what cook:IPFV.PL 2PL
 'What are/were you cooking?' (Zepeda 1983:55)

Thus, we can see that the distribution of *ku-* is not limited to instances of coordination. However, it invariably occupies a high position in the left periphery, where, as seen in information questions, it expresses the illocutionary force of the clause in conjunction with the features of other elements in its scope. It seems to be the case that the role of *ku-* as a functional projection is not limited to acting as an SR marker on a strictly local level (i.e., between projections dominated by the same CP). As is pervasively the case in Enos et al. (1969), *ku-* can serve a broader function as a marker of referential discontinuity in narratives. Consider the following excerpt from *Maş Hema g 'Uwĩ si s-Ho:ho'id g Tokađa* 'A Woman who Loved Field Hockey' (pp.166-172), where an exchange is taking place between the titular protagonist investigating her mother's whereabouts and a group of playing children:

- (17) "No 'i:ya 'oimed g ñ-je'e?" **Kuş** hab kaij hegam 'a'al, "Heu'u. 'I:ya 'o 'oimed."
Kuş hab kaij, "Mamt 'am 'o hema međ..."
 "N-o 'i:ya 'oimed g ñ-je'e?"
 "Q-AUX.3SG here wander DET POSS.1SG-mother?"
Ku-ş hab kaij hegam 'a'al,
COMP-AUX.IPFV.REP.3PL thus said those children,
 "Heu'u. 'I:ya 'o
 "Yes. Here AUX.3SG 'oimed."
 wander."
Ku-ş hab kaij, "M-amt 'am
COMP=AUX.IPFV.REP.3PL thus said, "COMP=AUX.2PL over.there
 o hema međ..."
 IRR INDF run..."
 "Is my mother wandering here?" **The children** [thus reportedly] said,
 "Yes. She's wandering around here." Then **she** [thus reportedly] said,
 "One of you run..." (Enos et al.1969: 168)

Of crucial importance in (17) is the usage of *ku-* with the reportative suffix *ʂ* to indicate a switch in speakers between the children and the woman, as there is no new overt subject NP following the second instance of *kuʂ* and the third person form of the auxiliary itself does not distinguish between singular and plural arguments. Overall, there are ten tokens of the formulaic *kuʂ hab kaij* ‘thus reportedly said’ and 44 other tokens of *kuʂ* alone appearing throughout the story. Note that *ku-* is optional even in this context, where the reportative suffix *ʂ* may surface clause-initially, just as is the case in coordinated structures.

This discourse function of *ku-* in narratives is shared by Tohono O’odham and other closely related languages. Consider the following O’ob No’ok examples as illustrated in Barragan (2024), where the relevant cognates of *kuʂ* and *ku* are, respectively, *kas* and *ko*:

- (18) *Kas* aga o’ok maamrag am Yeksam si’I sumtu’u ge’e neebig bei as hogir behek hivsmak hivsmak ha’at ho’ir veenagfyak ho’ir **ko** vaik tas am a kaat huhug vaik huhugva **kas** a toñirva.

‘**And then**, the father-in-law there in Yecora got something, a big neebig (monster) skin. He got it and scraped (it), scraped it, and served something, having added it. He served it **and** three days later (the son-in-law) was lying down. Three days ended **and** (the son-in-law) had a fever.’
(Barragan 2024)

Indeed, from (18), we can already see that the O’ob No’ok and Tohono O’odham cognates share their narrative roles as discourse markers signaling a switch in referent, as well as linking clauses at the CP level. The following examples more closely examine the structure of CP-linking in O’ob No’ok:

- (19) a. *Aap devin kon (aan) am veenkig.*
Aap dev-i-an **ko-n** (aan) am veenk-ig.
2SG.SUBJ arrive-COND **ko**-[AUX].1SG 1SG.SUBJ 2SG.OBJ be.together-FUT
‘If you come, I will join you.’ (Barragan 2024)
- b. *Aagɔʷian ko uu’un ua’adan as kaidʷ.*
Aagɔʷ-i-an **ko-∅** uu’u-n ua’ad-an as kaidʷ.
Tell-FUT-COND **ko**-[AUX]3 get.PL-COND take.PL-COND REP say.
‘“Tell him to get it and take it,” he said.’ (Barragan 2024)

Examples (19b) and (13) interestingly parallel each other in demonstrating that a straightforward analysis of *ku-* as a coordinating conjunction is not quite satisfactory even in cases where it links two clauses under the same CP node, as both instances

point to obviative subordination. The diachronic correlation between non-canonical DS SR and coordination is expected under an implicature-based account of SR, as suggested in Levinson (2000:58). SS marking is semantically specified as [+ referential dependence] and [+single complex action]. DS marking, however, is semantically general, being specified as [+/- referential dependence] and [+/- single complex action]. Thus, DS generates disjoint-reference implications by pragmatic opposition. Levinson (2000:59) also suggests that DS marking can come to have its own conversational implicatures conventionalized over time. In the case of the transition from Proto-Uto-Aztecan to Tohono O'odham, the GCIs of DS SR were conventionalized to clausal coordination.

In the following section, we explore Hale's (1983:13) suggestion that Tohono O'odham *ku-* originates from a Proto-Uto-Aztecan suffix **-ku ~ -ko*. To do so, we begin by illustrating additional synchronic and diachronic cognates throughout the Uto-Aztecan language family, culminating in a phylogenetic tree. The diachronic examples are drawn from the *Arte de la Lengua Névome* and the *Doctrina Christiana y Confesionario* as presented in Hale (1983:§6). The synchronic examples are drawn from reference grammars of a few Southern Uto-Aztecan languages (i.e., O'dam (Southeastern Tepehuán) and Wixárika (Huichol)) and Northern Uto-Aztecan languages (i.e., Ute and Hopi).

3.2 A diachrony and comparative typology of *ku-*

Following a comparative approach to diachronic lexical reconstruction, Hale (1983:16) suggests the Tohono O'odham obviative prefix *ku-* derives from a Proto-Uto-Aztecan subordinating suffix **-ku ~ -ko*. Numerous synchronic cognates in the language family support this claim.

In O'dam, the particle *cu* is categorized by Willett (1991:219–220) as an “additive conjunction used only with clauses,” signaling that “the action in the preceding clause is [...] necessary to enable the action in the clause introduced by *cu*.” Thus, Willett (1991:234) suggests that there is a common ground between *cu* and O'dam subordinators of purpose, cause, and reason, noting, however, that *cu* serves a broader purpose as a generalized CP conjunction between eventualities with a “higher degree of continuity” and can function as “something like an inflectable auxiliary” on which the subject enclitic is suffixed:

- (20) O'dam
Bai'p xi-minda' gu ja'á cu jòtom baiy-a' gu bav.
 TWD-2SG IMP-burn-FUT DET pot so fast cook-FUT DET beans.
 ‘Fire up that pot so the beans will cook fast.’ (Willett 1991:220)

Hale (1983:16), on the other hand, suggests that O'dam *cu* indicates a “break in continuity” between eventualities, as it is not consistently obviative between subject referents. These contradictory analyses can be reconciled if we extend obviative phenomena beyond subject reference to include temporally or causally ordered eventualities that remain, however, distinct between the two clauses (see also (13) in Tohono O'odham). We leave the specifics of such a proposal for O'dam to future research; however, we hold to the tentative conclusion that *ku-* and its cognates switch between subjects as well as distinct eventualities as markers of narrative discontinuity.

Comrie (1983:19) notes the occurrence of a DS suffix *ku-* in Wixárika. Unlike other Uto-Aztecan languages, the productive usage of the Wixárika SR system is limited to temporal clauses:

- (21) Wixárika
ʔuuka nua-ku, nee ne-petia.
 Girl arrive-**DS** [1SG] 1SG-leave
 ‘When the girl arrived, I left.’ (Comrie 1983:19)

In the much less closely related Ute, Givón (2011:102) notes the usage of a suffix *-ku* as a DS marker in “equi-object” verbal complements (22a) and a subordinator marker for “most adverbial clauses” (22b):

- (22) Ute
 a. *Mama-chi áapa-chi wíuuka-vaa-ku may-kya.*
 Woman-S[B] boy-O[B] work-IRR-**COMP** tell-ANT
 ‘The woman wants the boy to work.’ (Givón 2011:102)
 b. *...kulkwi-kwa-puga-y-ku, ’uwa-rugwa-puga-y-k...*
 fill-go-REM-O[B]-**SUB** him/O[B]-give-REM-OBJ-it
 ‘... when it (the bowl) filled up, (he) gave it to him...’ (Givón 2011:102)

Another cognate in the Northern branch of the Uto-Aztecan language family is also present in Hopi, where it is realized as [-q] from an underlyingly vowel-final/-qö/⁶ (Jeanne 1978:67). Jeanne (1978:183) remarks that it is the “sole obviative ending for adjoined clauses in Hopi”:

- (23) Hopi
ʔi-pava_j paki-q (píi?) pam_k qatipti.
 My-brother_j enter-**OBV** (then) he_k sat:down.
 ‘When my brother_j came in, he_k sat down.’ (Jeanne 1978:183)

⁶ The precise categorization of Hopi velar consonants has been much debated. Malotki (1983) takes/q/ to be a backed velar segment.

Another reflex of Proto-Uto-Aztecan **-ku ~ -ko* can be found in the Comanche *-ku* (Charney 1993:231–235). Interestingly, *-ku* surfaces on the verb of a subordinate clause if the subject of the verb of the subordinate clause is distinct from the subject of the verb of the main clause and if “the time of the verbs is simultaneous” (Charney 1993:231), as seen in the following example:

- (24) *[ninse wihnu uvásaʔeeku huhnupehtu nunuraʔeYU]*
nini-se wihnu u-pasa-ʔe-ku
 we=EXCL-CNTR and=then it=OBJ-dry-RPT:ASP-**ku**
hunu-peHtu=nu-nuta-ʔe-yu=
 creek-toward REDP-run-RPT:ASP-PROG:ASP
 ‘When it (mud) dried we ran for the creek.’ (Charney 1993:231)

In cases where the subjects of the two clauses are distinct and where the eventualities denoted by the verbs occur at different times, the embedded verb is suffixed by either *-h/H/ka =* or by *-h/H/kaku*. Crucially, *kaku* indicates a “longer duration for the subordinate verb” and combines *-h/H/ka =* and *-ku* (Charney 1993:232), demonstrating that the synchronic descendants of **-ku ~ -ko* are not limited to switching between subject referents but also serve different functions within the event structure of the clause.

Hale (1983:14) further notes the possibility that Mayo *-k ~ -ko* and Tubar *-ko* may also be cognates to Tohono O’odham *ku-*. Whether or not this conclusion in Hale (1983) is ultimately correct, the fact remains that the morpheme in question is widespread throughout the language family and consistently switches subject reference or identifies separate eventualities within a temporally ordered sequence. A phylogenetic representation is given in Figure 1.

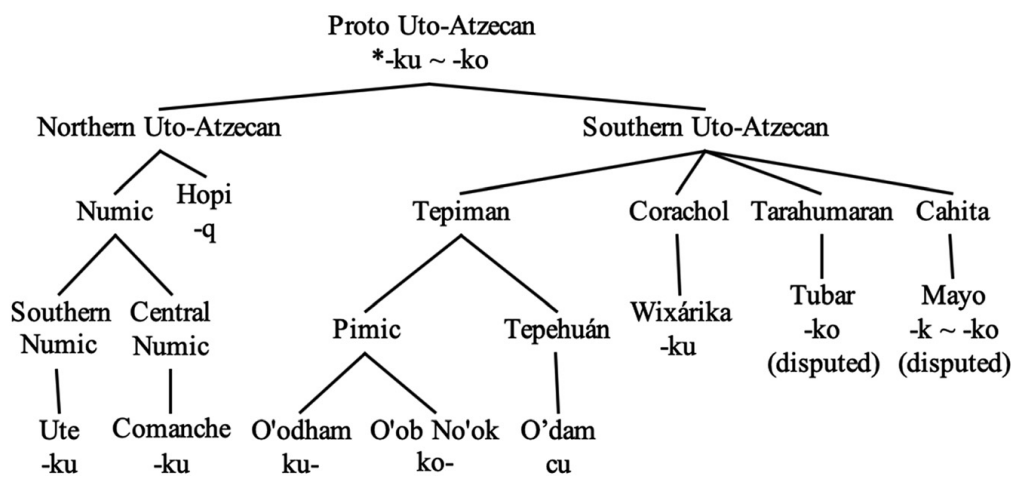


Figure 1: Phylogenetic tree of the Uto-Aztecan switch-reference marker.

However, there remains a split between the Tepiman branch and other more distantly related languages. In the former, it is a prefix hosting the auxiliary, and in the latter, it is a verbal suffix. This difference is schematized below:

- (25) Ute, Hopi, Wixárika
 (...V-ku) (... V)
 Protasis Main Clause Remainder

- (26) Tepiman languages⁷
 (...V) ku-AUX (...V)
 Protasis Main Clause Remainder

Thus, there must have been a reanalysis of the affixal nature of **-ku ~ -ko* in the Tepiman branch of the UA language family. Originally a post-verbal suffix, as in the other Uto-Aztecan languages mentioned above (Hale 1983:15), it was transcribed as a pre-nominal prefix in the earliest written records of the Tepiman branch, such as the *Arte de la Lengua Névome*, a grammar of O’ob No’ok (i.e., Névome) written by Jesuit missionaries in the 17th century and published by Buckingham Smith in 1862 alongside the *Doctrina Christiana y Confesionario*, a confessional and short book of doctrine. In the *Arte*, it surfaces preceding the second-person marker *p* and the auxiliary *-ta*, which are cognates with the Tohono O’odham second-person singular perfective *’apt* (Hale 1983:15):

- (27) Névome
Taso hakida ay si-m’ himi tani an’ t’
 Yesterday at:this:time hither really-you go order [PFV].1SG
igui, co
igui, OBV
’p’ ta ta pima ay s’ imi mu.
 [PFV].2SG ta NEG hither really-go DESI
 ‘Yesterday at this time, I ordered you to come here, but you didn’t want to come.’
 (Hale 1983:16)

Interestingly, it is not uniformly the case that is consistently obviative with respect to subject reference. Consider the following example:

⁷ Although it is unclear from corpus sources whether *cu* is a prefix in O’odam, it is nonetheless associated with the main clause remainder, not the protasis.

- (28) Névome
Dodaki Padre divia-na, co hunu ni maca-na.
 OPT priest come-SBJV, [OBV] corn me give-SBJV
 'Would that the priest would come to give me corn.' (Hale 1983:17)

In (28), the subjects of the two clauses are coreferential. However, this example fits in a broader understanding of *ku-* and its cognates as identifying separate eventualities within a temporally ordered sequence, as is characteristically the case for O'dam in (20).

As seen in §2, the auxiliary in O'odham consistently surfaces as the second constituent in the linear order. Thus, given a stage in the protolanguage where the entire protasis amounted to the first-place constituent, the structural profile of the protolanguage is as follows:

- (29) $(\dots V\text{-}KU) \underbrace{\quad\quad\quad}_{\text{PROTASIS}} \underbrace{\text{AUX} (\dots V)}_{\text{MAIN CLAUSE}} \text{REMAINDER}$

Hale (1983:18) suggests that the linear string in (28) could have been sufficiently ambiguous for the acquiring child to trigger a reanalysis of *ku-* as a prefix hosting the auxiliary. Such a reanalysis would be consistent with the distribution of other prefixes hosting the auxiliary in the left periphery, as we have already seen with the polar question complementizer in §3.1. As further evidence, also consider the complementizer *m-* introducing both adverbial relative clauses (30a) and CP complements (30b):

- (30) a. *Hegai ceoj mo cipkan 'o wuḍ ñ-we:nag.*
Hegai ceoj m-o cipkan 'o
 DEM.3SG boy COMP-AUX.IPFV.3SG work:IPFV.SG AUX.IPFV.3SG
wuḍ ñ-we:nag.
 COP POSS.1SG-brother.
 'That boy **that is working** is my brother.' (Zepeda 1983:105)
- b. *Hegai 'uwĩ 'o s-ma:c map 'a:pi mumku.*
Hegai 'uwĩ 'o s-ma:c m-ap 'a:pi
 DEM.3SG woman AUX.IPFV.3SG knowing COMP-AUX.IPFV.2SG 2SG
mumku.
 sick.
 'That woman knows (is knowing) **that you are sick.**' (Zepeda 1983:108)

As we can see, *m-* fits the pattern described thus far, where the auxiliary inevitably raises to the left periphery to suffix onto an overtly realized complementizer. Thus, *ku-* in synchronic Tohono O'odham has been reanalyzed to follow the broader pattern of complementizers in the language.

4 Conclusions

This work explored the syntactic and semantic functions of the Tohono O'odham *ku-* prefix as a marker of CP coordination, switch reference, and discourse continuity, paying special attention to its diachronic origins in Proto-Uto-Aztecan and its synchronic cognates throughout the language family. It analyzed how *ku-* patterns with other complementizers in Tohono O'odham as a prefix high in the left periphery of the clause, although its diachronic origins have been traced in the literature to a Proto-Uto-Aztecan post-verbal switch reference suffix **-ku ~ -ko*. In fact, in a number of Uto-Aztecan languages (e.g., Ute, Comanche, Tubar), it has remained a suffix. Furthermore, it appears to be the case in Tohono O'odham and throughout the language family that cognates of *ku-* not only switch between subject referents but also play an important role in switching between eventualities denoted in the clause and discourse with respect to their relative order of occurrence.

Thus, the novel import of this work is that switch reference systems in Uto-Aztecan languages should also be analyzed primarily considering the sequence of distinct eventualities in the discourse, even with coreferential subjects, and not exclusively as markers of subject discontinuity. Given these generalizations, further research would have to consider the distribution of temporal adverbs in clauses containing an SR morpheme and consequent temporal restriction on subject-coreferential clauses with *ku-* and its cognates. The pervasiveness itself of descendants of Proto-Uto-Aztecan **-ku ~ ko* and the different ways in which they have been reanalyzed can shed light on different syntactic strategies to switch between subjects and eventualities in adjoined clauses. An implicature-based theory of SR can account for non-canonical DS SR and offer an intriguing path forward in understanding how the GCIs associated with this type of DS SR marking can become conventionalized to specific aspects of discourse.

Appendix: Abbreviations

1	first person
2	second person
3	third person
ANT	anterior (aspect)
AUX	auxiliary
CAUS	causative
CONJ	conjunction
COND	conditional
COP	copula
COMP	complementizer
CP	complementizer phrase

DET	determiner
DEM	demonstrative
DESI	desiderative
FUT	future
INDF	indefinite
IPFV	imperfective
LD	locative determiner
M	masculine
N	neuter
NP	noun phrase
OBJ	object
OBV	obviative
OPT	optative
POSS	possessive
PF	perfect (tense)
PFV	perfective
PL	plural
PRES	present (tense)
PROG	progressive
REM	remote (aspect)
SBJ	subject
SBJV	subjunctive
SG	singular
SUB	subordinator (suffix)
TWD	toward
USIT	usitative
VP	verb phrase

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Q5

Q6

Q7

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Bionote

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