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Arguments and adjuncts in O'dam: language-specific realization of a cross-linguistic distinction

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Arguments and adjuncts in O'dam: language-specific realization of a cross-linguistic distinction

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Rest in Peace

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Arguments and adjuncts in O'dam: language-specific realization of a cross-linguistic distinction

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This dissertation examines the properties that distinguish argument and adjunct dependents in the O'dam language (Tepiman<Uto-Aztecan) of Durango, Mexico. Verbal dependents, which express the participants involved in the eventuality described by the verb, are divided into different grammatical relationships with that verb (e.g. subject, object, oblique, etc.). Such grammatical functions are commonly assumed to be grouped into two overarching functions: arguments, which express core participants of a predicate and are closely tied to the verb, and adjuncts, which express peripheral participants of a predicate and lack any special morphosyntactic status in regards to the particular verb. There has long been an attempt to identify a cross-linguistically valid set of grammatical properties that will cross-linguistically distinguish arguments from adjuncts.

I show that O'dam adds a typologically new type of language that does not conform to the standard view of the argument/adjunct distinction. Head-marking underpredicts the number of arguments that ditransitives and denominal verbs have, while most other standard cross linguistically-applied tests for different grammatical function in a large part do not distinguish dependents at all. Instead, the evidence for a thematically-rooted distinction between arguments and adjuncts is found in argumenthood tests that mostly constitute wholly language-internal properties.

I propose two new language-specific tests of argumenthood specific to O'dam: preverbal (discontinuous) quantification and applicativization. In addition to subjects and objects, preverbal quantification distinguishes different types of benefactive objects, and distinguishes

recipients from recipient benefactives. The output of applicativization is hierarchically determined by the valency and argument structure of the verb, providing another probe into underlying argument structure. However, while there is overlap among the various argument-hood tests, the subsets of dependents each test identifies as an argument are not co-extensive. Valency effects on applicativization do not match such effects on head-marking, nor do either line up with preverbal quantification. Rather than finding a uniform behavior for arguments, I ultimately show that adjuncts are the only grammatical function with uniform syntactic behavior, purely because they are the only set of dependents that consistently fails every test. Notable among these are instruments and locatives, which behave as adjuncts regardless of their semantic relation to a predicate. Additionally, I show that O'dam realizes many of the properties predicted to hold for a Pronominal Argument Language (Jelinek 1984), suggesting that argument saturation is done within the verb. However, the interpretation of overt and covert nominals suggests that such argument saturation is not done through an equivalent to a lexical pronoun. This investigation of the argument/adjunct distinction in O'dam adds a more comprehensive empirical account of O'dam verbal syntax, and suggests that the cross-linguistically useful notion of distinctions between grammatical function can sometimes play out through almost entirely language-specific properties.

Table of Contents

List of Tables

List of Figures

Chapter 1

The distinction among grammatical functions and the properties associated with them

The initial question I intended to explore in this dissertation was whether verbal affixes which co-reference the subject and primary object in O'dam should be considered agreement affixes or incorporated pronouns. That question presupposes that I know what saturates verbal arguments in O'dam, and simply asks the question of where those saturation points are. However, it quickly became clear that that presupposition was wrong and that the question of what saturates syntactic arguments in O'dam is not so easily answered. This dissertation intends to show that O'dam has something to teach linguists about the nature of the grammatical functional distinctions more broadly.

Across languages, verbal dependents express the participants involved in the eventuality described by the verb. Within the clause, different dependents are divided among different grammatical relationships with the head verb. These different relations are often called "grammatical functions," and include classes like subjects, objects, obliques, etc. The various grammatical functions are, in turn, distinguished by different morphological and syntactic properties (e.g. case marking, positional distinctions, etc.). Theories differ on the exact status of grammatical functions within the syntactic architecture of language. Some theories treat grammatical functions as primitive notions, with the various morphosyntactic properties being derived from those functions.[1] Other theories do not assume a separate notion of grammatical function and, instead, derive the relevant morphosyntactic properties from

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[1]For example, LFG treats argument functions as an separate module (f-structure) from the semantic representation of a predicate (a-structure) and the structural exponence (c-structure) (Belyaev forthcoming; Findlay et al. forthcoming).

configurational relations; see Müller (2023: §1.7) and also the articles in part 1 of Davies & Dubinsky 2001.[2] Regardless of the specifics, dependents are inherently distinguished by their distinct functional relationships to the verb (Falk 2006; Nikitina 2008; Nikolaeva 1999; Perlmutter & Postal 1983; Toivonen 2007; Zaenen et al. 1985).

At least since Pāṇini, linguists have intuited that the various grammatical functions can be initially grouped into two basic overarching categories: arguments and adjuncts. Arguments express core, essential participants of the eventuality described by the predicate. This privileged semantic tie to the predicate is reflected in a closer structural tie to the verb that heads the predicate.[3] Within the class of arguments there may be further distinctions. For example, objects and subjects are not equi-local to the verb head (Harley et al. 2017; Kratzer 1996; Tollan & Oxford 2018; Wood 2014). However, both are generally assumed to have a closer tie to the verbal head than adjuncts (Ackema 2015; Dowty 2003; Zyman 2021). Adjuncts express participants that are more peripheral to the predicate and generally represent optional or additional information. While adjuncts may express participants that are entailed to exist already by the predicate, they are generally less privileged participants of the predicate and less closely tied to the syntax of the verb.

Prior work has suggested that arguments and adjuncts are furthermore identifiable by a cross-linguistically valid set of grammatical properties (Forker 2014). Typically, syntactic theories treat argument versus adjunct as a categorical distinction and predict that the set of grammatical properties will draw a binary distinction. These properties are usually defined such that arguments are a well-defined group with a series of co-occurring properties that adjuncts lack. These properties are examined through syntactic tests, which are syntactic processes that only affect argument functions and not adjunct functions. By convention, "passing" an argumenthood test means being affected by the syntactic process (i.e. act like an argument), while failing a test means that a dependent is not affected by the argumenthood

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[2]For example, GB and Minimalist work essentially places grammatical functional information and properties associated with different grammatical functions within the configurational syntax (see Chomsky 1965:68ff; see also Aldridge 2007; Baker 2001; Lasnik 2001; Ura 2000)

[3]Exactly how this 'closeness' is instantiated or measured depends wildly on one's theoretical framework. Here I am using the term to refer to the general intuition about grammatical functions in the theoretical literature on the matter.

diagnostic (i.e. act like an adjunct).

However, some languages have challenged how universal those characteristics are, for example, by caching out argument and adjunct properties in a gradient way, complicating our understanding of the centrality of event participants, or by instantiating grammatical functions in syntactic elements other than XPs. In this dissertation, I will examine the argument/adjunct distinction in O'dam, which I will show adds a typologically new type of language that does not conform to the standard view of the argument/adjunct distinction. There is still evidence for a thematically-rooted distinction between arguments and adjuncts, but the various tests for argumenthood found in O'dam mostly constitute wholly language-internal properties that are not like those found in other languages. Standard cross-linguistically applied tests of grammatical function distinction in a large part do not distinguish dependents at all. Furthermore, while there is overlap among the various argumenthood tests, the subsets of dependents each test identifies as an argument are not co-extensive. Rather than finding a uniform behavior for arguments, we will see that adjuncts are the only grammatical function with uniform syntactic behavior, purely because they are the only set of dependents that consistently fails every test. In the end the basic distinction between arguments and adjuncts will mirror those found in other languages. Certain semantic participants, like agents, patients, and recipients, seem to have special syntactic status, as in other languages. Moreover, the combinations of these participants that constitute verbal valency will additionally look fairly typical. Where O'dam differs is in the ways the exact ways that the argument/adjunct distinction is instantiated. This supports that the distinctions among grammatical functions are potentially universal, especially between arguments and adjuncts. However, the syntactic properties that manifest those distinctions are subject to more cross-linguistic variation than typically assumed.

More specifically, only one commonly considered property of arguments, head-marking, seems to distinguish arguments from adjuncts, but it crucially only makes a partial distinction. This will motivate me to investigate two more language-specific tests: applicativization and preverbal quantification. Both will distinguish a set of arguments that partially overlaps with each other and with head-marking, but they will also pick out dependents that are not treated as arguments by the other two tests. The output of applicativization will

furthermore provide evidence for underlying verbal valency, since the number of arguments a verb takes and what overall participants are entailed to exist by the verb will determine how its valency can be increased. In particular, we will see a sharp division between intransitive and transitive verbs, and among transitive verbs between those that underlyingly have certain types of unexpressed participants beyond their subjects and objects versus those that do not. I will furthermore suggest that this motivates a thematic role hierarchy as necessary for understanding how applicativization ultimately works in O'dam. Preverbal quantification will distinguish various entailed but non-cross-referenced participants from one another in ways that will simultaneously shore up and complement verbal cross-referencing as indicative of argumenthood. It will also offer at least some tentative reason for thinking that perhaps verbal arguments in O'dam are saturated within the morphological verb itself and not technically by the dependent XPs.

Before turning to the specifics of O'dam, in §1.1 I will first outline the relatively conventional view of how syntactic properties are seen differentiating grammatical functions. The standard view is one where a number of syntactic properties characterize argument functions and mutually imply one another. In §1.2, I will then discuss three case studies that offer different challenges to the conventional connection between grammatical functions and the syntactic properties they bear. In §1.2.1 I will discuss Ariel et al.'s (2015) proposal that argument and adjunct functions are differentiated by a continuum of syntactic properties. They show that Hebrew dative constructions pass a greater or fewer number of argumenthood tests depending on where they lie on the continuum. On this view, a dependent gains syntactic properties as it moves closer to being a core argument on the continuum of grammatical functions, and grammatical functions can be differentiated based on the number of argumenthood tests a dependent passes. In §1.2.2 I discuss the case of Oneida, which poses a significant challenge to the view that argument versus adjunct are consistently assigned to a fixed set of syntactic properties across all contexts of a given verb. Instead, the group of putative argument functions is only categorized as such so long as their referents are animate, inanimates categorically lack any of the morphosyntactic properties of argument functions in the language. Then in §1.2.3 I discuss the Pronominal Argument Hypothesis, which proposes that only certain elements within the verbal substructure can have argument

functions. Dependents outside of the verb are undifferentiated based on grammatcial function and are only anaphorically tied to grammatical functions within the verb. O'dam appears to be situated in the middle of these challenges: the tests do not seem to stack or imply each other; a single test is sufficient (but not necessary) to characterize an argument function. Unlike Oneida, the distinction between argument and adjunct functions in a clause seem to hold across referents (e.g. animate versus inanimate). O'dam shows a number of properties of a Pronominal Argument Language, and there is some evidence that the structure of the verb itself, rather than V-external dependents, bear the argument functions. By the end of this chapter I will have set the larger theoretical stage into which O'dam can enter in Chapter 2.

1.1 Arguments, Adjuncts, and their characteristics

> "Unfortunately, while most linguists agree that the distinction between arguments and adjuncts is real, no consensus currently exists as to its basis, the boundary between the two classes, or its role in grammar. In particular, there is no generally agreed upon answer to the following question: what are the criteria that determine which semantic dependents are included in the representation of particular lexical entries?" (Koenig et al. 2003: 68)

The distinctions among grammatical functions have long been intuited by people studying linguistic structure. Subjects, direct objects, indirect objects, controlled complements, etc. are all intuited to be necessary grammatical functions of a given predicate, while phrasal and clausal obliques are intuited to be optional extra information in a clause. These groups are often split into argument functions and adjunct functions, respectively, and have been a core aspect of syntactic theory as far back as Tesnière (1959); see also Vater (1977). Modern theories of syntax all essentially agree on the argument/adjunct functional distinction as a primitive aspect of grammatical structure, regardless of whether they are Generativist (Bresnan 1982; Chomsky 1981, 1995; Pollard & Sag 1994; van Valin & LaPolla 1997) or not (Croft 2001; Goldberg 2005; Witzlack-Makarevich & Bickel 2019). While this functional distinction has been engrained in syntactic theory, it has been difficult to find a consistent definition of argument versus adjunct functions that will hold cross-linguistically. Because of this, there have been a number of properties said to characterize dependents that bear

an argument function and not an adjunct function. I first discuss some semantic desiderata for the argument/adjunct distinction, and then I talk about the grammatical outgrowths of that distinction.

1.1.1 A illustrative view of argumenthood tests

Argument functions are assigned to a subset of entailed participants of a predicate. This has generally been intuited by syntacticians, for example Haegeman (1994: 44) identifies participants as argument functions if they are "the participants minimally involved in the activity or state expressed by the predicate." The problem with the notion of minimally involved participants is that there are often verbs which do not realize all of their entailed participants as arguments (see Ackema 2015; Cappelen & Lepore 2005; Moura & Miliorini 2018) and it is not clear if semantic entailment is adequate to describe 'minimally involved' (Barbu 2015, 2020; Barbu & Toivonen 2016a,b; Bleotu 2019; Rissman 2013; Rissman et al. 2015). Koenig et al. (2003) sidestep the problem created by Haegeman's (1994) definition by refining the semantic obligatoriness of argument functions in their proposed Semantic Obligatoriness Criterion, shown in (1). The Semantic Obligatoriness Criterion states that only a participant entailed by the predicate can bear an argument function (see also Dowty 1982).[4] In contrast, a participant that is not entailed by a predicate necessarily has an adjunct function.

(1) **Semantic Obligatoriness Criterion**: If r is an argument participant role of predicate P, then any situation that P felicitously describes includes the referent of the filler of r. (Koenig et al. 2003: 72)

Following Koenig et al. (2003), I assume that entailment is necessary, but not sufficient, to be an argument function. This is to say, that I consider any participant not entailed by a predicate to be automatically an adjunct. The question is what subset of entailed participants are assigned to argument functions and what syntactic properties unite the

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[4]Expletives are a major exception to semantic entailment because they often display syntactic properties of arguments, but are semantically vacuous; see for example Brody (1993), Ruys (2010) and Gluckman (2021). I will be leaving expletives aside for the purposes of this dissertation. I have no strong evidence for or against expletive subjects in O'dam.

argument functions as a natural class in O'dam. I consider the argument/adjunct distinction to refer to a purely syntactic distinction and this dissertation will only deal with O'dam syntax.

This connection between semantics and grammatical function allows us to capture facts like the correlation between verbal valency shifts and changes in entailments of the predicate. Any increase in syntactic structure requires the semantic entailments to support that increase. For example, in the causative-inchoative alternation in (2) the causation entailments correlate with the verbs' syntactic valency. The transitive variant in (2a), which has an agent subject and a patient object, entails that an agent caused the breaking event. In contrast, the intransitive variant in (2b), which only takes a patient subject, does not entail an agent caused the event (see Koontz-Garboden 2009, Beavers & Koontz-Garboden 2013a,b, and Horvath & Siloni 2011, 2013 for an elaboration of this as it relates to Spanish *se*). Likewise, the double object construction in (3a) entails that Gertrudis was at least an intended recipient for the cake that Humberto baked, whereas no such entailment is present in the single object construction in (3b).

(2) a. *John broke the vase* ⇒ an agent caused the vase to break.

  b. *The vase broke* ⇏ an agent caused the vase to break.

(3) a. *Humberto baked Gertrudis a cake* ⇒ a recipient was intended to receive the cake.

  b. *Humberto baked a cake* ⇏ a recipient was intended to receive the cake.

At the same time, the Semantic Obligatoriness Criterion does not require that every semantically entailed participant has an argument function. For example, verbs like *cut* are generally assumed to entail instrument participants (Guerssel et al. 1985; Lüpke 2007). However, instrument PPs often do not pattern like subjects and objects (Donohue et al. 2004; Rissman et al. 2015). While predicates can have any number of entailed participants[5], there is a paucity of hypertransitive verbs or verbs with a valency greater than four, suggesting that languages have a limit on the number of arguments a given verb can have (Dixon & Aikhenvald 2018; Hornstein & Nunes 2008; Kearns 2011; Kittilä 2012; Marantz 2013).

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[5]See for example Quine (1960) and Apresjan's (1992) discussions of 'finance' and 'dispatch' verbs.

Moving forward then, argument functions can only be borne by entailed participants of the predicate formed by the verb, but not all entailed participants have argument functions.

Let us examine a few properties of argument functions in English and German. Subjects and objects as grammatical functions are generally assumed to be realized by obligatory elements in the clausal structure. In contrast, obliques and adverbials are generally optional elements of a clause. This means that obligatoriness is a test of argument functions: being an argument function means having an oblgatory exponent in the clause. We see first in (4)-(7) that all four verbs must appear with two nominals. One nominal is in each case the subject (the breaker/hitter) while the other is the object (the breakee/hittee). We can also see that locative, temporal, and instrumental phrases can occur with *break* and *hit* verbs, but are optional in all cases. This suggests they are adjunct functions (i.e. adverbials and obliques).

(4) English

    a.   *(I) broke *(the cup)

    b.   I broke the cup (with the hammer)

(5) a.   *(I) hit *(the ball)

    b. I hit the ball (on Tuesday) (at the park) (with my favorite bat)

(6) German

    a.
(Ich)	*zerbreche*	*(die*	*Tasse)*
I	break	the	cup

      'I break the cup'

    b.
Ich	*habe*	*(gestern)*	*die*	*Tasse*	*(im*	*Park)*	*(mit*	*dem*	*Schläger)*	*zerbrecht*
I	have	yesterday	the	cup	in	park	with	the	bat	broke

      'I broke the cup yesterday in the park with the bat

(7) a.
Ich	*habe*	*(den*	*Ball)*	*geschlagen*
I	have	the	ball	hit

      'I hit the ball'

b. *Ich habe (gestern) den Ball (im Park) (mit dem Schläger) geschlagen*
   I   have yesterday the ball in park with the bat   hit

   'I hit the ball yesterday in the park with the bat'

Argument functions must be borne by a unique element in the phrasal syntax (see Bresnan & Mchombo's 1987 discussion of the Subject Marker in Chicheŵa). This means that argument functions cannot be exponed by multiple dependents in a clause, while multiple dependents can have the same adjunct function. In (8)-(11) the iterability test divides the verbal dependents into the same functional groups as the obligatoriness tests. In the (a) examples, we see that the dependents which were obligatory are also non-iterable. Likewise, in the (b) examples, the optional dependents are iterable. Here, then, obligatoriness and iterability seem to mutually imply each other.[6]

(8)   a.   I (*you) broke the cup (*the vase)

       b.   I broke the cup [on Wednesday]$_{Temporal}$ [at 6:30]$_{Temporal}$

(9)   a.   I (*the woman) hit the ball (*the bag)

       b.   I hit the ball [on Wednesday]$_{Temporal}$ [at the park]$_{Loc}$ [at 6:30]$_{Temporal}$ [from home base]$_{Loc}$

(10)   German

       a. *Ich (*du) zerbreche(*st) die Tasse (*der Topf)*
          I you   break   the cup the   pot

          'I break the cup'

       b. *Ich habe (gestern) die Tasse (im Park) (mit dem Schläger) zerbrecht*
          I have yesterday the cup in park with the bat   broke

          'I broke the cup yesterday in the park with the bat

---

[6]Verbs like *eat* and *drink* are a case where argumenthood does not imply obligatoriness because they allow object drop. However it has been noted that this object drop only occurs under specific pragmatic circumstances (Campos 1986; Filmore 1986), and such dropped objects have a specific interpretation that differentiates them from standard optional adjuncts. I have found no evidence of object-drop in O'dam and, therefore, I will leave such cases to the side, although see Sigurðsson (2011) for further discussion.

(11) a. *(Ich)   habe   *(den   Ball)   geschlagen
          I   have   the   ball   hit

          'I hit the ball'

      b. Ich   habe   (gestern)   den   Ball   (im   Park)   (mit   dem   Schläger)   geschlagen
          I   have   yesterday   the   ball   in   park   with   the   bat   hit

          'I hit the ball yesterday in the park with the bat'

Along with being both obligatory and non-iterable, argument functions are specific to their verb. The first way we can see this is that a verb selects for an argument with a particular thematic role. For example, an argument must be licensed by a particular verb and cannot occur with a generic, anaphorically interpreted verb (Hartmann et al. 2013; Haspelmath 2014:7).[7] We see in (12)-(15) that the subject and object cannot be introduced by a co-occurring light verb, as in the (b) and (c) examples, but the instrumental, temporal, and locative expressions can, as in the (d) examples. We have now seen three instances where arguments have with a certain set of properties (obligatoriness, non-iterability, verb specificity), while adjunct dependents lack any of those properties.

(12) English

      a. He broke a cup

      b. *He broke and he did a cup

      c. He broke it and he did it with a hammer/on Tuesday/at the park

(13) a. He hit a ball

      b. *He hit and he did a ball

      c. He hit it and he did it with a bat/on Tuesday/at the park

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[7]This is based on Hartmann et al.'s (2013) definition of an argument as:

An argument of a verb is a phrase whose occurrence is made possible by a specific verb, and which therefore cannot occur with a generic verb. This can be tested by attempting to move a phrase into a neighbouring clause with an anaphoric verb... Adjuncts, by contrast, are not tied to particular verbs and can therefore be moved out into a clause with an anaphoric verb...

(14) German

    a. *Er   hat   eine   Tasse   zerbrecht*
         he   have   a   cup   broke

       'He broke a cup'

    b. **Er   hat   zerbrecht   und   das   hat   er   eine   Tasse   getan.*
         he   have   broke   and   a   cup   done

       'He broke and he did it a cup'

    c. *Er   hat   eine   Tasse   zerbrecht   und   hat   er   mit   meinem*
         he   have   a   cup   broke   and   have he   with   my

        Schläger/gestern/im   Haus   getan
        bat/yesterday/in   house   done

       'He broke a cup and he did it with my bat/yesterday/in the house'

(15) a. *Er   hat   einen   Ball   geschlagen*
         he   have   a   ball   hit

       'He hit a ball'

    b. **Er   hat   geschlagen   und   das   hat   er   einen   Ball   getan.*
         he   have   hit   and   a   ball done

       'He hit and he did it a ball'

    c. *Er   hat   einen   Ball   geschlagen   und   hat   er   mit   meinem*
         he   have   a   ball   hit   and   have he   with   my

        Schläger/gestern/im   Haus   getan
        bat/yesterday/in   house   done

       'He broke a cup and he did it with my bat/yesterday/in the house'

Examining just obligatoriness, verb specificity, and iterability then, it seems that we find several properties that cluster around argument functions. Unfortunately, it is not the case a group of syntactic properties cleanly clusters around exponents of argument functions and differentiates them from adjunct functions, as we will see in §1.2.

1.2   Less canonical systems of arguments and adjuncts

As we look beyond English and German and the tests I discussed in §1.1 we will see a much messier picture of the connection between grammatical functions and their syntactic properties. Syntactic theories need a way to account for the spectrum of distinctions between arguments and adjuncts (Arka 2014; Toivonen 2021; Tutunjian & Boland 2008). I now turn to three case studies to further show that it is not tenable to say that syntactic processes will divide argument and adjunct functions in a clean, binary way.

1.2.1   Hebrew Datives

In this section, I discuss the case of Hebrew datives, which Ariel et al. (2015) show do not permit a clean binary distinction between grammatical functions (see also Berman 1982; cf. Borer & Grodzinsky 1986). A dative construction in Hebrew is characterized by the presence of the *l-* prefix marking an expression. The constructions they analyze are shown in (16a)–(16h), with the dative marker in bold. The name of each construction refers to its function: a Governed dative marks a transitive object, shown in (16a); a Predicative Possessor dative expresses the possessor in a predicative possession construction, shown in (16b); a Recipient dative expresses the recipient thematic role of a transfer of possession verb, shown in (16c); an External Possessor dative expresses the possessor of a verbal object, as in (16d); an Affectee dative expresses either a benefactive, as in (16e), or malefactive, as in (16f), affectee of an event; an Ethical dative expresses an external experiencer or non-affected beneficiary; a Coreferential dative is coreferenced with some verbal subject or object. Ariel et al. (2015) run a series of tests to probe the argument/adjunct properties of each dative construction.

(16)   a.   **Governed**

ani	*eezor*	***lax***	*maxar.*
I	help.FUT.1SG	to.you	tomorrow.

'I will help you tomorrow.'

   b.   **Predicative Possessor**

ze	*ma*	*she-yesh*	***li.***
this	(is)	what	that-there.(is)

'That's what I have.'

c.   **Recipient** of a transfer verb
   *az   natata   **la**   et   ha-telefon   shel   maya?*
   so   gave.PST.2SG.M   to.her   ACC   the-telephone   of   Maya?

   'So you gave her Maya's phone number?'

d.   **External Possessor**
   *hi   lo   roca   she-yexatetu   **la**   ba-xayim.*
   she   not   want.PRS.F   that-poke.FUT.3PL   to.her   in.the-life

   'She doesn't want people to rummage around in her life.'

e.   **Affectee**: **Benefactive**
   *hexlafti   **lax**   oto.*
   change.PST.1SG   to.you.SG.F   him

   'I changed him (the baby) for you.'

f.   **Affectee**: **Malefactive**
   *ze   kara   **LA!**   asu   **LA!***
   It   happen.PST.3SG.M   to.her!   did.PST.3SG   to.her

   'It (her$_i$ daughter$_j$'s murder) happened to HER$_i$!, They did it to HER$_i$!'

g.   **Ethical**
   *taxziku   **li**   maamad   sham!*
   hold.IMP.2PL   to.me   on   there!

   'Hang in there (for me)!'

h.   **Coreferential**
   *ve-ata   ka-ragil,   roe   **lexa**   srat-im?*
   and-you,   as-usual,   watch.PRS.M   to.you   movie-PL?

   'And you, as usual, are (leisurely) watching movies?'

(Ariel et al. 2015: 260-1)

Ariel et al.'s (2015) first test, obligatoriness, consists of testing whether the omission of a particular type of dative construction leads either to ungrammaticality or a different interpretation of the sentence (i.e. ungrammaticality on the intended interpretation). For example, the omission of the governed dative in (17a) permits a generic reading of the dative participant, but for the External Possession Dative in (17b), the dative phrase is obligatory to express the dative participant.

(17)   a.   Governed Dative
       adonai   *tamid*   *ozer*   **Ø**   *kshe-hu*   *roe*
       God   always   help.PRS.SG.M   (people)   when-he   see.PRS.3SG.M

       she-menasim   *ve-mashkiim*
       that-try.PRS.PL.M   and-invest.PRS.PL.M

       'God always helps when he sees that one makes an effort and invests.' (Ariel et al.
       2015: 278)

   b.   External Possession Dative
       *noflot   *ha-shina-im*   **Ø**   *be-gil*   *shesh*
       fall.PRS.PL.F   the-tooth-PL   (to.children) at-age   six

       'Teeth fall off (*to children) at age six.' (Ariel et al. 2015: 279)

The next test they used was whether the dative could participate in a reflexive relation, following the binding conditions set out in Reinhart & Reuland (1993). On this test they find a range of results which they use to point to their degree of grammaticization. They argue that Governed Datives show the most argument-like result because they are obligatorily marked reflexive for reflexive interpretations, as in (18).

(18)   Governed Dative
       ha-im   *yahadut*   *eropa*   *azra*   **le-acma?**
       Question.particle   Jewry   (of)   Europe   help.PST.3SG.F

       'Did European Jewry help itself?' (Ariel et al. 2015: 280)

In contrast, Ethical and Coreferential datives simply cannot be reflexively bound by any other verbal dependent. In between these, we find cases like Benefactive datives, where a reflexively interpreted dative can be either reflexively marked, as in (19a), or not, as in (19b).

(19)   Benefactive Dative

   a.   *hu*   *kana*   **le-acmo**   *mexonit*   *dey*   *yeshana.*
       he   buy.PST.3SG.M   to-himself   car   rather   old.F

       'He bought himself a rather old car.'

   b.   *hu*   *kana*   **lo**   *olar*   *xad.*
       he   buy.PST.3SG.M   to.him   pocket.knife   sharp.M

       'He bought himself a sharp pocket knife.'   (Ariel et al. 2015: 281)

They further apply a *do so* anaphora test, following Huddleston (2002), where they examine whether the different types of datives can co-occur with a *do so* replacing verb, using *'asa 'oto davar* 'do the same thing'. Co-occurrence with a *do so*-replaced verb is an adjunct-like property. Their Centrality and Innovative Meanings tests refer to the extent to which the dative expresses a more central or more peripheral event participant[8] and the extent to which the dative participant is specific to the verb or generalized to the dative construction. Their Paraphrasability test examines whether a paraphrase is possible by some other expression (e.g. it is generally difficult to paraphrase arguments of a verb) and whether the paraphrase requires additional predication. Ariel et al. (2015) use a Referentiality test to test the extent to which different dative constructions project discourse-trackable participants using properties like the ability to receive focal accent and conjoinability with other nominals. Following Berman (1982), they test the extent to which the participants expressed by the Hebrew dative constructions must be interpreted as affected by the event (although see Beavers 2011b for criticisms of different measures of affectedness). Ariel et al. (2015) test the Subjectivity of the dative, or the extent to which the participant expressed by the dative affects the construal of the event, for example, a singing event can be construed differently if it is aimed towards a baby versus a stadium audience (see also Al-Zahre & Boneh 2010).

They additionally test the extent to which the dative expression expresses an entailed participant of the event (Truth Conditionality 1) and whether a proposition can be judged as true if the dative participant is incorrectly associated with the event. For example, we see that the Ethical Dative in (20) can be cancelled as a participant, but not the External Possessive Dative in (21).

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[8]They give the example of *for* expressions with the verb *wait*, where *wait for me* expresses a participant that right bounds the event (the event ends when that participant arrives). In contrast, a benefactive use of *for*, as in a police officer saying *wait right there for me!*, expresses a peripheral event participant.

(20) Ethical Dative

    a.   A: *ani*   *zoxer-et*   *she-hi*   *xal-ta*   ***le-moshe***
             I   remember-PRS.SG.F   that-she   get.sick-PST.3SG.F   to-Moshe

             be-abaabuot   *ruax*   *ve-neelacnu*   *le-ashpez*
             with-chicken.pox   and-have.PST.1PL   to-hospitalize   her

             ota.   *le-xodsh-aim.*
             for-month-DU.

        'I remember that she got sick with chicken pox on Moshe and we had to hospitalize her for two months.'

    b.   B: *naxon,*   *aval*   *moshe*   *kvar*   *lo*   *haya*   *ba-xayim*   *az.*
             right,   but   Moshe   already   not   be.PST.SG.M   in.the-living   then.

        'Right, but Moshe was no longer alive by then.'   (Ariel et al. 2015: 289)

(21) External Possession Dative

    a.   A: *hi*   *shavra*   *le-dan*   *et*   *ha-shinaim*   *lifnei*   *xodesh.*
             she   break.pst.3sg.f   to-Dan   acc   the-teeth   before   month

        'She broke Dan's teeth a month ago.'

    b.   B: *?naxon,*   *aval*   *ze*   *haya*   *le-mixael.*
             right,   but   it   be.PST.SG.M   to-michael.

        ?Right, but it was Michael's teeth (she broke)   (Ariel et al. 2015: 290)

Ariel et al. (2015) summarize their findings in Table 1.1, which gives the results of each test for each dative. Cells with N/A indicate that the test was not applicable for the dative (i.e. the dative's behavior is undefined). Cells with a 0 are cases where the dative expression behaved like an adjunct, whereas cells with 1+ are cases where a dative patterned with arguments. Because Ariel et al.'s (2015) study is about grammaticization, they permit non-binary results, where numbers 1-4 allow for a gradience of passing a test. Importantly, the datives can be grouped purely based on whether they passed a test (1+) or not (0).

Diagnostic	Coreferential	Ethical	Benefactive	External Possession	Transfer	Predicate Possession	Governed
Obligatoriness	0	0	0	0	1	1	1
Reflexive Relation	0	0	1	2	2	3	4
*do so-*anaphora	0	0	0	0	1	N/A	2
Centrality	0	0	1	1	2	2	2
Paraphrasability	0	0	1	2	3	4	4
Referentiality	0	1	1	1	1	1	1
Functional conservation	N/A	0	0	0	1	1	1
Innovative meanings	N/A	0	1	2	3	3	4
Subjectivity	0	0	1	1	2	2	2
Truth-conditionality (1)	N/A	0	1	1	1	1	1
Truth-conditionality (2)	0	0	0	0	1	1	N/A
Total Differences	–	1	6	3	8	2	3

Table 1.1: Numbers represent extent of grammaticalization, where 0 is not grammaticalized (adjunct-like), 1+ is gradient of grammaticalization (argument-like). N/A means that the test is not applicable to the given dative construction Ariel et al. (2015: 293).

In Table 1.1 we see that there seems to be a set of datives that are entirely adjunct-like, namely Coreferential and Ethical datives and strongly argument-like, namely, Governed, predicate possession and recipient/transfer datives. However, the conventional view of argument and adjunct functions offers no way for midway functions like Benefactive and External Possession datives. They seem to pass some tests, they also fail a number of tests. Ariel et al. (2015) propose that the properties of the datives shown in Table 1.1 show a cline of grammaticization. However, we could also take the results in Table 1.1 to show a ternary distinction between argument functions, adjunct functions, and semi-argument functions. While Hebrew poses a challenge to a strict binary distinction of grammatical functions, syntactic properties still seem to cluster around a small set of grammatical functions. I next turn to Oneida, where verbs do not seem to select for a fixed set of thematic roles, and instead dependents seem to have argument or adjunct functions depending on the animacy of the participant they express.

1.2.2 Oneida argument structure

The distinction between syntactic argument and adjunct functions can be gradient, as in §1.2.1. However, verbs in most languages have an identifiable valency. For example, a verb that selects for an agent and a patient will consistently pattern as a transitive verb (i.e. it will have a subject and object) regardless of the specific non-thematic properties of the particular agent and patient participants. Instead, valency shifts (e.g. (de-)transitivization) and argument reordering (e.g. passivization and antipassivization) are generally driven by modification to the verb, which in turn modifies the syntactic properties of the argument functions. Yet Koenig & Michelson (2015) argue that verbal valency in Oneida is instead driven by athematic properties of the verb's entailed participants. A predicate can entail a certain number of participants with particular semantic roles (e.g. agent, patient, etc.). However, Oneida verbs entirely lack a fixed transitivity, because the number of syntactic arguments they take is based on the number of its entailed participants that happen to be animate in a given clause. Where Ariel et al. (2015) shows that argumenthood, and therefore transitivity, is a spectrum, Koenig & Michelson (2015) propose that the number of argument

functions a verb selects for is not necessarily fixed across all semantic or pragmatic contexts.

Oneida argument prefixes are divided into transitive and intransitive prefixes. Transitive prefixes occur with polyadic verbs, and express an animate agent acting on an animate patient, as shown in (22).

(22) *wa-hí-kwaht-eʔ*
      FACT-1SSG>3MASC.SG-invite-PNC

      'I invited him' (Koenig & Michelson 2012: 187)

Intransitive prefixes occur on monadic and zero-place predicates, shown in (23) and (24), respectively. Intransitive prefixes are split into AGENT and PATIENT prefixes that are generally semantically conditioned (Michelson 1991), but can also be lexically specified by the verb. In (23) we see monadic verbs with a single animate argument, we will see in Oneida that the lack of an animate argument makes monadic, and polyadic, verbs act like zero-place predicates.

(23) a. *waʔ-t-k-ashʌ́tho-ʔ*
          FACT-DUALIC-1SG.AGT-cry-PNCT

          'I cried'

      b. *waʔ-t-wak-hʌ·léht-eʔ*
          FACT-DUALIC-1SG.PAT-holler-PNCT

          'I hollered, yelled'   (Koenig & Michelson 2012: 187)

(24) a. *yo-kʌnol-ú*
          3Z/N.SG.PAT-rain-STV

          'It's raining'

      b. *w-ʌ·té·*
          3Z/N.SG/AGT-be.light:STV

          'It's daylight, it's light out'   (Koenig & Michelson 2012: 188)

Zero-place predicates always appear with the feminine zoic singular prefix, as in (24). The feminine zoic singular prefix also always occurs on verbs that lack any animate semantic participants, even when those semantic participants are plural, as in (25). Thus, verbs in Oneida

without any animate participants are inflected like those without any semantic arguments.

(25) **Te-ka**-*núhs-a-ke*   *ka-nuhs-o·t-áhkweʔ*   *nók tsiʔ*
      DU-3.FZ.SG.A-house-JN-amount.to[STV]   3.FZ.SG.A-house-stand-HAB.PST   but

          yah   *teʔ-wak-anuhte-ʔ*   *kátshaʔ* *yaw-e·-nú*
          NEG   NEG-1SG.P-know-STV   where   3.FZ.SG.P-walk-STV

'There were two houses there but I don't know what happened to them (lit. where it went)' (Koenig & Michelson 2015: 7)

    Aside from argument co-reference, zero- and one-place predicate verbs that lexically select for so-called Agent prefixes only take those prefixes in certain aspects.[9] The habitual and punctual aspects permit Agent prefixes, while other aspects, as in (26b), require Patient prefixing instead.

(26)   a.   *-atukoht-* 'pass by' Punctual Aspect
           *wa-**h**-atu·kóht-eʔ*
           FACT-3MASC.SG.AGT-pass.by-PNCT

           'He passed by, he passed on, he died.'

    b.   *-atukoht-* 'pass by' Stative Aspect
           lo-*(a)tukóht-u*
           3MASC.SG.PAT-pass.by-STV

           'He has gone by, he has passed on, he has died.'

                                    (Koenig & Michelson 2012: 188)

Koenig & Michelson (2012) find the same property for 2+ place predicate verbs with only one animate argument. We see for the verb *-ʔlholok-* 'cover' in (27) that a transitive prefix is permitted in (27a) where there are two animate participants. However, if there is only one animate participant, it is co-referenced by an Agent prefix if the aspect marking in punctual, as in (27b), and a Patient prefix if the aspect is something else, for example stative, as in (27c).

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[9]Here I use the standard name for such prefixes in the literature on Oneida and I capitalize them to differentiate them from lexical semantic notions of agent and patient; see also Lounsbury (1953), Michelson (1991), and Mithun (1991) for further discussion.

(27) a. *waʔ-**khe**-ʔlho·lók-eʔ*
          FACT-1SG>3F.SG-cover-PNCT

          'I covered her up' (e.g. with a blanket)

      b. *waʔ-**ke**-ʔlho·lók-eʔ*
          FACT-1SG.AGT-cover-PNCT

          'I covered (it) up'

      c. ***wake**-ʔlhol-ú*
          1SG.PAT-cover-STV

          'I have covered (it) up'   (Koenig & Michelson 2012: 189)

In addition to the number of animate arguments, Oneida verbs may only inflect as transitive if they have referentially distinct arguments. Notice that when the reflexive prefix *-atat-* is used, the verb is treated as an intransitive. We see in (28) that the verb *-nut-* 'feed' shows the same intransitive Agent prefix versus Patient prefix shift as in intransitives and transitive verbs with only one animate argument.

(28) a. *wa-hi-khw-á-nut-eʔ*
          FACT-1SG>3M.SG-food-JN-feed-PNCT

          'I fed him'

      b. *wa-h-atate-khw-á-nut-eʔ*
          FACT-3.M.SG.A-REFL-food-JN-feed-PNCT

          'He fed himself'

      c. *lo-tate-khw-a-nut-ú*
          3.M.SG.P-REFL-food-JN-feed-STV

          'He has fed himself'   (Koenig & Michelson 2015: 9)

While most verbs can occur in any aspect in Oneida, one class is restricted to only Stative aspect, what Oneida dictionaries call either *states* (Abbott et al. 1996), or *stative verbs* (Michelson & Doxtator 2002). Such aspectually restricted verbs lexically select for either Agent prefixes or Patient prefixes (although see Mithun 1991 for semantic and historical factors governing prefixal selection). For example, the verb *tʌs* 'be thick' selects for an Agent prefix, as in (29a), while the verb *lhes* 'be long' selects for a Patient prefix.

(29) a. *ka·tʌs*
      3.FZ.SG.A-thick[STV]

      'It is thick'

   b. *yó-lhes*
      3.FZ.SG.P-long[STV]

      'It is long'   (Koenig & Michelson 2015: 12)

Stative verbs that select for Agent prefixes, like *tʌs* 'be thick', must take a Patient prefix if the verb form contains an incorporated alienably possessed noun (see Lounsbury 1953 and Koenig & Michelson 2021 for further discussion). The verb *ó·tʌ* 'kind of' is one such verb that selects for an Agent prefix, we see this in (30a) where the noun *kal* is unpossessed. Where the incorporated noun is unpossessed, the Agent prefix is always feminine zoic, the same marking we see on verbs forming zero-place predicates. However, when the incorporated noun is possessed, the verbal prefix now references the possessor, which is not a semantic argument of the verb (i.e. it is not entailed). Notice in (30b) that the Agent prefix now reflects the ɸ-features of the masculine possessor 'he,' rather than the ɸ-features of the incorporated possessee. Stative verbs must realize a Patient prefix when the incorporated possessee is alienably possessed, even if the verb typically selects for an Agent prefix. We see in (30c), that the verb *ó·tʌ* 'kind of' now selects for a Patient prefix. As with an alienably possessed incorporated noun, as in (30b), the verbal prefix now co-references the possessor of the incorporated noun. While possessor raising is quite common cross-linguistically (Deal 2013, 2017; Rodrigues 2010), in Oneida, the possessor-possessee relationship seems to alter the selectional properties of the verb.

(30) a. *ni-ka-kal-ó·tʌ*
      PART-3FZ.SG.A-story-kind.of[STV]

      'The kind of story it is'

   b. *ni-hʌ-tahs-ó·tʌ*
      PART-3.M.SG.A-tail-kind.of[STV]

      'the kind of tail he has'

c. *ni-ho-nuhs-ó·tʌ*
PART-3.M.SG.P-house-hind.of[STV]

'The kind of house he has' (Koenig & Michelson 2015: 12)

That inanimate semantic participants are not treated as arguments by Oneida verbs means that it is not possible to say that Oneida verbs have a valency based on the thematic roles they putatively assign.[10] Instead we might be able to posit that Oneida verb stems have a maximal argument structure based on the number of semantic participants they entail. However, valency in Oneida is entirely based on the number of animate participants, not the roles they saturate.

1.2.3   Argument functions versus their phrasal exponents

Most diagnostics and theoretical treatments of argument and adjunct functions focus on properties of overt XP dependents of verbs. In this chapter the example argumenthood tests I presented for English and German diagnosed properties of the the XP exponents of the argument and adjunct functions to decide whether a given dependent passed/failed a test. For example, the results of the iterativity test was calculated based on whether there could be more than one XP exponent of a given argument or adjunct function. However, languages differ on the extent to which a property like obligatoriness will be true for all and only argument functions. Jelinek (1984) proposed that some languages had their argument functions exclusively realized by pronouns within the sublexical structure of the verb, the so-called Pronominal Argument Hypothesis. A consequence of exclusively pronominal argument saturation is that XP dependents will not be differentiated by grammatical function at all.

Jelinek first proposed her Pronominal Argument Hypothesis based off of the Australian language Warlpiri, and later St'át'imcets (Jelinek & Demers 1994). Hale (1983) noticed that XP dependents in Warlpiri were entirely optional. From the starting sentence in (31), we see in (32a)-(32c) that any dependent can be acceptably left out (i.e. obligatoriness

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[10]Koenig & Michelson (2015) essentially argue that the Oneida verbs do not really assign thematic roles. Koenig & Michelson (2012) argue instead that Oneida verbs combine directly with their dependents through functional application (following Chung & Ladusaw 2003 also von Fintel & Matthewson 2008) without a true mediating syntactic component; their proposed model is not relevant here.

does not distinguish putative argument XPs from adjunct XPs). Add to this that Warlpiri is a non-configurational language (Austin 2001), meaning that there is no informative constituent structure of head-complement relations.[11]

(31) *Ngarrka-ngku ka   wawirri   panti-rni.*
     man-ERG   AUX   kangaroo spear-NONPAST

   The man is spearing the kangaroo (Hale 1983: 6)

(32) a. *Ngarrka-ngku ka   panti-rni.*
        man-ERG   AUX   spear-NONPAST

      The man is spearing **him**/**her**/**it**.

   b. *Wawirri   ka   panti-rni.*
      kangaroo AUX   spear-NONPAST

      He/**she** is spearing the kangaroo.

   c. *Panti-rni   ka.*
      spear-NONPAST   AUX

      He/**she** is spearing **him**   (Hale 1983: 7)

The lack of an informative phrase structure presents an immediate problem in distinguishing grammatical functions in a configurational framework like Government and Binding Theory (Chomsky 1981, 1982). Jelinek (1984) additionally points out that Warlpiri's non-configurational nature means that it seems to defy the non-iterability of arguments. We see in (33) that both the nominal *wawirri* 'kangaroo' and the demonstrative *yalumpu* 'that' are co-referring within the clause. Superficially then, it looks like Warlpiri permits iterated argument nominals, although it is notable that the apparently iterable nominal expressions does not coincide with iterability in the semantic arguments or the case marking that appears on the auxiliary.[12]

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[11]The exception in Warlpiri is that the slot in front of the auxiliary permits a single constituent (Hale 1983; Simpson 1991; Simpson 1983). Thus, constituency tests are possible in the language using the pre-auxiliary slot, see also Legate (2002) for further evidence that Warlpiri is somewhat less non-configurational than it looks.

[12]I am using illustrative properties of Warlpiri to show Jelinek's (1984) motivation for the Pronominal Argument Hypothesis; I am leaving out her discussion of case marking in the language.

(33)　[*Wawirri*]ᵢ　*kapi-rna*　*panti-rni*　[*yalumpu*]ᵢ
　　　kangaroo　AUX　　spear-NONPAST　that

　　'I will spear that kangaroo' (Hale 1983: 6)

To account for the apparently adjunct-like properties of verbal dependents in Warlpiri, Jelinek (1984) proposes that argumenthood is exclusively borne by pronouns within the sublexical structure of the verb. This then requires any XPs that co-refer to those argument functions be anaphorically tied those pronouns; the XP dependents are systematically adjuncts. We see in her proposal in (34), based on Jelinek (1984: 50), that all verbal dependents are essentially clausal adjuncts.[13] The subject and object clitics that appear on the AUX bear the argument functions.[14]

(34)

　　　　　　　　　　　　　　　S
　　　　　　　　　／　　　　｜　　　　＼
　　　　　　　V　　　　AUX　　　　XPs
　　　　　　　　　　　／　｜　＼
　　　　　　　　Tense　*pro*ₛᵦⱼ　*pro*ₒᵦⱼ
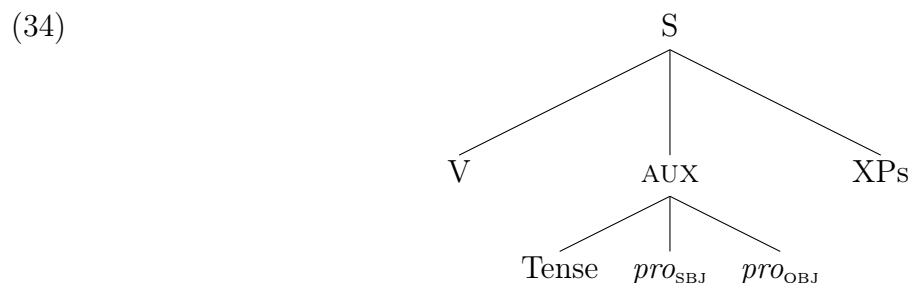
Jelinek & Demers (1994) similarly argued for the Salish language St'át'imcets that its argument functions were also exclusively borne by pronouns within the verb and its XP dependents were only anaphorically tied to those pronouns (see also Matthewson & Demirdache 1995 and Jelinek 2006). While Jelinek's (1984) Pronominal Argument Hypothesis was quite exciting,[15] many pointed out that Jelinek's (1984) predictions did not actually pan out in any language. Further work into Warlpiri showed that it had more evidence of underlying configurationality than previously expected (Austin & Bresnan 1996; Legate 2002; Simpson 1991). Evans (1999) and Coppock & Wechsler (2012) additionally point out in Bininj Gun-Wok and Hungarian, respectively, that the apparently pronominal clitics were generally

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[13]While Jelinek (1984) places the XP dependents at sister to V and AUX, a more modern analysis with only binary branching would probably place the XP dependents at the IP or CP adjunct position. The difference here is not important.

[14]Sometimes the clitics are realized as null, in which case *pro* bears the argument functions.

[15]For similar investigations in to other languages see: Navajo (Bresnan 2001; Hale 2003; Speas 1990), Mohawk (Baker 1996), Central Alaskan Yup'ik Eskimo (Mithun 2003), and Classical Nahuatl (Haugen 2007, 2012, 2015; Launey 1994, 2004)

not interpreted as pronouns. Bresnan & Mchombo (1987) showed in Chicheŵa that a given language's head-marking could vary between a pronominal and agreement dependency with co-indexed XPs depending on the syntactic context. More troublingly, Davis & Matthewson (2009) show across Salish languages that the predictions of the Pronominal Argument Hypothesis do not uniformly bear out for any Salish language, contra Jelinek (2006), as shown in Table 1.2.[16] At best a given Salish language has a smattering of characteristics consistent with the PAH, but no single language can be said to be definitively a Pronominal Argument Language.[17] The features of St'át'imcets in particular do not pan out in favor of the PAH, which is the language Jelinek & Demers (1994) initially based their generalization about Salish languages on.

Nonetheless, one key takeaway from the project is the existence of languages for which the most commonly relied upon argumenthood tests (obligatoriness, word order, case marking, etc.) fail to distinguish different verbal dependents. This at least raises the issue of whether argument functions are always borne by dependents external to the verbal word, as with languages like English, or within the verbal word, as with putative Pronominal Argument Languages.

1.3   Setting the stage for O'dam

The three case studies I have discussed in §1.2.1-§1.2.3 show a range of ways that languages argument and adjuncts do not have a consistent set of properties. This sets the stage for my investigation of O'dam and allows us to place O'dam within the context of other languages with non-canonical argument/adjunct distinctions. All languages may share a core distinction between argument and adjunct grammatical functions. However, O'dam suggests that this distinction is characterized by a set of thematic roles distinguished consistently across languages, rather than by syntactic properties of the syntactic elements bearing those

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[16]See MacSwan (1998) for a similar problem pointed out about Southeast Puebla Nahuatl.

[17]Davis & Matthewson (2009) also point out that the sheer number of ?s illustrates that Salish languages are overall simply not described well enough to even approach calling all of them Pronominal Argument Languages.

	Northern Straits	Other Central	St'át'imcets	Other Interior
Full and Obligatory agreement paradigms	✓	✓	✓	✓
Optional overt DPs	✓	✓	✓	✓
No argument-adjunct word order distinctions	✓(?)	✓(?)	✓	✓
No unregistered argument DPs	✓	X	X	?
No unregistered argument CPs	X	X	X	X
No interpretive differences between pronouns and overt DPs	X	X	X	X
No VP ellipsis	✓	✓	X	✓
No VP coordination	?	?	X	?
No pro VPs	?	?	X	X
No DP anaphors	✓	✓	✓	✓
No NP-movement	X	X	X	X
No infinitives	✓	✓	X	X
No adjunct island effects	?	X	X	X
No Condition C effects	?	X	X	X
No strong crossover	?	?	X	X
No weak crossover	?	X	X	?
No variable binding asymmetries	?	?	X	?
No superiority	?	?	X	?

Table 1.2: Predictions of the Pronominal Argument Hypothesis for Salish (Davis & Matthewson 2009: 1114). ✓indicates the language is consistent with the PAH, X indicates the language is not. ? indicates that the current data is not sufficient to judge whether the given language has the trait.

thematic roles. We will see that O'dam is similar to Hebrew in that the various argumenthood tests do not point to the exact same grouping of verbal dependents. However, unlike Hebrew, we will find no evidence of an implicational hierarchy in how the tests relate to one another. This makes it difficult to simply divide the grammatical functions based on how many syntactic tests their exponents pass. Doing so presupposes that each test equally, or implicationally, points to some core set of arguments. Instead, O'dam suggests that perhaps argument functions are visible to all argumenthood tests, but whether a given argument function passes a given test depends on whether the dependent that bears that function has a particular semantic or syntactic property (outside of being an argument). Unlike Oneida,

I find that O'dam verbs do have a consistent and identifiable valency. The consistency of verbal valency in O'dam will be crucial to understanding how O'dam modifies verbal valency. However, O'dam is consistent with Oneida in that certain semantic participants (e.g. locatives) are only instantiable as syntactic arguments if they are entailed to be animate. This suggests that referent properties may also matter cross-linguistically for argumenthood. Finally, we will see that O'dam has many of the features hypothesized to hold for Jelinek's (1984) Pronominal Argument Languages. The syntactic properties that distinguish arguments from adjuncts seem to be ones that target or affect the verb in some way (e.g. through affixation). This is suggestive of a type of situation where XP dependents do not technically instantiate arguments and instead arguments are contained within the verb itself.

Throughout this dissertation I will primarily use "argument" and "adjunct" descriptively to refer to argument and adjunct functions as natural classes. My discussion will not focus on properties of subjects, objects, obliques, etc. so much as the properties that suggest that subjects and objects are a natural class of argument functions in O'dam, while obliques, adverbials, etc. are a natural class of adjunct functions. I will use the terms 'subject' and 'object' in a purely descriptive sense. In the case of O'dam, I simply use the terms as they have been used in previous literature, see Chapters 2 and 4. In this sense, my use of subject and object is similar to S/A and P/G/T (Bickel & Nichols 2008) or Langacker's (2008) "trajector" and "landmark." However, my focus is on the distinction between argument and adjunct functions, rather than further divisions within those categories. Thus, for my purposes subjects and objects are part of the natural class of argument functions in the sense that they pass some relevant syntactic test; see Chapters 2 and 4 for diagnostics of subjects and primary objects, and secondary objects, respectively. At least for O'dam, I suspect that doing away with the terms "subject" and "object" would end up in identifying natural classes that are essentially the same.

1.4 A road map of things to come

Now that we have set the stage for investigating O'dam, in the following chapters I will dive into the question of how O'dam distinguishes between argument and adjunct functions.

First, in Chapter 2 I will discuss the speakers of the O'dam language, my positionality in relation to those speakers and this study, my methodology and some basic features of the language necessary for understanding this thesis. I will also discuss the properties of O'dam constituency and phrase structure in §2.3. In particular, we will see that smaller XPs, like DPs and PP, have a clear phrase structural organization. However, the structural relationship between those phrases within a clause will be essentially flat. Instead, an O'dam clause seems to have three areas: the preverbal position, the verb, and the postverbal position. Each position has restrictions on the set of dependents that can occur within it. However the dependents within each position seem to be either freely or scopally ordered, not phrase structurally.

Then, in Chapter 3, I will use standard cross-linguistically applied tests to examine O'dam grammatical functional distinctions. First, in §3.1, I will discuss the surface facts of O'dam and review the distinction between arguments and adjuncts made in previous work on the language. In particular, we will see that the surface facts of the language make head-marking the sole characteristic of arguments. XP dependents are not distinguished by other surface properties. This will motivate my use of Jelinek's (1984) Pronominal Argument Hypothesis (PAH) to develop a second pass at differentiating arguments and adjuncts in §3.2. In this second part, we will see that XP dependents are differentiated by Principle C and adjunct island effects, in addition to head-marking. We will also see that O'dam entirely lacks definiteness as a meaningful component of its grammar. This raises the issue about whether the pronouns predicted to occur within the verb in Pronominal Argument Languages should be assumed to impose definiteness, as they do in other languages. Finally, I will argue that O'dam does not have full agreement paradigms because head-marking under-characterizes the full set of arguments that certain verbs take. This will lead into the following chapters to identify the properties of non-head marked arguments.

In Chapter 4 I will discuss the object status of secondary objects, which lack head-marking and, therefore, lack the primary characteristic of O'dam arguments. While previous work intuited the object status of secondary objects, the lack of head-marking makes them appear to be undifferentiated from other participants entailed by a predicate. I will compare secondary objects with (entailed) locative expressions, which also lack head-marking. In

terms of head-marking, secondary objects are distinguished from locative participants in that they are potentially head-marked, as I show in §4.1. However, stronger evidence will come from a language-specific test: the behavior of preverbal quantifiers. In §4.2.2, I will show that preverbal quantifiers identify secondary objects as arguments, along with head-marked arguments. In contrast, locative participants will fail the preverbal quantifier test, behaving as adjuncts. In addition, we will see that preverbal quantification distinguishes between arguments in a way that head-marking does not. In particular, preverbal quantifiers will not treat all beneficiaries the same, even though head-marking does. Recipient benefactives are distinguished from recipients in that only the former fail the preverbal quantification test. Deputative benefactives will consistently pass the preverbal quantification test, while plain benefactives will only sometimes pass the test. This suggests that argumenthood is related to event locality, because recipient beneficiaries notably differ from recipients and other types of beneficiaries in that they are associated with an event entirely separate from the core event denoted by the verb. Finally, preverbal quantification will provide some evidence that arguments are contained within the verb itself in O'dam. Specifically, preverbal quantifiers will quantify over the verb in the same way that they quantify over the verb's arguments.

In Chapter 5 I will propose a second language-internal test: applicativization. We will see that the output of applicativization is hierarchically determined by the valency and argument structure of the verb. Intransitive verbs gain an external agent through applicativization, while transitive verbs do not. Transitives verbs license an entailed participant as an object so long as that participant is not an object of the base verb and is compatible with an animate interpretation. Where there are no promotable participants, transitive verbs gain a benefactive object as the elsewhere case. There are some apparent exceptions to the generalizations about verbal valence above, however in all cases the exceptions turn out to involve verb classes that cross-linguistically are known to have exceptional behavior. Lexical middles, verbs of ingestion, and verbs of perception are head-marked as transitive. However, these verbs will gain an agent from applicativization, supporting Krejci's (2012) view that these verbs in particular only have one semantic participant. Conversely, incorporated nouns are not head-marked, but will be counted towards a verb's valency for applicativization. In comparing the object status of secondary objects and (entailed) locative expressions, we

will see that the latter do not count towards a verb's valency, supporting my conclusions in Chapter 4.

Finally, in Chapter 6, I will return to the issue of distinguishing grammatical functions and discuss how O'dam sets up future work on the distinction of grammatical functions.

Chapter 2

The O'dam and some basic features of the O'dam language

O'dam (Southeastern Tepehuan)[1] is a Uto-Aztecan language spoken in the Mexican states of Durango, Nayarit, and Zacatecas. The speakers I worked with for this dissertation are from Durango, called *korian* in O'dam. O'dam is part of the Southern Tepehuan subgroup, along with two very closely related varieties: Audam (Southwestern Tepehuan: Glottocode sout2977; ISO 639-3: tla) and Central Tepehuan (which speakers also call O'dam). In Figure 2.1 we see a phylogenetic tree showing O'dam's place within the larger Uto-Aztecan and Tepiman families. The name *tepehuan* is of Nahuatl origin, *tepē-wan* composed of *tepetl* 'mountain' + *-wan* 'owners, dwellers' likely meaning 'mountain dwellers/owners,' referring to where most Tepehuan peoples lived. The exonym *Tepehuan* is commonly used by many O'dam and, to my knowledge, is not considered a pejorative. However, my consultants have requested I use the endonym *O'dam* instead of Southeastern Tepehuan.

O'dam is far and away the best documented and studied of the Southern Tepehuan languages, with a full reference grammar (Willett 1991) and dictionary (Willett & Willett 2015), as well as numerous articles on the language and people (García Salido & Everdell 2020). Audam is only just starting to be documented, with only one published text (García Salido 2018), and no reference grammar or dictionary, although I have seen small pedagogical word booklets for Audam and Central published by the Secretaría de Educación Pública in Mexico. Central, in contrast to the other two Southern Tepehuan languages, lacks any documentation whatsoever.

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[1]Glottocode: sout2976 ISO 639-3: stp.
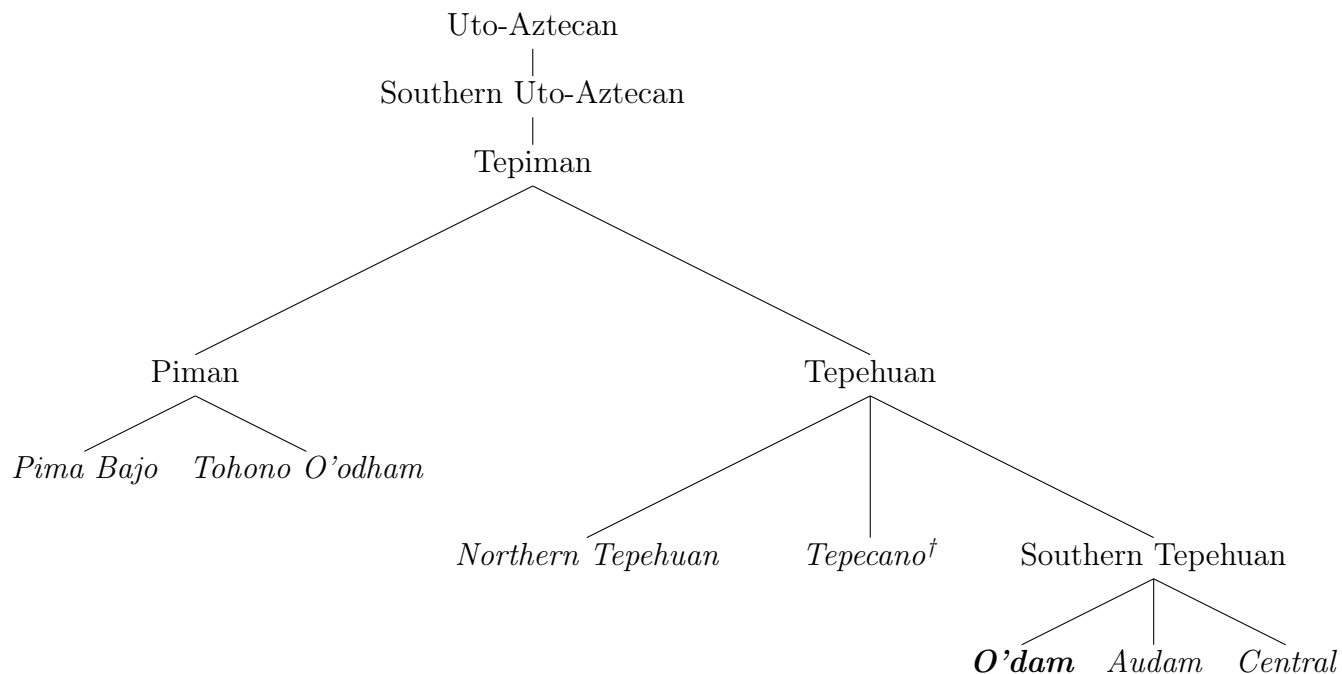
Figure 2.1: Uto-Aztecan family tree focusing on Tepiman (based on Hill 2011). Languages are shown in italics.

Southern Tepehuan communities are broadly organized into *cabeceras* and *anexos*. The former are larger towns built around a colonial-era Franciscan or Jesuit church, typically where the local Indigenous governor, the *gobernador tradicional*, lives.[2] The latter generally consist of smaller, more spread out ranches. The *cabeceras* relevant to the Southern Tepehuan are shown in Figure 2.2. Santa María de Ocotán (*Jukɨr*), Santiago Teneraca (*Chianarkam*), San Francisco de Ocotán (*Koxbilhim*), and Xoconoxtle (*Nakaabtam*) are the *cabeceras* of O'dam. Santa María Magdalena de Taxicaringa is the *cabecera* of the Central variety. The Audam *cabeceras* are San Bernardino Milpillas Chico, San Francisco de Lajas (*Aicham*), and San Andrés Milpillas Grande. My consultants come from the towns of *Jukɨr* (Santa María de Ocotán), *Kobaa'ram* (La Candelaria), *Suusbhaikam* (Los Charcos), and *Chianarkam* (Santiago Teneraca). The connection between *cabeceras* and their *anexos* are both ceremonial and economic. The *cabeceras* are also *patio mayores*, meaning that they are

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[2]According to Gradie (2000), Tepehuans lived in scattered *ranchos* 'ranches' spread across the mountains and plains between what is now southern Chihuahua and northern Nayarit. The modern larger towns were a direct result of Christianization and control efforts by the Franciscan, and later Jesuit, missionaries.
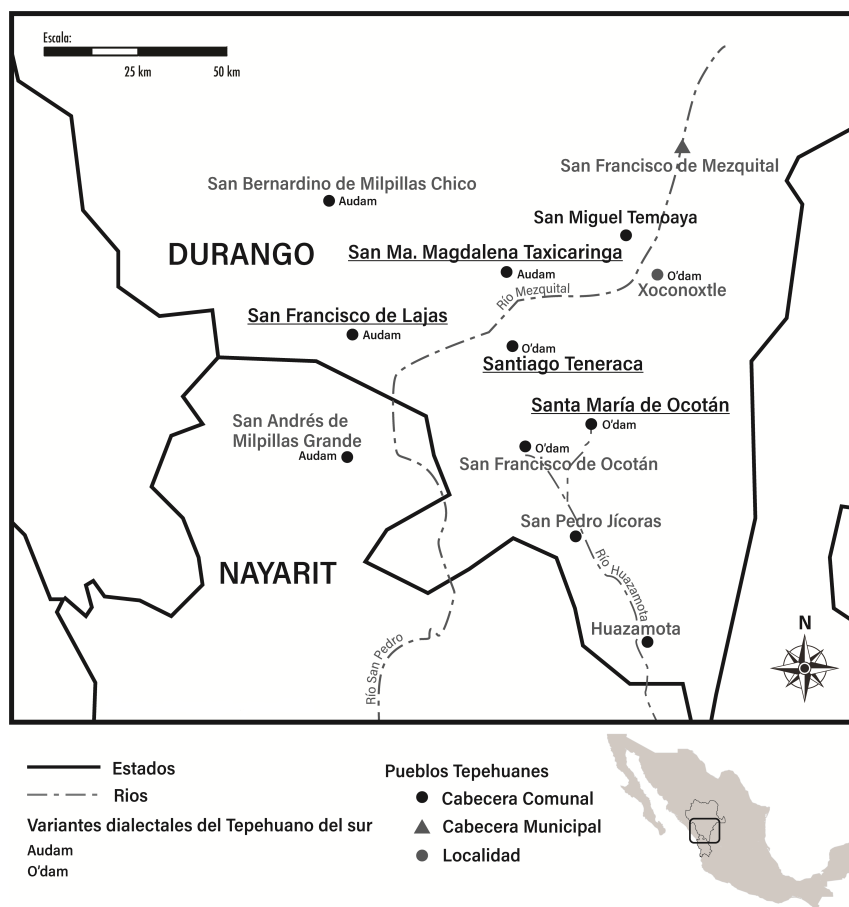
Figure 2.2: Map of Southern Tepehuan communities (from García Salido & Everdell 2020, modified from Reyes Valdez 2007)

places where Southern Tepehuan families gather twice a year for the *xiotalh* (Reyes Valdez 2015). The *xiotalh* is a circular dance ceremony similar to a *mitote*. An *umuagɨm* is sent out from each *patio mayor* to gather the participants of the *xiotalh* (García Salido et al. 2021a). Linguistically, O'dam is surrounded by Spanish and Uto-Aztecan languages: Cora (cora1260), Huichol (huic1243), and Mexicanero (dura1246). The Acaxee and Xixime lived in the area surrounding the Southern Tepehuans. However, their languages have been extinct since colonial times, and they are best understood as unclassified (Miller 1983). While the contact situation in Northern Mexico is not well known, it seems likely that Southern Tepehuan has been surrounded primarily by other Uto-Aztecan languages since before colonization, certainly since its split from Northern Tepehuan.

There is no agreement on the vitality of O'dam or Southern Tepehuan in general. As of the last census, there are about 44,386 speakers of Southern Tepehuan (INEGI 2020). INEGI does not distinguish any of the Southern Tepehuan languages, but my experience in the region suggests that O'dam makes up the largest portion of that speaker population. Generally only very old or very poor Tepehuans are monolingual O'dam speakers; most people I encountered are bilingual O'dam and Spanish. While most children grow up speaking O'dam, only learning Spanish around elementary or middle school, the extent to which people use O'dam in their day-to-day life depends on where they live (Torres 2018). In rural Tepehuan-dominant towns, speaking contexts are generally either exclusively O'dam or bilingual O'dam and Spanish. In the city, young people report using far more Spanish. The major exception among rural towns are ones like *Suusbhaikam* (Los Charcos), where the population has shifted over time to being majority *mestizo*[3] and there is increasing pressure within the primary schools to teach in Spanish rather than O'dam. Thus, the ongoing vitality of the O'dam language depends on where jobs are; the fewer jobs there are in the rural areas of southern Durango, the more pressure there will be for Tepehuans to move to the city. In the past, mining and timber companies in the Mezquital municipality hired Tepehuans in the rural communities. However, they have been increasingly hiring *mestizo* laborers instead of Tepehuans so that there is often a lack of work in the rural towns. A recent development since the Covid-19 pandemic is that *narcotrafico* groups who control Tepehuan towns have prohibited selling gasoline in the rural areas so that it is at best difficult to go back and forth between the rural towns and Durango City. It is unclear how this change will affect the use of the O'dam language.

The current divide of Northern and Southern Tepehuan language and peoples is almost certainly a consequence of the Tepehuan Revolt of 1616-1620 (although see Reyes Valdez 2015). Before the revolt Franciscan missionaries reported Tepehuan peoples living all throughout what is now Durango and southern Chihuahua.[4] However, a religious leader

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[3]*Mesitzo* is the majority ethnic group in Mexico. It generally refers to mixed European and Indigenous ancestry. Important here is that the Tepehuans who I have spoken with consider *mestizos* to be non-Tepehuan and non-Indigenous (i.e. so-called *nabat*).

[4]Missionaries at this time describe all of the languages of the Tepehuan people as 'Tepehuan' (Gradie 2000), which suggests that the Tepehuan subgroup before 1616 was a dialect chain, although it is not clear

named Quautlatas, along with grievances about encroaching Spanish colonization, inspired the Tepehuans, Acaxees, Xiximes, and other groups to revolt against the Spanish in 1616. The Spanish killed many Indigenous people in response and essentially murdered all of the Tepehuans in between what are now the Northern and Southern Tepehuan groups. According to Gradie (2000), the Tepehuan Revolt was a major reason for the switch from primarily Franciscan to primarily Jesuit missionaries in northwest Mexico, and the associated shift in conversion tactics. It is therefore likely an extremely important event in history of both the Tepehuan peoples and the history of northwestern Mexico. However, as of yet, there is only one published work to my knowledge investigating the history of the revolt, Gradie (2000), which focuses heavily on the perspective of the conquistadors and missionaries, and does not discuss the Indigenous perspectives or effects. Rinaldini (1743) wrote the first grammar of a Tepehuan language, which seems to be a Tepehuan language before the current Northern-Southern split. There were few to no Tepehuans living between the current Northern and Southern groups by the mid 1700's, because of the Spanish response to the Tepehuan Revolt. Thus, it is almost certainly the case that Rinaldini was describing the language mid-split.

While anthropological work dates back to Lumholtz (1894–1897) and Lumholtz (1902), the first description of Southern Tepehuan was not until Mason's (1990 [1952]) unpublished notes; see also García Salido & Reyes Valdez (2015).[5] The first published grammar of a Southern Tepehuan language was Willett (1991), which described the O'dam variety spoken in *Juktɨr* (Santa María de Ocotán). Until quite recently, studies of Southern Tepehuan languages, including this dissertation, have overwhelmingly focused on O'dam (e.g. all of the work by Elizabeth and Thomas Willett, as well as García Salido 2014). One of the major reasons for the disparity in academic work between O'dam and the other Southern Tepehuan languages and peoples is accessibility. O'dam communities, like *Juktɨr* and *Koba'ram* (La Candelaria), are only a few hours drive from the Mezquital municipality capital San Francisco del Mezquital or from Durango City and the roads are relatively up-kept. Currently there are buses that travel to and from the various O'dam communities several times

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how much linguistic variation was present among Tepehuan peoples.

[5]Mason (1917) described the extinct Tepecano language, which may be a Southern Tepehuan language, as it was spoken in Jalisco. Thus, it is possible that the first description of a Southern Tepehuan language was before Mason (1990 [1952]).

per week. In contrast, Audam and Central Tepehuan communities are 9+ hours drive from Durango City and require driving on poor roads. This disparity in accessibility has narrowed somewhat since the Mexican government began laying roads more widely throughout the Sierra Madre. However, *narcotrafico* groups have made the Audam and Central Tepehuan areas increasingly dangerous.

My status as a white American fundamentally affected my fieldwork and there are certainly interpretations of data, information I missed, or information that I was not privy to that are left out of this dissertation because of that. O'dam and people in the various communities I travelled to correctly assumed my background, even from a distance. I was consistently approached and spoken to as someone with deference and status that did not seem afforded to others of my same age (early 30s). Likewise, many of the other white people who travel to the rural communities of the Mezquital municipality are Protestant missionaries. Protestants in the region are viewed as more socially conservative than Catholics and practitioners of *gu costumbre*, the traditional belief system of O'dam (Reyes Valdez 2015). While I am not Protestant, the signals that I was not a missionary would often not be apparent.

My background gave me significant advantages in terms of the political and economic power I could mobilize. My relationships with my O'dam consultants are colored by the fact that I am a source of income for them and a source of political prestige in the rural communities. Consultants spending time with me and opening doors for me certainly came with the expectation that I would be a continuing source of income and political prestige for them. This meant that a number of people I worked with were not interested in the linguistic questions I explore in this dissertation. Likewise, my status as a linguist meant that new consultants often deferred to my 'judgements' about O'dam sentences, and I needed to use my own judgement to figure out when my consultants were not simply accepting whatever O'dam sentence I asked about. Thankfully, the relatively relaxed relationship I have with my longer term consultants means that I will be laughed at if I say an unacceptable O'dam sentence. My primary language of interaction with O'dam was Spanish and every O'dam person I encountered assumed I spoke Spanish. This meant that all of the interviews and tasks conducted for this dissertation were embedded within a Spanish context. I noticed that

when I was in groups of O'dam speakers, people were wary to use the O'dam language too much because they worried it excluded me.

In my experience O'dam are wary of community outsiders (either non-Tepehuan or non-local). There seem to be gendered distinctions in how O'dam were willing to interact with me. My interactions with men seemed to begin from my access to English, older men would talk to me so long as I was willing to teach some English. The younger men I interacted with tended to work with me at the request of their mother, so that I was a source of income for the family. Most of my consultants are women. Women in O'dam rural communities tend to work in the homestead or travel to see other women in their homes. My time in the rural communities was largely spent within the kitchen of the family I stayed with. As such, my experience of the O'dam communities was controlled by the family and I stayed with and where they chose to show me. This was, in part, additionally due to safety concerns. Any narcos in the towns I stayed in were acutely aware of my presence and, as such, the families I stayed with would be put in jeopardy if I appeared too inquisitive about local happenings to the *narcos.*

Finally, the consultants I worked most with for this dissertation were women who split their time between the O'dam-centered communities of the Mezquital municipality and the Spanish/mestizo-centered Durango City. This was an advantage for me because it gave more cultural overlap to draw from in asking interview questions and generating elicitation contexts. However, this adds to my previous point that my work represented here was done in an inescapably Spanish-centered context. For example, the reader will notice that some contexts I created for elicitation in this dissertation use features associated with non-O'dam media and culture (e.g. a detective story).

Now that I have discussed the socio-cultural background of O'dam speakers, and my positionality in this investigation I will now turn to an overview of the methods used here.

2.1 Methods

In this section I will discuss the data and methodology I employed in my investigation of O'dam argumenthood. In exploring the properties of arguments and adjuncts I utilized three overarching methods: text collection, analysis of previously published data, and elicitation. I will discuss each of these in turn.

I have collected, transcribed and annotated 7 hours of recorded speech, consisting of 10 texts. These were processed using the audio-video annotation software ELAN (*ELAN (Version 6.5) [Computer software]* 2023). ELAN is a time-aligning software accessible for free and maintained by the Max Planck Institute for Psycholinguistics and the Technical Group. This tool is widely used in in language documentation (Bowern 2015: 67ff) and has been used previously in the documentation of O'dam, see García Salido (2014: 30-5). Language data was recorded digitally, using a Zoom H4n Pro with a Rode NTG2 Multi-Powered Condenser Shotgun Microphone. The recordings were uploaded to my computer and saved onto an external hard drive dedicated to my documentation of O'dam (i.e. containing files recorded previously to this dissertation project). Metadata was created the day the recording was made and bundled with the media files in a folder uniquely labeled to identify the recording session. The metadata include Recording Identifier, Recording Session Information, Media/File Information, Participant Information, Depositor Information, Transcriber Information. The Transcriber Information was added once the texts were beginning to be transcribed.

Consultants trained by Gabriela García Salido and myself did the transcription of the data and translation into Spanish, which I revised. I did the morphological glossing and translated the O'dam into English. As only one of my consultants speaks any amount of English, my English translations of O'dam utterances are based on three elements: the Spanish translation of the utterance given by a consultant, my own understanding of O'dam, and discussion with my consultants. The speakers present in my recorded sample are all women between the ages of 18-80, with four speakers being under the age of 27 and six speakers being over the age of 60.[6]

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[6]The ages of the age of the six older speakers are estimated because none of them had birth certificates

I was able to collect texts in three genres of speech: *sapook*, life histories (*historias de vida*), and one discussion. *Sapook* are a speech genre specific to Southern Tepehuans (Everdell & García Salido 2023) and are essentially morality fables that are passed orally. They generally explain the relationships of the world, for example between humans and game animals, humans and mestizos, or the first family to the maize family (García Salido & Reyes Valdez 2015; Reyes Valdez et al. 2022). Life histories are stories from times in people's personal lives, in some cases they are about some particular event in the speaker's life, while two of the older speakers discussed how the communities they live in have changed since they were children. Both *sapook* and life histories are monologue genres. While recording both types of speech, I gathered O'dam speakers, often children, to listen to the stories. However, the interaction of the hearers consisted primarily of paralinguistic feedback, rather than linguistic participation. My consultants tell me that audience participation in the performance of *sapook* is commonly restricted to paralinguistic feedback, while life histories more commonly have some element of question and answer. I additionally recorded a discussion between two close friends who were young women (18-19yo). For the discussion recording, only the Rode microphone was used and placed in front of the two speakers, who sat next to each other.

In addition to my own recordings, I benefited greatly from previously published data. My primary sources of published data was García Salido (2014), Willett (1991: 271–6) and Willett & Willett (2015). My understanding of each data point from previously published used in this dissertation was informed by discussion with native speaker consultants. Willett (1991) uses an older orthography of O'dam, which differs from the modern orthography in certain systematic ways.[7] None of my consultants, nor any O'dam native speaker I spoke with was familiar with the orthography used in Willett (1991). I, therefore, elected to regularize the transcriptions from Willett (1991) according to the norms of the contemporary orthography, discussed in §2.2. This regularization was done in the interest of both consistency and so that any O'dam speaker can read the utterances I have included.

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or other forms of ID to give an exact age. Likewise, age is viewed differently in the rural communities of the Sierra Madre to European notions of age (García Salido 2014: f.19, see also Reyes Valdez 2006: 30.

[7]Some examples of differences between Willett's (1991) orthography and the contemporary O'dam orthography are <dy> instead of <dh> used for the [ʤ] sound, <c> and <qu> instead of <k> used for the [k] sound, <b> instead of <bh> used for [b], and <v> instead of <b> [β].

Finally, much of the data used for this project was gained from elicitation. All elicitation data was recorded and stored onto an Excel spread sheet where each O'dam sentence was tagged with Acceptability, O'dam (transcription), (morphological) Gloss, Translation, Notes, Consultant, Date. My elicitation was largely split into techniques surrounding data production and limit-testing. As much as possible I began with utterances produced in naturalistic contexts and then manipulated those sentences in elicitation. Where I could not find a necessary construction in naturalistic data (e.g. clauses with more than one overt argument XP) I used two forms of elicitation to gather the necessary data: storyboards and translation. I asked three consultants to write stories in O'dam based on the Totem Fields Storyboards Beekeeper (Dorreen et al. 2017), Chameleon Story (Group 2012), and Miss Smith's Bad Day (Matthewson 2014). I followed the methodological considerations discussed in Burton & Matthewson (2015) on storyboard use and construction. For translation I used translation from Spanish into O'dam (e.g. *cómo dices X?*) and created my own O'dam sentences to back translate into Spanish (e.g. *what would it mean if I said: jax jum-bua gu mees?*). For such production-oriented elicitation, I followed the methods and concerns discussed in Deal (2015) and Anderbois & Henderson (2015). In testing the limits of the use of a specific construction, I primarily manipulated the data produced through the aforementioned methods. Where it was possible, I discussed ambiguous interpretations of naturalistically produced speech. The methodologies I followed for elicitation were heavily influenced by Bochnak & Matthewson (2015). My investigation of definiteness was particularly influenced by the methods and concerns discussed in Gillon (2015).

My elicitation was initially conducted in person, however, once the COVID-19 pandemic cut my field trip short in March of 2020, I continued elicitation using the WhatsApp messaging platform. WhatsApp is widely used by my consultants and is ideal for elicitation sessions because it can be used exclusively over wifi (i.e. it does not cut into my consultants' data). Elicitation sessions over WhatsApp involved a video call, my consultant would also often write any target O'dam sentences in the WhatsApp messaging feed.

Now that I have discussed the methods used in carrying out the investigation discussed here. I next turn to some basic properties of the O'dam language that will be relevant throughout this dissertation.

2.2   The Phonology and Orthography

The consonants and vowels of O'dam are shown in Figure 2.3 and Table 2.1, and the symbols are from the modern O'dam orthography.[8] As this dissertation is primarily concerned with the syntax of argumenthood, I will not discuss the phonological processes of the language here. Where a phonological process becomes necessary to describe a phenomenon, I will discuss the relevant (morpho-)phonology (e.g. diagnosing the applicative affixes in Chapter 5). For a decent overview of O'dam's phonology and morphophonology, see Willett (1991: §2), especially §2.3. For more complete discussions of O'dam phonology and morphophonology see the work of Elizabeth Willett listed in the References, as well as Gouskova (2003).
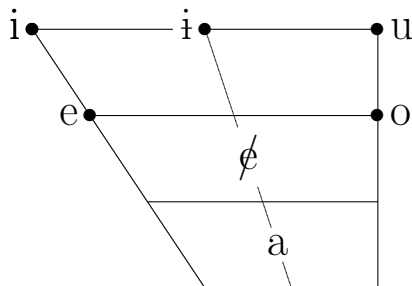
Figure 2.3: O'dam vowel chart

	Bilabial	Alveolar	Palatal	Velar	Glottal
Stop	p bh	t d		k g	'
Affricate			ch dh		
Fricative	b	s	x		j
Nasal	m	n	ñ	(ŋ)	
Lateral			lh		
Approximate		r	y		

Table 2.1: O'dam Consonant Chart

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[8]The <¢> symbol signifies a mid-central vowel (ə in standard IPA). The sound is also sometimes written as <ɜ> and <3> in O'dam texts.

2.3   Constituency and phrase structure

The phrase structure of O'dam can be broadly divided into fixed phrasal structure and free clausal structure. This distinction is, in part, what initially motivated the question of argumenthood pursued by this dissertation. We will see in this section that constituency tests offer very little insight into the syntactic relationships between the verb and its putative XP dependents. An O'dam matrix clause consists of three positions, shown in (35): the preverbal position (PreV), which I will discuss further below, the V, and the postverbal position (XP). The only clause type other than a main clause is a subordinate clause, which consists of a CP projected over a standard matrix clause, as in (36). The SpecCP in O'dam is highly restricted to only non-projecting heads, meaning only certain particles are permitted in SpecCP, I use the X̂ notation from Toivonen (2003). García Salido (2021) shows that the pronominal form of the of the demonstratives, *dhi'* and *gui'* 'proximal' and 'distal', respectively, are allowed in that position as relative clause heads.[9] Everdell & García Salido (2023) additionally find that evidential particles are allowed in the SpecCP position, although they do not head relative clauses like demonstratives do.[10]

(35)

S
├── S
│   ├── PreV*
│   └── V
└── XP*

(36)

CP
├── (D̂em/Êvid)
└── C′
    ├── C
    │   SUB
    └── S
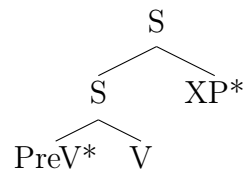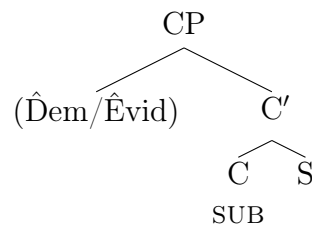
My choice of S as the highest node in a non-subordinate clause is for purely descriptive purposes. It is not clear what phrasal category unites the PreV, V, and XP areas, so I

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[9]García Salido (2021) calls such demonstratives 'light heads,' which she contrasts with full XP relative clause heads.

[10]For example, an evidential particle can appear in SpecCP in controlled clauses, or other non-relative clauses. In contrast, a demonstrative may only occur in SpecCP in light-headed relative clauses.

have selected S for descriptive purposes. Other Tepiman languages like Pima Bajo (Estrada Fernández 2014) and Tohono O'odham have an auxiliary position, as in the tree structure in (37b), based on (Hale & Selkirk 1987), from (37a). In (37a), the auxiliary *na* in first position is cognate with the *na* subordinator in O'dam that acts as a C^0 for subordinate clauses The auxiliary that is obligatory in all O'odham clauses and occurs in predictable positions allows Hale & Selkirk (1987) to propose that the verb and its XP dependents surface beneath the IP.

(37) a. *Na-t*   *g*   *wakial*   *g*   *wisilo* *cepos*
          INTER-AUX.3.SG.PERF   ART   cowboy   ART   calf   brand.PERF

      'Did the cowboy brand the calf?' (Hale & Selkirk 1987: 155)

   b.
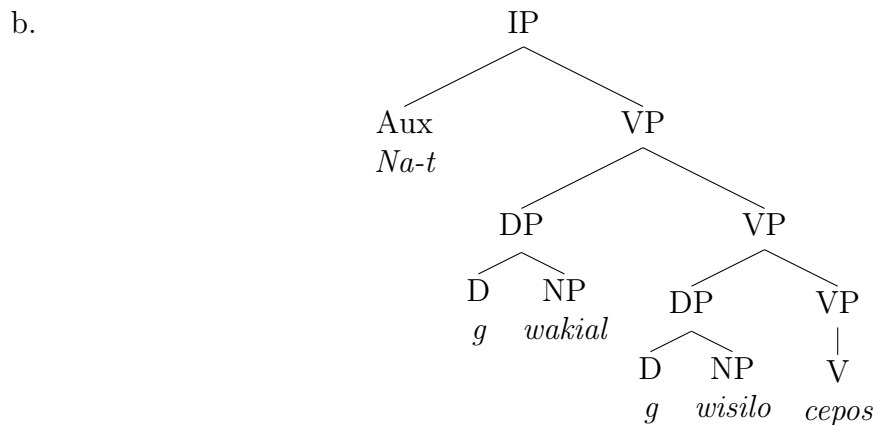
However, O'dam has largely lost the Tepiman auxiliary position (Bascom 1965). Instead, matrix clauses begin with the preverbal position. A series of particles in the preverbal position are shown in bold in (38).

(38) **Mejor** **sap** **ba'** **pui'** **cham** *bui-'ñ-ami-t*   *bajii*   *sap*
      better   REP.UI   SEQ   SENS   NEG   make-APPL-3PL.SBJ-PFV   come.PFV   REP.UI
      ba'
      SEQ

      'And more, they did not give him lunch and he left' (adapted from García Salido 2014:54)

The preverbal position consists of Topic XPs and particles which modify the event or clause

as a whole.[11] We see in (38) a series of such particles. The particles *mejor*,[12] *sap*, and *pui'* express modal and evidential meanings (see García Salido 2014: §2.4), and therefore relate to the clause as a whole, rather than a particular dependent (Willett 1988). The sequential *ba'* ties the clause discursively and temporally to the one preceding it, as does the *mejor* particle to some extent. Finally, the negator *cham* in (38), appears in its clausal negation position and must be interpreted as negating the clause as a whole, rather than a particular sub-constituent (Everdell & García Salido 2022a also García Salido 2014: §2.5.1).

The majority of elements in the preverbal position are non-projecting particles (Toivonen 2003). Evidence of a non-projection constraint here comes from the properties of negation, locatives, and quantifiers. Clausal negation must occur in the PreV position. In (39), the negator *cham* occurs in the PreV position of the subordinate clause, immediately preceding the subordinated verb *oidha'* 'accompany,' both in bold. Notice in (40) that the negator *cham* follows the negated element *gu nabat* '(the) mestizo', both in bold, because the negated element is a subconstituent of the clause. In the postverbal position, the negator *cham* only negates the constituent it immediately follows, not the clause as a whole.

(39) *Karabiñ-kɨ'n*   *tɨi*   *pu=p*   *jiñ-ma'yasa*   *na=ñi-ch*   ***cham***
      rifle-with   INT.NR   SENS=IT   1SG.PO-shoot   SUB=1SG.SBJ NEG

      oi
      accompany.PFV

'With a rifle he wanted to shoot me because I did not go with the...' (García Salido 2014: 110)

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[11]The preverbal position in O'dam is reminiscent of the Ramchand & Svenonius's (2014) Clausal Spine.

[12]The word *mejor* is borrowed from Spanish where it is the comparative form of *bien* 'good.' In my experience with O'dam, the word *mejor* does not have its full range of comparative functions it does in Spanish. For example, I have no instances of O'dam speakers using *mejor* to compare degrees of a property between two nouns, at least when they are speaking O'dam. Instead, I hear *mejor* used in its modal adverbial sense, where it relates clauses and expresses speaker attitude (Cornillie 2010).

(40)   *Ma'nim*   *dhu*   *gu*   *siman*   *ji*   *na=ñ*   *chu-bos-ka'*   ***gu***
       one.time   EVID.DIR   DET   week   FOC   SUB=1SG.SBJ   DUR-sweep-ST   DET

       nabat   ***cham***   *na-jax*   *xia'lhi-dha'*
       mestizo   NEG   SUB-ADVR   dawn-CONT

       'Once a week, I sweep, but the mestiza does not [Lit. but not the mestiza], whenever she wakes up.' (García Salido 2014: 110)

Similarly, locative particles either appear by themselves in the PreV position or in the post verbal position as an XP constituent. We see in (41) that the directional *bhammɨ*, shown in bold, does not appear with a nominal, indicating it is not phrasal, and occurs between the C^0 and the S's verb *aaya'*. In contrast, when locative expressions appear in the postverbal position, as bolded in (42), they contain a nominal element and are, thus, phrasal. Locative expressions have a particle, non-projecting, structure in the preverbal position and a phrasal structure in the postverbal position.

(41)   *Ba-ji-chu*   *sas-ji*   *gui'*   *sap*   *na=t*   ***bhammɨ***
       CMP-start-TERM   play-DC   DEM.DIST   REP.UI   SUB=3SG.SBJ-PFV   DIST.HIGHER

       ai
       arrive.PFV

       'He started playing when he arrived'

(42)   a.   *Jɨ'k*   *pɨx*   *ja-jotsa-'*   *gu*   *ma~mra-'n*   ***bhammɨ***
          some   MIR   3PL.PO-send-IRR   DET   PL~offspring-3SG.POSS   DIST.HIGHER

          pue'mlos
          towns

          'He's going to send some of his kids to (the) towns up there'

    b.   *Ba'*   *mɨkkat*   *ba'*   *almitiru-mɨ-t*   *sap*   *na*   *tu-juan-da'*   ***mi'***
          SEQ   after   SEQ   admit-3PL.SBJ-PFV   REP.UI   SUB   DUR-work-CONT   DIR

          aserrin-ta'm
          sawdust-in

          'After they admitted him to work in the sawmill there' (García Salido 2014: 237)

Topical XPs are the only phrasal unit permitted in the preverbal position. In (43) we see the conditional auxiliary *no'* in the C^0 position, recall from the tree in (36) that the C^0 immediately precedes the S that is its complement. The DP *ma'n gu ma'nkam* 'one person'

occurs in the PreV position of the S containing the verb *bajimia'* 'come.' In this context it is topicalized. Contrast the position of *ma'n gu ma'nkam* 'one person', with the DP *dhi llave* 'this key,' which occurs in the postverbal position of the S containing the verb *makia'* 'give.'

(43) | *No'* | *[ma'n* | *gu* | *ma'nkam]$_{Topic}$* | *bajimi-a'* | *xi-maki-a'-ap* | *[dhi* |
|------|--------|------|---------------------|-------------|-----------------|--------|
| COND | one | DET | person | come-IRR | IMP-give-IRR-2SG.SBJ | DEM.PROX |

llave]$_{Non-topic}$
key

'If someone comes, give them this key'

While preverbal particles always arise in the preverbal position, they are freely ordered within that position. From the elicited sentence in (44a) we see that all possible orders of the preverbal particles are acceptable, and maintain the same reading. While the preverbal particles can be freely reordered, the subordinator maintains the historical position of the auxiliary (Bascom 1965), where it must precede the preverbal particles, as in (44g). Thus the difference between a standard and subordinate clause is a phrasal projection involving the subordinator.

(44) a. | *Pui'* | *kai'ch* | *na-gu'* | **sap** | **cham** | **pui'** | *ka-kaich-dha'* | *na=m* |
|--------|----------|----------|---------|----------|----------|-----------------|--------|
| SENS | say | SUB-ADVR | REP.UI | NEG | SENS | PERF-say-APPL | SUB=3PL.SBJ |

xi-chu-aga'	*ba'*	*mi'*
IMP-DUR-speak	SEQ	PROX.LOWER

'He said, because he is not going to say that they talk there.' (adapted from García Salido 2014:261)

b. *Pui' kai'ch na-gu'* **sap pui' cham** *ka-kaich-dha' na=m xi-chu-aga' ba' mi'*

c. *Pui' kai'ch na-gu'* **cham pui' sap** *ka-kaich-dha' na=m xi-chu-aga' ba' mi'*

d. *Pui' kai'ch na-gu'* **cham sap pui'** *ka-kaich-dha' na=m xi-chu-aga' ba' mi'*

e. *Pui' kai'ch na-gu'* **pui' sap cham** *ka-kaich-dha' na=m xi-chu-aga' ba' mi'*

f. *Pui' kai'ch na-gu'* **pui' cham sap** *ka-kaich-dha' na=m xi-chu-aga' ba' mi'*

g. **Pui' kai'ch* **pui' cham sap** *na-gu' ka-kaich-dha' na=m xi-chu-aga' ba' mi'*

Topic XPs seem to most often come first in the preverbal position, especially if they are particularly large. However, they also are often found without other co-occurring preverbal

particles. We see in (45) that the DP *dai bapaiñum* 'pure iron' precedes the possessive verb *tu-raroi'ñ* '(the train's) wheels'. Thus, it appears in the topic XP position, however, there are no other preverbal particles in the preverbal position either. I was unable to run the same paradigm in (44) with a topicalized nominal. I used *gu Mauro* 'Mauro' and *gu chio'ñ* '(the) man' in place of the pronominal subject of *kaichdha'* 'speak,' but my consultants heavily preferred the XP subjects in the postverbal positions of either *kakaichdha'* 'speak to someone' or the matrix verb *kai'ch* 'speak.' I leave to future work to more accurately describe the relative ordering of the preverbal position elements.

(45) [*Dai*   *ba~paiñum*]$_{Topic}$ *tu-ra~roi'ñ*   [*gu*   *tren*]$_{Non-topic}$
      only   PL~iron   POSS-PL~wheel   DET   train

'The train wheels are made of pure iron' [Las ruedas del tres son de puro fierro] (Willett & Willett 2015: 14)

In (35), I put the entire verbal word into the V. There is no evidence of a constituent consisting of the object XP and verb to the exclusion of the subject XP. For example, in (46) we see that the coordinated XP *gu jose* 'José' can be interpreted as either coordinated with the subject or object of the verb *a'gidha'* 'talk to someone.' The coordination facts are the same regardless of whether the coordinator is disjunctive, as in *kia* in (46a), or conjunctive, as in *gio* in (46b).

(46) a. *Ap=a*   *tu-ñ-agi-'ñ*   *kia*   *gu*   *jose*
          2SG.SBJ=Q   DUR-1SG.PO-speak-APPL   or   DET   José

      'Are you talking to me or to José?'
      'Are you or José talking to me?

      b. *Ap=a*   *tu-ñ-agi-'ñ*   *gio*   *gu*   *jose*
          2SG.SBJ=Q   DUR-1SG.PO-speak-APPL   COORD   DET   José

      'Are you talking to me and to José?'
      'Are you and José talking to me?

In (47), the clause containing the verb *ga'nga'* 'search' is coordinated with the clause containing *jumpada'* 'collect.' I have bracketed the coordinated clauses for clarity. As with nominal coordination, we see that two verbs can be coordinated with the same nominal *gu ku'a'* 'firewood' being interpreted as the object of both. I have shown the possible locations of *gu*

ku'a' 'firewood' in (47): in the preverbal position of the analytical causative *chia'*, in the postverbal position of *jumpada'* 'collect', or following both clauses. My consultants report there is no acceptability difference among *gu ku'a'* 'firewood' being realized in the different positions.

(47) a. *{Gu   ku'a'}   jum-chia-'-iñ   na[=p   jumpada-'   {gu*
          DET   firewood   2SG.PO-send-IRR-1SG.SBJ   SUB=2SG.SBJ   collect-IRR   DET

          ku'a'}]ₛ   gio   [gu   jose   ga'nga-']ₛ   {gu   ku'a'}
          firewood   COORD   DET   Jose   search-IRR   DET   firewood

          'I tell you to collect firewood and Jose to search (for it)'

Where there is some evidence of a constituent consisting of the verb and object excluding the subject is in head-marking. Notice in (48) that the subject can be realized either as a suffix or a preverbal free form, as shown in bold in (48a) and (48b), respectively.

(48) a. *Tu-ñ-agi-'ñ-**ap**=**a***
          DUR-1SG.PO-speak-APPL-2SG.SBJ=Q

          'Are you talking to me?

      b. ***Ap**=**a**   tu-ñ-agi-'ñ*
          2SG.SBJ=Q   DUR-1SG.PO-speak-APPL

          'Are you talking to me?

The interrogative *=a* is a second position clitic, thus, we see that the free form of the subject is outside of the verbal word, because in (48b) it occupies the first position. In contrast, the Primary Object marker must appear within the verbal word, notice in (49) that the 1SG object prefix *jiñ-* cannot move to the front of the verbal word, nor affect the position of the second position clitic *=a*.

(49) ***Jiñ={a}***   *Tu-agi-'ñ-ap{=a}*
      1SG.PO=Q   DUR-speak-APPL-2SG.SBJ=Q

      Intended: Are you talking to me?

This is to say the subject can raise out of the verbal word to the preverbal position, where it is also phonologically realized as a phonological word (Tallman et al. 2018). In contrast,

the Primary Object prefix must appear within the verbal word, suggesting a constituent containing the verb and its object, to the exclusion of the subject.

      While the S in O'dam shows a relatively flat structure, there is quite strong evidence for strictly embedded constituencies for certain phrasal units, namely DPs, PPs, and CPs. For CPs, the matrix clause can precede or follow the CP, compare the ordering of bolded *pui' kai'ch* 'Well he said' in (50a) and (50b). However, the matrix clause cannot occur between the subordinator and the S constituent it governs. Likewise, the bolded adverbial *takaab* 'yesterday' in (50b) appears within the subordinate clause and must be interpreted as pertaining to the subordinate clause, not the matrix clause, shown in the translations in (50b).

(50) a. **_Pui' kai'ch_** *na-gu'* *sap*   *cham* *pui'* *ka-kaich-dha'* *na=m*
           SENS   say   SUB-ADVR REP.UI NEG SENS   PERF-say-APPL

                xi-chu-aga'   *ba'*   *mi'*
                SUB=3PL.SBJ IMP-DUR-speak SEQ

          'He said, because he is not going to say that they talk there.' (adapted from García Salido 2014:261)

      b. *Na-gu'*   **_takaab_**   *sap*   *cham* *pui'* *ka-kaich-dha'*   *na=m*
           SUB-ADVR yesterday REP.UI NEG   SENS PERF-say-APPL   SUB=3PL.SBJ

                xi-chu-aga'   *ba'* *mi'*   **_pui'_** **_kai'ch_**
                IMP-DUR-speak SEQ PROX.LOWER SENS say

          'Because he is not going to say that they talk there **yesterday**, he said.'
          *Because he is not going to say that they talk there, he said **yesterday**

Likewise, PPs can be variably placed within an S. For example, using the PP *gu espejo-ta'm* 'in (the) mirror' in the postverbal position in (51) or the topicalized preverbal position in (51b). However, we see in (51c) that a PP cannot be split up and in (51d) we see that it must occur in the order Nominal-Postposition

(51) a. *Na-gu'*   *sap*   *gu*   *bho'mkux* *cham* *jum-nɨ~nɨi'ñ* *[gu*
           SUB-ADVR REP.UI DET techalote NEG MID-PL~see DET

                *espejo-ta'm]_Postverbal_*
                mirror-in

          'Because the Techalote does not see himself in the mirror.' (García Salido 2014: 67)

b. *Na-gu'*   *sap*   *[gu*   *espejo-ta'm]*_{Topic} *cham* *jum-nɨ∼nɨi'ñ*
   SUB-ADVR REP.UI DET mirror-in   NEG   MID-PL∼see

   'Because he does not see himself in the mirror.'

c. **Na-gu'[-ta'm]*_P* *sap*   *cham* *jum-nɨ∼nɨi'ñ* *[gu*   *espejo]*_{PP}
   SUB-ADVR–in REP.UI NEG MID-PL∼see DET mirror

   Intended: Because he does not see himself in the mirror.

d. **Na-gu'*   *sap*   *gu*   *bho'mkux* *cham* *jum-nɨ∼nɨi'ñ* *[-ta'm* *gu*
   SUB-ADVR REP.UI DET techalote NEG MID-PL∼see   -in   DET

   *espejo]*_{PP}
   mirror

   Intended: Because the Techalote does not see himself in the mirror.

While PPs cannot be split, postpositions are allowed to occur without an overt complement nominals. For example, to make an instrumental relative clause, the postposition cliticizes to the C head of the relative clause (García Salido 2021). This is shown in (52), where the the postposition *kɨ'n* 'with' is shown in bold. Note that postpositions that cliticize to the C, always follow other elements also cliticized to the C, for example the preverbal subject in (52).

(52) *Mɨjɨ* *da-ka-t*   *tu-a'ga*   *na-gu'*   *bakax* *jix=gak-xi*   *gamtu'-am*
     DIR   sit-ST-IMPF DUR-talk SUB-ADVR meat COP=dry-RES bring-3PL.SBJ

     *[na=m-**kɨ'n**   *tu-koi-dha']*_{RelativeClause}
     SUB=3PL.SBJ-with DUR-eat-CONT

   'He was sitting talking, because they brought dried meat, with which they will eat.'
   (García Salido 2014: 160)

As with PPs, DPs in O'dam are strictly ordered internally and form a clear tree structure shown in (53). Nominals must appear as DPs when they appear as a clausal dependent and the elements in (53) are rigidly ordered. All three nominals in (54) appear as DPs, indicated by the *gu* determiner, and that determiner must precede the NP embedded within its phrase.

(53)

```
                        DP
                       /  \
                     QP    D′
                          /  \
                         D    NP
                             /  \
                          Poss   N′
                                 |
                                 N
```
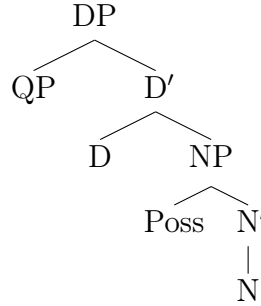
(54) a. *Jaisa*   *[gu-ñ*   *ami']*$_{DP}$ *[gu*   *taas]*$_{DP}$
          break.PL   DET=1SG.POSS   friend   DET   glass

          'My friend broke the glass'

      b. *dhi'*   *jir=joñga-'n*   *[gu*   *Pedro]*$_{DP}$
          3SG.SBJ   COP=wife-3SG.POSS   DET   Pedro

          'She is Pedro's wife'

While the XPs that appear in the postverbal position show clear internal constituency properties, it is not as clear that relationships between XPs or between XPs and clauses are constituents. For example, relative clauses often appear immediately following their nominal head.[13] We see in (55) that the subordinate clause, with *na* in C position, immediately follows the DP *guñ kukulsi* 'my grandparents' and expresses where the referents of the DP live.

(55) *Mu*   *jotxi-dha-'-iñ*   *[gu=ñ*   *ku~kulsi]*$_{RelativeClauseHead}$ *[na=m*
      DIR   send-APPL-IRR-1SG.SBJ   DET   PL~grandfather   SUB=3PL.SBJ

          bhammɨ   *oidha*   *korian]*$_{RelativeClause}$
          DIST.LOWER   live   Durango

      'I am going to send them to my grandparents, who live in Durango'

However, the nominal head can be topicalized, while the relative clause remains in situ. We see in (56a) that topicalized *gu kukulsi* occurs in the preverbal position of *jotxidha'* 'send to someone,' but the relative clause remains in the postverbal position of *jotxidha'* 'send to someone.' In addition, the relative clause can appear without any overt head whatsoever.

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[13]While I show a DP head in (55), PP heads are also acceptable and well attested.

We see in (56b) that the clause lacks any overt nominal XP and yet, the interpretation of the relative clause, in brackets, is equivalent to (55)

(56) a. *Mu* *[gu=ñ* *ku~kulsi]*_{RelativeClauseHead} *jotxi-dha-'-iñ* *[na=m*
     DIR   DET   PL~grandfather   send-APPL-IRR-1SG.SBJ   SUB=3PL.SBJ

     bhammɨ   *oidha*   *korian]*_{RelativeClause}
     DIST.LOWER   live   Durango

     'I am going to send them to my grandparents, who live in Durango'

  b. *Mu*   *jotxi-dha-'-iñ*   *[na=m*   *bhammɨ*   *oidha*
     DIR   send-APPL-IRR-1SG.SBJ   SUB=3PL.SBJ   DIST.LOWER   live

     *korian]*_{RelativeClause}
     Durango

     'I am going to send them to my grandparents, who live in Durango'

Moreover, so-called subordinate clauses do not show any obvious constituency with their putative matrix clause. In (57a), we see two clauses, the first is a matrix S, while the second is a CP expressing a reason for the assertion in the matrix S. We see in in (57b) that the putatively embedded CP can precede its matrix S.

(57) a. *[Ya'*   *añ*   *jir=jiñ-dhɨbir]*_S   *[na=ñ-gu'*   *bajɨɨk*   *dɨr*   *ya'*
     PROX   1SG   COP=1SG.POSS-land   SUB=1SG.SBJ-ADVR   long.ago   from   PROX

     *ti-is]*_{CP}
     DUR-plant

     'This is my land because I have been planting here long ago'

  b. *[Na=ñ-gu'*   *bajɨɨk*   *dɨr*   *ya'*   *ti-is]*_{CP}   *[ya'*   *añ*
     SUB=1SG.SBJ-ADVR   long.ago   from   PROX   DUR-plant   PROX   1SG

     *jir=jiñ-dhɨbir]*_S
     COP=1SG.POSS-land

     'Because I have been planting here long ago, this is my land' (adapted from Willett 1991:241)

Second, we see in (58) that an S can divide the CP in (57) from its matrix S_1; the intruding S_2 is shown in bold. The speaker is asserting that his planting in the area makes the land his, thus, the reason clause applies to S_1, which it is not contiguous with. The utterance does not express that his family lives in the area because they have been planting there, although

that is a possible interpretation of (58).

(58) [Na=ñ-gu'   bajɨɨk   dɨr   ya'   ti-ɨs]_CP   **[ya'   oidha'**
      SUB=1SG.SBJ-ADVR   long.ago   from   PROX   DUR-plant   PROX   live

      gu=ñ   **pamil]**_S₂ [ya'   añ   jir=jiñ-dhɨbɨr]_S₁
      DET=1SG.POSS   family   PROX   1SG   COP=1SG.POSS-land

'Because I have been planting here long ago, my family lives here, this is my land'

Likewise, strings of linked clauses can be freely reordered without a change in their inter-
pretation, compare the synonymous utterances in (59a) and (59b).[14] The order in (59b) is
especially notable because the conditionality expressed by CP$_1$ scopes over CP$_2$ despite the
CP$_2$ occurring first and being discontiguous from CP$_1$.

(59) a. [Jiñ-oidha-'-ap]_S   [no'=p   jix=a']_CP₁   [na=p
          1SG.PO-accompany-IRR-2SG.SBJ   COND=2SG.SBJ   COP=want   SUB=2SG.SBJ

          tu-kio-ka-'   gammɨjɨ]_CP₂
          DUR-live-ST-IRR   always

          'Come with me if you want to always live (with me)' (adapted from Willett
          1991:246)

      b. [Na=p   tu-kio-ka-'   gammɨjɨ]_CP₂   [jiñ-oidha-'-ap]_S
          SUB=2SG.SBJ   1SG.PO-live-IRR-2SG.SBJ   always   always

          [no'=p   jix=a']_CP₁
          1SG.PO-accompany-IRR-2SG.SBJ   COND=2SG.SBJ

          'Come with me if you want to always live (with me)' (adapted from Willett
          1991:246)

What we have seen is that the constituency tests offer clear evidence of dependency
and embeddedness within smaller phrases like PPs, DPs, and CPs. However, such tests do not
offer clear evidence of constituency among those XPs. For the purposes of this dissertation, it
is important that there is relatively little constituency evidence tying a verb to its putative XP
dependents. This raises the possibility that those dependents are adjuncts, which I explore
in Chapter 3.

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[14]The different orders in (59) are pragmatically different and correspond to differences in emphasis.

Chapter 3

O'dam grammatical functions: generalized argumenthood tests

In this chapter I offer a first pass at the distinction between arguments and adjuncts in O'dam. I will use relatively standard argumenthood tests and we will see that they overall fail to generate useful results in O'dam. In §3.1 I will discuss previous approaches to argumenthood in O'dam. These rely almost entirely on verbal head-markers because surface facts about the language do not distinguish types of dependents. The ostensibly exclusive diagnostic power of verbal head-marking will offer a starting hypothesis that O'dam arguments are saturated by those diagnostic argument affixes, making O'dam a putative Pronominal Argument Language (see §1.2.3). Starting in §3.2.1 I will examine how properties predicted to apply to Pronominal Argument Languages apply to O'dam. I will show that O'dam overall does have many properties of a Pronominal Argument Language. However, we will see that this is in part due to the simple non-applicability of many tests. This will motivate the search for language internal tests to put some flesh on O'dam argumenthood, which I will do in Chapters 4 and 5.

3.1 A first pass at the argument-adjunct distinction: previous work on O'dam

In this section we will see that O'dam as a language offers very little surface facts to rely on to distinguish grammatical functions. However, the co-reference of certain dependents on the verb head is taken as an extremely common argumenthood test for head-marking languages

(see work following from Nichols 1986 such as van Valin Jr 1987, 2013; see also Kibrik 2012; Wichmann 2008). As such, we will see that previous approaches relied on that head-marking, and that such reliance opens the door to test Pronominal Argument properties of O'dam.

3.1.1 Head-marking as an argumenthood diagnostic

Previous work on O'dam relied on verbal head-marking to distinguish grammatical functions (Willett 1991). Verbal head-marking is determined by the markers in Table 3.1. Two allomorphic rules affect the subject and primary object forms, the first is that the initial /a/ of the subject free forms will often delete following vowel-final words, the remaining segment will then cliticize onto the preceding word. The object prefixes undergo a similar rule /jV$_{[high]}$/ > Ø / V(#)___. These are, crucially, processes affecting the morphophonological realization of the markers in Table 3.1. I have found no evidence that they have any morphosyntactic effect (e.g. movement), nor has any previous study of O'dam proposed as much.

	Subject free form	Subject suffix	Primary object prefix
1SG	(a)ñ	-'iñ, -(a)ñ	(ji)ñ-
2SG	(a)p	-'ap, -(a)p	(ju)m-
3SG	Ø	-Ø	Ø-
1PL	(a)ch	-'ich, -(a)ch	(ji)ch-
2PL	(a)pim	-(')(a)pim	jam-
3PL	am	-(')(a)m	ja-

Table 3.1: Subject and primary object markers

The subject markers in Table 3.1 do not co-occur. Notice in the examples below that the subject of each verb, given in bold, appears as either a preverbal free form, shown in (60), or a verbal suffix, shown in (61). The free form subject markers act like second position clitics when they are suffixed with the perfective -t, which I discuss further in §3.2.2. Important here is that the perfective subject in (60b) appears in the preverbal position, while it occurs as a verbal suffix in (61b).

(60) a. ***Añ***   *tu-ja-maa*   *gu*   *ta~toxkolh*   *gu*   *koi'*
          1SG.SBJ   DUR-3PL.PO-give.PFV   DET   PL~pig   DET   food

      'As for me, I gave food to the pigs' (García Salido 2014: 49)

   b. *Bhai'=**mɨ-t***   *sap*   *pɨx*   *ji*   *chɨɨ*
       DIR=3PL.SBJ-PFV   REP.UI   MIR   FOC   see.PFV

       'Supposedly, they saw him there' (García Salido 2014: 128)

(61) a. *Jim-dha'-**am***   *gu*   *a~'alh*   *jim-dha'-am*   *sap*
          move-APPL-3PL.SBJ   DET   PL~boy   move-APPL-3PL.SBJ   REP.UI

      'They walked with the kids, they walked with them, supposedly' (García Salido
      2014: 183)

   b. *Mi'*   *sap*   *pai'*   *xi-yaspak-**amɨ**-t*   *na=Ø-t-pai*   *ba-muu*
       DIR   REP.UI   where   IMP-bury-3PL.SBJ-PFV   SUB=3SG.SBJ-PFV-ADVR   CMP-die

       'Over there, they buried him when he died' (García Salido 2014: 47)

Across languages, participants and verbal dependents that are co-referenced on a verb are assumed to be that verb's arguments (Bohnemeyer et al. 2016; Nichols 1986, 2017, but see also Bohnemeyer & Tilbe 2021). Participants and dependents not associated with a verbal subject-object marker are assumed to be adjuncts. On its face, verbal co-reference thus divides clausal dependents into reasonable argument and adjunct groups. For example, we see in (62) that the primary object prefix on the transitive verb *bua~iobu'* 'throw.SG/PL' indicates the thrown theme, while the subject suffix indicates the thrower.

(62) *Mu*   ***ja-**/*jum-iobu'-**iñ***   *gu*   *pi~plot*   *jum-bui*
      DIR   3PL.PO/2SG.PO-throw.PL-1SG.SBJ   DET   PL~ball   2SG-COM

      'I am throwing the rocks with you'

In (62) all of the event participants are indexed on the verb, the thrower and throwee. The commitative construction[1] OBJ-*bui'* appears in (62) and expresses a participant that is somehow associated with the event, but, crucially, does not take part in the event denoted by

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[1]The N-*bui'* construction either consists of a nominal base or a primary object prefix attached to -*bui'* 'eye'. Nominals in this construction are expressed as a bare N, for example *gagoox-bui'* 'with (the/a) dog', *go'ngox-bui'* 'with (the) dogs', *wendy-bui'* 'with Wendy.' Pronouns are realized in their object form, for example *jiñ-bui'* 'with me', *jum-bui'* 'with you.SG,' but not **añ-bui'* or *ap-bui'.

the verb. In (62), *jum-bui'* 'with you' expresses that the hearer is standing near the speaker but is not throwing any rocks, or helping the subject throw any rocks. Participants expressed by a N-*bui'* construction are non-participants in the event denoted by their associated verb and, expectedly, are never co-referenced on the verb. In (63) we see that the subject can either surface as a preverbal free form, or as a suffix, but not both, as I will discuss further in §3.2.1. As shown in Table 3.1, object markers have a single prefixal form and cannot appear elsewhere in the clause (e.g. as a preverbal free form).

(63) a. ***Ap***   *mu*   *jiñ-bua'*
          2SG.SBJ   DIR   1SG.PO-throw.SG

      'You are throwing me.'

      b. *Mu jiñ-bua'-**ap***

O'dam is a nominative-accusative language, so subject marking for intransitive verbs matches subject marking for transitive verbs. We see in (64a) that the state *ikora'* 'dirty' is predicated on *memes* 'tables', which is co-referenced by the subject suffix on the copular verb construction.[2] Likewise, in (64b) we see that *a'ga'* 'speak' co-references the speaker as its subject. We also see in (64b) that the locative expression *jɨ'k pɨx pue'mlos* 'some (individuated) towns' cannot be co-referenced on the verb, even though the existence of a location for an event is generally considered to be entailed. As I will show further in Chapter 4, locative expressions in O'dam are systematically treated as adjuncts.

(64) a. *Cham*   *jix=ikora'-am*   *gu*   *me~mes*
          NEG   COP=dirty-3PL.SBJ   DET   PL~table

      'The tables are not dirty'

      b. *Mu*   *ja'p*   *tu-(*ja-)a'ga-'-am*   *jɨ'k*   *pɨx*   *pue'mlos*
          DIR   DIR   DUR-3PL.PO-speak-IRR-3PL.SBJ   some   MIR   towns

      'They speak (regularly) at some towns'

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[2]I follow García Salido (2014) in notating copulas as proclitics. Copulas are part of the verbal word (Everdell 2021a), however, I am suspicious about whether copulas are better analyzed as prefixes, along the lines of the *tu-* possessive verb prefix (Willett 1991). I leave this issue of whether O'dam copulas are proclitics or prefixes for future work.

Thus, head-marking in O'dam divides clausal dependents into two groups: those which are co-referenced and those which are not. The former group can be reasonably classed as arguments, because it consists solely of entailed participants of the eventuality denoted by the head-marked verb and contain thematic roles such as Agent and Patient, which are cross-linguistically treated as arguments (Witzlack-Makarevich & Bickel 2019). In contrast, all non-entailed participants fall into the latter group, meaning that it can be reasonably called the adjunct set. Locative expressions are also in the adjunct set; this is cross-linguistically less common (Mateu 2017; Nam 2012), as Source, Goal, and location arguments are commonly used thematic roles (see e.g. Fillmore 1970). However, we will see strong evidence for the systematic adjunct status of locative expressions in O'dam. In Chapter 4 I will problematize head-marking as an argumenthood diagnostic because O'dam verbs can only co-reference one object, as we saw for Oneida in §1.2.2. This falsely predicts that there are no ditransitives, when, in fact, head-marking underpredicts the valency of ditransitives. I next turn to other common argumenthood diagnostics that perform even worse than head-marking does in distinguishing grammatical functions.

3.1.2 Obligatoriness, case marking, and word order

Previous work on O'dam has hung its hat on head-marking as an argumenthood diagnostic (Willett 1991: 189ff) because all other standard argumenthood tests fail to distinguish between grammatical functions of any kind. For example, the verb is the only obligatory part of an O'dam clause, therefore obligatoriness fails to distinguish between XP dependents of any kind. We see in (65)–(67) that the verb is the only obligatory element of a simple clause, regardless of the verb's valency.[3] Impressionistically, it is quite rare for more than one (if any) putative arguments of a verb to receive an overt XP exponent, see for example the O'dam text in García Salido et al. (2021b); Willett (1991: 266-7) and García Salido (2014: 82) have noted the same. Payne (1987) investigates DP appearance in Tohono O'odham,[4] a fellow Tepiman language, and finds that the number of overt DPs in a clause is consistently one

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[3]Subordinate clauses require a CP projection, which involves an obligatory overt C.

[4]Payne (1987) calls the language *Papago*, this name is no longer considered appropriate by the Tohono O'odham nation.

less than the verb's valency (i.e. transitive verbs consistently appear with one DP and di-transitives consistently appear with two DPs). While future work may find that some sense of probabilistic overt expression distinguishes arguments from adjuncts, obligatoriness does not distinguish XPs of any kind.

(65) Intransitive (stative and eventive)

    a. *Sɨlhñ̃-ix-Ø*
        straight-RES-3SG.SBJ

        'It is straightened'

    b. *Mɨmra-Ø*
        run.SG.PRES-3SG.SBJ

        'S/he is running

(66) Transitive
    Ja-gɨb-am
    3PL.SBJ-hit-3PL.SBJ

    'They$_i$ hit them$_j$[5]

(67) Ditransitive
    Ø-mak-Ø
    3SG.PO-give-3SG.SBJ

    'S/he gives it to her/him'[6]

Note that the optionality of XPs has no effect on the obligatoriness of verbal head-marking. DPs expressing the primary object always occur with the primary object prefix. The subject suffixes are well attested with co-referenced nouns, as shown in (68), where the subject suffix and DP are bolded. Free form subjects co-occurring with subject DPs is well

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[5]Because the primary object prefix in (66) is not the *jum-* non-singular middle prefix, the subject and object in this sentence cannot be interpreted coreferentially.

[6]The third person agent and recipient here may or may not be co-referenced depending on whether the theme or recipient are the primary object. The secondary object in (67) can have any ɸ-feature combination without changing the surface morphosyntax of the clause, see Chapter 4.

attested in subordinate clauses, as in (69) using the same bolding.

(68) Subject DP plus subject suffix

    a.   *Ya'* *jai'ch-**am**   **gu**   **o'dam***
         DIR   EXIST-3PL.SBJ   DET   O'dam

         'Here, there are O'dam' (García Salido 2014: 94)

    b.   *Tu'nki-dha'-**m***   ***u'~ub***   ***gio***   ***gu***   ***chi~chio'ñ***
         jump-CONT-3PL.SBJ   PL~woman   COORD   DET   PL~man

         'Women and men are jumping' (García Salido 2014: 94)

    c.   *Mu*   *sap*   *pɨx*   *ji*   *juruñ-**amɨ-t***   ***gu***   ***xi~xioghi-'ñ***
         DIR   REP.UI   MIR   FOC   stay-3PL.SBJ-PFV   DET   PL~brother-3SG.POSS

            na=m   *tu-juan*
            SUB=3PL.SBJ   DUR-work

         'That over there, accordingly, they stayed (several day), his brothers, who were working' (García Salido 2014: 87)

(69) Subject DP plus free form subject
    Dai   *na-gu'*   *gu*   *tu'*   *ga~gat-kɨ'n*   *pɨx*   *dai*   *gu*
    only   SUB-ADVR   DET   something   PL~bow-with   MIR   only   DET

    tu'   *bapghiomkar-kɨ'n*   *na=mɨ-t*   *tɨi*   *pu=p*
    something   sling-with   SUB=3PL.SBJ-PFV   INT.NR   SENS=IT

    tu-mai'yasi-mɨk   *gui'*   *na=**mɨ-t***   *bhai'*   *ji*
    DUR-throw.rocks-PNCT   3PL.SBJ.VIZ   SUB=3PL.SBJ-PFV   DIR   FOC

    ai   ***gu***   ***na~nbat***
    arrive.PFV   DET   PL~mestizo

    'Because only with bows, only with sling, they were throwing, there the mestizos came' (García Salido 2014: 123)

I have no attested cases of a free form subject in a non-subordinate clause co-occurring with a co-referential DP. I asked my consultants how the sentence in (68c) would sound if the subject was a preverbal freeform. They stated it sounded repetitive because the preverbal subject sounds like you already knew something about the subject. This suggests a pragmatic avoidance to DPs with a preverbal subject, because free form subjects are used for topicalization, i.e. they generally refer to discourse old information.

    As with obligatoriness, neither positionality nor case marking distinguish grammatical

functions. We see in (70) that the sentences 'The men threw water to the women' and 'The women threw water to the men' can be expressed with any order of postverbal DPs, and any number of those DPs. Moreover, only context differentiates whether the 3PL subject *-am* is co-referential with *gu chichio'ñ* '(the) men', or *gu u'uub* '(the) women', there is no relevant morphological or positional difference between the two. Moreover, *gu suudai'* '(the) water' is only prevented from being the agent/subject (i.e. the water threw the men/women to the women/men) or the recipient/object (i.e. the men/women threw the women/men to the water) because of the ɸ-feature marking of the subject and primary object markers on the verb, *gu suudai'* would trigger 3SG marking. Crucially, there is no case marking on the DP *gu suudai'* 'the water' itself indicating its grammatical function.

(70) '(The) men threw water to (the) women/(the) women threw water to (the) men'

a. *Bhai'* *ja-choi-dha-'am*   *(gu*   *chi∼chio'ñ)* *(gu*   *u'∼uub)*   *(gu*
    DIR   3PL.PO-serve-APPL-3PL.SBJ DET PL∼man   DET PL∼woman DET

    sudai')
    water

                                                                          VSOX

b. *Bhai'* *ja-choi-dha-'am*   *(gu*   *chi∼chio'ñ)* *(gu*   *sudai')* *(gu*
    DIR   3PL.PO-serve-APPL-3PL.SBJ DET PL∼man   DET water   DET

    u'∼uub)
    PL∼woman

                                                                          VSXO

c. *Bhai'* *ja-choi-dha-'am*   *(gu*   *u'∼uub)*   *(gu*   *chi∼chio'ñ)* *(gu*
    DIR   3PL.PO-serve-APPL-3PL.SBJ DET PL∼woman DET PL∼man   DET

    sudai')
    water

                                                                          VOSX

d. *Bhai'* *ja-choi-dha-'am*   *(gu*   *u'∼uub)*   *(gu*   *sudai')* *(gu*
    DIR   3PL.PO-serve-APPL-3PL.SBJ DET PL∼woman DET water   DET

    chi∼chio'ñ)
    PL∼man

                                                                          VOXS

e. *Bhai' ja-choi-dha-'am*   *(gu sudai') (gu u'∼uub) (gu*
   DIR   3PL.PO-serve-APPL-3PL.SBJ   DET   water   DET   PL∼woman   DET

     chi∼chio'ñ)
     PL∼man

                                         VXOS

f. *Bhai' ja-choi-dha-'am*   *(gu sudai') (gu chi∼chio'ñ) (gu*
   DIR   3PL.PO-serve-APPL-3PL.SBJ   DET   water   DET   PL∼man   DET

     u'∼uub)
     PL∼woman

                                         VXSO

In addition to free ordering of putative argument XPs, we also see in (71) that putative arguments and adjunct XPs can also be freely ordered with respect to each other. We see in (71a) that the adjunct locative *kiicham* precedes the object DP *gu suudai'*, while the order is flipped in (71b) with no commensurate change in grammatical function.

(71)   a.   Adjunct-Argument
       *[Tañ-mɨra'-ap bhammɨ **kicham** **gu sudai'**] ja'p sap*
       ask-MOV-2SG.SBJ   DIR   inside.the.house   DET   water   DIR   REP.UI

           tɨtda-'am jii sap na=Ø-t tu-tañ-im
           say-3PL.SBJ   go   REP.UI   SUB=3SG.SBJ-PFV   DUR-ask-PROG

       'Go and ask for water over there in the house, they said like that and he went asking' (García Salido 2014: 139)

   b.   Argument-Adjunct
       *No'=pi-ch mo ɨlhi'ch tu-tañ-im **gu sudai'** mi'*
       COND=2SG.SBJ-PFV   doubt   little   DUR-ask-PROG   DET   water   DIR

           kiicham
           inside.the.house

       'What if you go and ask for some water over there to that house' (García Salido 2014: 139)

Thus, standard argumenthood tests do not distinguish XPs of any grammatical function, namely obligatoriness, positionality, and case marking. So far then, head-marking seems to be the only indication of different grammatical functions.

3.1.3 Complicating head-marking

Head-marking runs into an issue when we consider putative non-DP arguments and the possibility of ditransitive verbs. Only DPs receive overt subject/primary object co-reference (i.e. non-DPs receive null 3SG co-reference).[7] Thus, for any non-DPs head-marking does not conclusively identify them as arguments (because their putative verbal co-reference is null). An example of a verb with an unclear argument structure is the verb *kɨ'ya'* 'bite' in (72). The verb *kɨ'ya'* 'bite' appears with a PP *bhai'ram* 'on the tail' and a DP *gu bho'mkox* '(the) squirrel'. Both the PP and DP express necessary participants of the verb *kɨ'ya'* 'bite'; the former expresses the location which is bitten and the latter expresses the affected participant (see for example Fillmore 1970).

(72) | *Bha* | ***tɨ-Ø-kɨi*** | *[bhai'-ram]$_{PP}$* | *[gu* | *bho'mkox]$_{DP}$* |
| --- | --- | --- | --- | --- |
| DIR | DUR-3SG.PO-bite.PFV | tail-on.body.part | DET | squirrel |

bhammi=mɨt	*ji-chɨtis*
DIR=3PL.SBJ-PFV	go-go.up.PFV

'He bit the tail of the squirrel and they went up there' (García Salido 2014: 195)
'The squirrel bit (it) on the tail

Moreover, the order of the PP and DP, where the PP appears first, makes it impossible for the DP *gu bho'mkox* to be embedded within the PP. The same order in (73a) simply expresses two juxtaposed phrases, in another context, The DP *gu bho'mkox* in (72) could be interpreted as the agent, instead of the patient. The flipped order of DP and PP in (73b) can express a constituent, where the speaker is talking about something on the/a squirrel's tail. Thus, it is unclear whether the object of *kɨ'ya'* in (72) is the DP or PP.

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[7]Evidence that non-DPs are co-referenced by the null 3SG markers and do not simply lack co-reference comes from ditransitives. A non-DP argument can compete with a DP argument for primary objecthood, in which case the verb will realize the Ø-3SG.PO prefix, rather than a prefix matching the ɸ-features of the DP.

(73) a. *bhai'ram gu bho'mkox*
          PP   DP

          'On the tail, (the) squirrel'

      b. *gu bho'mkox bhai'ram*
          DP   PP

          'On the squirrel('s) tail'

One problem of identifying the object of *kɨ'ya'* 'bite' in (72) is the 3SG ɸ-features of both the PP and DP. Pluralizing the DP, thus potentially triggering 3PL marking on the verb can disambiguate the object, as in (74).[8] This suggests that the DP in (72) is the object of *kɨ'ya'*.

(74) *Bha   tɨ-**ja**-kɨi   bhai'-ram   gu   bha∼bho'mkox*
      DIR   DUR-3PL.PO-bite.PFV   tail-on.body.part   DET   PL∼squirrel

      'It bit the squirrels on the tail'

However, without an overt DP, non-3SG object marking is not allowed. We see in (75a) that a pronominal patient does not trigger 3PL marking. Instead, the object marking in (75a) suggests that the PP is the object, the patient/possessor may only be referenced through head marking on the PP, shown in (75b). The same is true for a 2SG patient, shown in (76), the patient can only be co-referenced by possessor marking, as in (76a), not through object marking, shown in (76b).

(75) a. **Bha   tɨ-ja-kɨi   tona-ram*
          DIR   DUR-3PL.PO-bite.PFV   foot-on.body.part

          Intended: He bit them on the foot.

      b. *Bha   tɨ-Ø-kɨi   ja-tona-ram*
          DIR   DUR-3SG.PO-bite.PFV   3PL.POSS-foot-on.body.part

          'He bit their foot'

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[8]The noun within the PP does not need to be pluralized, compare *bhaa∼bhai'* 'tails'.

(76) a. *Bha* *tɨ-Ø-kɨi*   *jum-tona-ram*
            DIR   DUR-3SG.PO-bite.PFV 2SG.POSS-foot-on.body.part

           'He bit your foot'

  b. **Bha* *tɨ-jum-kɨi*   *tona-ram*
            DIR   DUR-3SG.PO-bite.PFV foot-on.body.part

           Intended: He bit you on the foot

Returning to the question of what kind of object *kɨ'ya'* 'bite' selects for, we have no clear answer. In (74) the verb must select for a DP object, while in (76) the same verb must select for a PP object. The possession constructions in (75b) and (76a) is not a possible analysis because the PP would require 3SG possession marking *bhai-'ñ-ram* 'its tail,' which we do not see. Because the object selection of *kɨ'ya'* 'bite' is unambiguous in (74) and (76), we are still left without an answer for whether the object prefix in (72) co-references the PP or DP.

    In addition to questions around head-marking co-reference, putative ditransitive verbs only receive object marking for a single object. For example, we see in (77a) that the translation contains a 2SG recipient, however, there is no 2SG object marking in the clause. The verb *makia'* only appears with a 3PL primary object prefix co-referencing the theme. However, the primary object prefix of *makia'* 'give' does not always co-reference the theme. Note in (77b) that the 3SG object marking on *makia'* 'give' co-references the recipient *gu Wendy* 'Wendy', rather than the plural theme *gu lalpis* '(the) pencils'.

(77) a. *Ja$_i$-maki-a'-iñ*
          3PL.PO-give-IRR-1SG.SBJ

          'I'm going to give them **to you**'

  b. *Bha=ñ*   *ui-'ñ*   *gu*   *la~lpis*   *na=ñ*
          PROX.MOV=1SG.PO bring.PL-APPL DET PL~pencil SUB=1SG.SBJ

           Ø-maki-a'   *gu*   *juana*
           3SG.PO-give-IRR DET Juana

          'Bring me the pencils that I am going to give to Juana'

Thus, the head-marking of a canonical ditransitive verb *makia'* 'give' suggests that the verb is transitive. Exclusive reliance on head-marking would force us to conclude that O'dam permits a maximum verbal valency of two (i.e. transitive). This is certainly tenable within existing

syntactic theories, for example through generalized rules that allow a three-participant verb to select for either object (e.g. Wechsler 2020: §4, Müller 2018: §7). However, previous work on O'dam does not propose a transitive upper limit on valency in the language. For example, the dictionary Willett & Willett (2015: 123) classifies *makia'* 'give' as *v.b.*: *verbo bitransitivo* 'ditransitive verb', along with other verbs like the applicativized *kuupdha* 'close (for another person)' (Willett & Willett 2015: 117). Yet, neither Willett & Willett (2015) nor the earlier reference grammar Willett (1991) provide any morphosyntactic means for distinguishing ditransitive verbs from standard transitive verbs. Likewise, García Salido (2021) distinguishes direct and indirect objects in her discussion of relativizability. However, as with Willett, these types of objects are distinguished by the semantic role a participant has, not its markedness.

3.1.4   What to do about head-marking?

In §3.1 we have seen why previous work on O'dam has relied almost entirely on head-marking to distinguish arguments from adjuncts. Head-marking provides a clean division between the dependents which are co-referenced on a given verb, from those that are not. The division made by head-marking easily aligns with traditional notions of argumenthood. For transitive and intransitive verbs, all of the entailed participants appear to be co-referenced, while comitatives and other non-entailed participants are not. Head-marking is obligatory for every verb, therefore, it is generally easily applied to any given verb in most contexts. We saw in §3.1.2 that other standard and easily applicable argumenthood tests make no distinction among verbal dependents of any kind. It is possible that a statistical analysis of O'dam clauses could find that overt XPs surrounding a verb tend to be arguments or that argument XPs tend to occur nearer to their verb than adjuncts. However, these looser definitions of obligatoriness and word order, respectively, would not allow us to easily distinguish the grammatical functions within a given clause.

We have seen in §3.1.3 that head-marking is not always so easily applied to a given verb. There seem to be verbs, like *kɨ'ya'* 'bite,' where head-marking is not necessarily informative of what their argument selection preferences are. Moreover, head-marking has a looser relationship with entailment once we take into account ditransitives. Based on head-

marking, a verb can only select for up to two arguments. We will see in Chapters 4 and 5 that there is quite strong evidence that O'dam has ditransitive verbs, and that *makia'* 'give' is one of them. However, currently our only argumenthood diagnostic is head-marking. A verbal dependent is an argument if it is co-referenced by a verbal subject or object affix. A dependent is an adjunct if it is not co-referenced by a verbal subject or object affix.

3.2 A second pass at probing argumenthood: the Pronominal Argument Hypothesis

That head-marking has been thus far the only reliable, if flawed, argument diagnostic raises some testable possibilities. First, if head-marking is the best diagnostic of verbal argumenthood, then perhaps the XP dependents are simply adjuncts and O'dam's grammatical functions are saturated within the verb. This is essentially the proposal of Jelinek's (1984) Pronominal Argument Hypothesis (PAH; see also Baker's 1991 Polysynthesis Parameter), which proposes that in certain languages, argumenthood is saturated within the V by pronouns. I use the PAH for its testable predictions about the differentiability of verbal dependents into grammatical functions. We will see that O'dam does have many properties of a Pronominal Argument Language, although not all.

Second, if head-marking is diagnostic of all argument functions in O'dam, then ditransitive verbs should not exist (because only one object can be co-referenced). Rather, three participant events should only be distinguished *semantically* from two participant events, not *syntactically*. In cases like *makia'* 'give' in (77), this predicts that only the co-referenced participant will act like an argument, while the other will act like an adjunct.[9] In Chapters 4-5 I will show that the answer to these question is yes and no: 1) ditransitive verbs do exist as a syntactic class in O'dam; 2) certain non-co-referenced objects do not behave like adjuncts (i.e. they are arguments). However, we will also see that certain types of partici-

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[9]Koenig & Michelson (2012) and Koenig & Michelson (2015) have explicitly argued that Oneida is one such language where verbal co-reference diagnoses syntactic argumenthood and that variance in verbal head-marking aligns with variance in the valency of the verb.

pants, namely instruments and locatives, cannot be co-referenced by verbal co-reference and systematically act as syntactic adjuncts.

Third, any other argumenthood tests should align with head-marking. This prediction will be shown to be false. Throughout this dissertation I will propose several other argumenthood tests that I find to reliably identify verbal valency. While each seems to identify a set of arguments, it is not clear that there is an implicational relationship amongst them, as we saw in Hebrew in §1.2.1, or even a correlation.

In the rest of this chapter I will discuss predictions of the Pronominal Argument Hypothesis (PAH) and the properties of O'dam that do and do not align with it. I adopt the tests and predictions of the PAH from Davis & Matthewson's (2009: §3) discussion of the PAH as it relates to Salish languages. The PAH states that in some languages argument saturation is done hyper-locally within the V by pronominal affixes. This hyper-local Case assignment means that associated lexical 'argument' XP are actually adjuncts. These two properties of Pronominal Argument Languages generate a range of predictions about their syntactic behavior and how they divvy up grammatical functions. The verbal word is a functionally complete clause in a Pronominal Argument Language, all obligatory elements of a clause must be satisfied within the verbal word. Lexical Integrity, therefore, applies to the verb and its arguments (Bresnan & Mchombo 1995, see also Bruening 2018: 23ff for a non-lexicalist formulation). A syntactic process cannot target a proper subpart of a word to the exclusion of the rest of the word. Finally, all XPs are hypothesized to have the same grammatical function. Thus, dependents should not show any argument-adjunct distinction.

In Table 3.2 I show the full list of properties that O'dam is predicted to have based on the PAH, adapted from Davis & Matthewson (2009). Their order in the table corresponds to the order in which I will discuss them in the rest of this section and in §3.2.1-§3.2.8. I will also discuss the specific rationale for each PAH property in Table 3.2. I will also discuss how I tested each property, following Davis & Matthewson (2009), and how I arrived at the judgement shown in Table 3.2. A ✓means that O'dam is consistent with the Pronominal Argument Hypothesis, while an X means that it is not consistent with the PAH. We will see in §3.2.3 that it is not possible to test whether O'dam shows superiority effect, hence the

N/A judgement. I have marked 'Verbal agreement is pronominal in nature' with a ? because in §3.2.8 I show that typical properties of pronominal interpretation do not seem to apply to O'dam head-markers.

Property	O'dam
Optional overt DPs	✓
No argument-adjunct word order distinctions	✓
No DP anaphors	✓
No DP-movement	✓
No infinitives	✓
No VP elipsis	✓
No pro-VPs	✓
No clitic doubling	✓
TAM invariant pronouns	✓
No superiority	N/A
No adjunct island effects	X
No Principle C effects	X
Disagreement freely allowed between pronoun and associated DP	✓
No VP coordination	✓
Verbal agreement is pronominal in nature	X/?
No weak crossover	✓
Full and obligatory agreement paradigms	X

Table 3.2: Predictions of Pronominal Argument Hypothesis (adapted from Davis & Matthewson 2009: 1114)

We have already seen evidence for how O'dam patterns with some of these properties. All XPs, except the verb, are optional in O'dam and there are no word order distinctions between putative arguments and adjuncts. Thus, O'dam has optional overt DPs and lacks word order distinctions based on grammatical function. These are both properties a Pronominal Argument Language should have, because its dependents are not differentiated by grammatical function. I have also never found evidence of DP anaphors in O'dam, which is consistent with all XPs being undifferentiated by grammatical function. The nature of argument saturation occurring inside the verbal word in Pronominal Argument Languages, means that a verbal word is not well-formed without everything it needs to be able to act as a standalone clause. As predicted by the PAH, O'dam lacks infinitives and well-formed verbs have both aspec-

tual marking[10] and subject and primary object marking. As I discussed above, Pronominal Argument Languages have argument saturation within the verbal word, therefore Lexical Integrity requires that no syntactic process target some proper subpart of the verbal word. Consistent with this I have found no putative pro-VPs, or evidence for DP movement. I do not make argumentation for these properties because I have found nothing in the language to even suggest at their presence. I will not be discussing whether O'dam has full agreement paradigms in this chapter, although it is clear that they are obligatory. This chapter will not allow us to move away from head-marking as the sole argumenthood diagnostic in O'dam; I will move away from that in Chapters 4 and 5. Nonetheless, those chapters will show that O'dam verbal agreement paradigms underpredict the valency of ditransitives (i.e. the agreement paradigms are not full). I have indicated that O'dam does not meet the PAH predictions about its agreement paradigms so that the table is complete.

3.2.1 The co-occurrence of Head-markers

If O'dam verbs are head-marked by pronominal clitics, then there should never be instances of multiple subject or object markers. Such doubling would amount to iterating an argument and involve a Condition B violation.[11] I have found no such occurrences in my own data, however, García Salido (2014: 50ff) notes instances of two subject markers co-occurring with a single verb. My consultants said that both examples are misglossed. The sentence in (78a) was originally glossed with two 1PL subject markers related to the verb *jumpa'* 'meet', one cliticized to the directional *mi* and the other as a verbal suffix. As I show in (78b), the first subject suffix is a 1PL primary object marker indicating a reciprocal event.

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[10]Simple present tense is indicated by the lack of overt aspectual markers on a verb. Verbs without aspectual marking, crucially, have a specific aspectual interpretation and, are thus finite.

[11]Note that clitic doubling in a Pronominal Argument Language could not be analyzed as clitic doubling is in languages with both pronoun and agreement morphology (Anagnostopoulou 2017; Suñer 1988). In Pronominal Argument Languages, the verbal clitics are always pronominal and never agreement markers (see Bresnan & Mchombo's 1987 criticism of the PAH). Therefore, two subject or object clitics would necessarily involve two instances of true pronouns, causing a Condition B violation.

(78) a. Original

Gio   *jai'*   *mas*   *mɨk-kam*   *dir*   *gu*   *ja'tkam*   *mi=**ch***
COORD   another   more   far-origin   DIR   DET   people   DIR=1PL.SBJ

*jumpa-da'-**ich***
meet-CONT-1PL.SBJ

'And the other people from far away, as for us, we met there' (García Salido 2014: 50)

b. Regloss

Gio   *jai'*   *mas*   *mɨk-kam*   *dir*   *gu*   *ja'tkam*   *mi=**(ji)ch***
COORD   another   more   far-origin   DIR   DET   people   DIR=1PL.PO

*jumpa-da'-**ich***
meet-CONT-1PL.SBJ

'And the other people from far away, as for us, we met **each other** there'

In the context immediately following the V-final particle *mi* in (78a), both the 1PL subject free form *(a)ch* and the 1PL primary object marker *(ji)ch-* are homophonous. The object prefixes with a $/hV_{high}/$ segment, which loses that segment immediately following a vowel and cliticizes to the preceding vowel (Willett 1991: §2.24). However, other combinations of subject and primary object, shown in (79), support my regloss in (78b). We see that if the subject is 3PL *-am* the previously glossed subject marker must be either a non-first person middle marker *jum-*, as in (79a), or the 3PL primary object marker, as in (79b). An additional preverbal subject marker *am* is not acceptable, as in (79c).

(79) a. *Gio*   *jai'*   *mas*   *mɨk-kam*   *dɨr*   *gu*   *ja'tkam*   *mi=**(ju)m***
COORD   another   more   far-origin   DIR   DET   people   DIR=MID

jumpada-'-am
meet-CONT-1PL.SBJ

'And the other people from far away, as for them, they met each other there'

b. *Gio*   *jai'*   *mas*   *mɨk-kam*   *dɨr*   *gu*   *ja'tkam*   *mi*
COORD   another   more   far-origin   DIR   DET   people   DIR

***ja-**jumpada-'-am*
3PL.PO-meet-CONT-1PL.SBJ

'And the other people from far away, as for them$_i$, they$_i$ met them there$_j$'

c.   *Gio   jai'   mas   mɨk-kam   dɨr   gu   ja'tkam   mi   **am**
     COORD   another   more   far-origin   DIR   DET   people   DIR   3PL.SBJ

         jumpada-'-am
         meet-CONT-1PL.SBJ

    'And the other people from far away, as for them, they met them there'

     Thus, the putative doubled subject in (78a), is in fact a reciprocal construction, with a 1PL primary object marker cliticized to the V-final directional *mi*. In the second putative double subject example, shown in (80), the original glossing shows a perfective marked subject encliticized to a preverbal subject. Here the morphophonology suggests that a single subject marker, as shown in (80b), is the correct glossing.

(80)   a.   Original
         *Jax=**ap***   ***pi-ch***   *dhuk*   *kunat*
         how=2SG.SBJ   2SG.SBJ-PFV   where   marry.PFV

         'How did you get married?' (García Salido 2014: 121)

      b.   Re-gloss
         *Jax=**api-ch***   *dhuk*   *kunat*
         how=2SG.SBJ-PFV   where   marry.PFV

         'How did you get married?' (García Salido 2014: 121)

The perfective marked subjects, which I will discuss further in §3.2.2, appear with an initial [a][12] following consonants, including [p], as in (81a). The initial [a] is only absent for perfective marked subjects following vowels, as in (81b).

(81)   a.   *Jup-api-ch*
         take.out.from.inside-2SG.SBJ-PFV

         'You took it out (from inside)'

      b.   *Bulhkai-p̃i-ch*
         shrink-2SG.SBJ-PFV

         'You shortened it (clothing)'

---

[12]Based on Stubbs's (2011) and Hill's (2020) work on Uto-Aztecan comparative vocabulary, it is very likely that the initial [a] of the preverbal subjects is part of the underlying form. I have elected here to treat it as an epenthetic vowel for this discussion, but nothing here hinges on its presence or absence in the underlying form of the subject marker.

Considering the initial subject in the original gloss in (80a) is C-final, we would expect the initial [a] of the second subject to surface *jax=ap-apich*. Thus, the sentence in (80a) contains unexpected morphophonology for the subject and would otherwise be the only attested example of putative double subject marking. I have shown that both of the proposed instances of double subject marking are not doubled subjects. My consultants consistently rejected doubled subjects in elicitation so I must conclude that O'dam does not allow double subject marking or clitic doubling. I now turn to the question of TAM invariance on O'dam pronouns.

3.2.2 TAM invariant pronouns: the question of $=t$

The Pronominal Argument Hypothesis says that head-marking in Pronominal Argument Languages involves incorporated pronouns, not agreement affixes. Work like Evans (1999), Coppock & Wechsler (2012), and Kramer (2014) note the typological tendency that incorporated pronouns (also called pronominal clitics) overwhelmingly tend to be TAM-invariant. Preminger (2009) and Nevins (2011) argue that this is due to the categorial syntactic difference between pronominal clitics and agreement markers, the former of which are category D, which makes them insensitive to TAM features. Thus, the PAH predicts that the subject-primary object markers on O'dam verbs should not be TAM variant.

All descriptive work on O'dam agrees that the primary object prefixes are TAM invariant. However, previous descriptive work on O'dam disagrees on whether the subject markers vary based on perfectiveness. In Table 3.3 we see a subject marker can be suffixed with *-t*. Some previous work analyzed the perfective-marked subjects as a third type of subject marker, which would make them vary according to aspectual marking, contra the PAH. This analysis is largely based on the seemingly unexpected phonological shape of the perfective-marked subjects. I will argue against this view, instead proposing that the perfective *-t* is a suffix, as it is indicated in Table 3.3. Using data from other Tepiman languages, as well as Proto-Tepiman, I will show that the phonological shape of the perfective marked subjects is easily explained through regular morphophonological processes. Because the perfective *-t* is only an aspectual marker, both the subject and object markers in O'dam

are TAM invariant, consistent with the predictions of the PAH.

	Free form subject	Subject suffix	Subject plus perfective clitic
1SG	(a)ñ	-'iñ, -(a)ñ	=(a)ñi-ch
2SG	(a)p	-'ap, -(a)p	=(a)pi-ch
3SG	Ø	-Ø	=Ø-t
1PL	(a)ch	-'ich. -(a)ch	=(a)chi-ch
2PL	(a)pim	-(')(a)pim	=(a)pimɨ-t
3PL	am	-(')(a)m	=(a)mɨ-t

Table 3.3: Perfective subject marking

Previous work on O'dam offers two different proposal on the morphosyntax of the subject markers; see illustrative examples from Willett (1991), in (82), and García Salido (2014), in (83). The relevant perfective clitic and subject marker is shown in bold in each example. We see in (82) that Willett (1991) analyzes the subject as TAM invariant, with a -ɨt/-it perfective clitic.[13] In contrast, we see in (83) that García Salido (2014) analyzes the perfective subject as a single unanalyzable form.

(82)   Willett's (1991) analysis
   *Entonces   na-**m-ɨt**   gu'   ba-mat   jia,   na   gu'   dhi'*
   then   SUB-3PL.SBJ-PFV   but   CMP-know   RET   SUB but   DEM.PROX

       na=m   mu-buan-da-'   gu   kurat   gio   gu
       SUB=3PL.SBJ   DIR   go^out-CONT-IRR   DET   woodpecker   and

       kio'.
       DET

   'So the man and the dog found out (that the earth was dying), because the birds were going in and out continuously (Willett 1991: 273)

(83)   *Bhai'=**mɨt**   sap   pɨx   ji   chɨɨ*
   DIR=3PL.SBJ.PFV   REP.UI   MIR   FOC   see.PFV

   'Supposedly, they saw him there' (García Salido 2014: 128)

I will agree with Willett (1991) that the subject markers are TAM invariant. However, I will argue that the perfective clitic is only =t with no vocalic element. Instead, I will argue

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[13]For the purposes of this example, I follow Willett (1991) in using <-> to indicate the perfective clitic is a suffix, however, see Willett (1991: §2.83) for his discussion of their clitic properties, based off of Willett's (1981: 43) phonological analysis.

that the vowel is simply part of the subject marker that does not surface when the subject marker lacks a following consonant within the same phonological word.

First, in Table 3.3, and again in Table 3.4 we see the perfective clitic alternates between between [ch] and [t]. All instances of [ch] follow [i], while [t] follows [ɨ] and nothing. Thus, [t] appears to be the elsewhere case. As additional evidence for [t] as the elsewhere case, coronals regularly palatalize immediately adjacent to /i/ (Willett 1985). Thus, the realization of [ch] is entirely predictable based on the realization of /i/ immediately preceding it. However, here Willett (1991) must posit that the [i]∼[ɨ] is essentially allomorphic: there are two perfective clitics, one with initial /i/ and the other with initial /ɨ/, which are triggered by particular subjects.[14] The alternation between [ɨ] and [i] becomes clearly phonemic, as opposed to allomorphic, if we look at the Proto-Tepiman subject markers in Table 3.4.[15] The apparent alternation of /i/ and /ɨ/ in the perfective subject forms aligns with the Proto-Tepiman forms that end in the fossilized form of the Proto Uto-Aztecan plural suffix -mɨ (Stubbs 2011: 416).[16] In the 3PL subject form, O'dam lost the use of *hɨga as a 3SG marker,[17] thus =t form of the 3SG is expected if the /t/ morpheme at one point suffixed onto a null element. In other words, the perfective clitic appears to be simply /=t/ and the vowel alternations are simply due to the underlying forms of the subjects.

The evidence that the /=t/ in the perfective subject forms is, in fact, a separate morpheme, rather than a variant subject form comes from the Tepiman perfective auxiliary *t(a). In Névome, a Piman language, this auxiliary is used in the template in (84) adapted from Shaul (1982: 68). Two textual examples are shown in (85), where the perfective -t(a) immediately follows the subject, which immediately follows a second position element that Shaul (1982) called the 'initiator.' Zepeda (2016: 61) finds the same structure in the Piman

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[14]Willett (1991) would actually need to propose three allomorphs of the perfective clitic given that the 3SG perfective clitic does not have an initial vowel, but I will explain this away too.

[15]It is not entirely clear to me why *aanɨʔɨ became añi, however this reconstruction is found in both of the reliable comparative Uto-Aztecan vocabularies, Stubbs (2011) and Hill (2020). The /i/ as the final vowel of the O'dam subject is highly probable given the [ñ] in the 1SG form in O'dam. With the exception of few, possibly frozen, forms, palatal consonants in O'dam only surface as allophones of alveolars. Thus, the [ñ] is difficult to explain unless there is a final /i/.

[16]The -mɨ suffix here is a fossilized form of the Proto Uto-Aztecan plural suffix **-ima, which Tepiman languages have only maintained in their 2nd and 3rd person pronouns.

[17]The Audam language, which is a close relative of O'dam, seems to maintain *hɨga as jidhai /hiɖʐai/.

	Proto-Tepiman subjects	O'dam perfective subjects
1SG	*aanɨʔɨ	(a)ñi=ch
2SG	*aapiʔi	(a)pi=ch
3SG	—	=t
1PL	* aatɨʔi	(a)chi=ch
2PL	*aapi-mɨ	(a)pimɨ=t
3PL	*hɨga-mɨ	mɨ=t

Table 3.4: Proto-Tepiman subject markers compared with O'dam perfective subjects. reconstructions are based on Stubbs (2011) and Hill (2020)

language Tohono O'odham. The clitic in (84) is the subject clitic, which indicates that in other Tepiman languages the perfective *t(a) attaches to the subject, rather than the verb.

(84)   (initiator) = clitic + t(a)

(85)   a.   **v'-an'-t'-igui**   *ohana-cada*   **co-'p'-ta**   *divia*
            ald-1S-P-E   write-PST   and-2S-P   arrive

            'already I had written when you arrived' (Shaul 1982: 69)

       b.   *coi'-t'-x'-igui*   *divia*
            still not-P-QUO-E   arrived

            'it is said that he still did not arrive' (Shaul 1982: 69)

Initiators, or auxiliaries as they are called in Tohono O'odham, are largely lost from O'dam except in subordinate clauses, where the "initiator" is the subordinator. Notice in (86) that the subject cliticizes to the subordinator regardless of whether the subject is perfective or not, as in (86a) and (86b) respectively. We also see in (87) that the perfective subject cliticizes to the initial element of the clause, which is analogous to what Shaul (1982) calls the initiator in Nevome.

(86)   a.   *Mi*   *da-ka-t*   *gu*   *ubii*   **na=mɨ-t**   *mi*   *chi'i*   *ma-ka-k*
            DIR   sit-ST-   DET   woman   SUB=3PL.SBJ-PFV   DIR   INT.NR   give-ST-PNCT

            gu   *jun*
            DET   corn

            'There is the woman to whom they had given the corn' (García Salido 2014: 159)

b. *Taata-'n*   *gio*   *gu*   *di'i'n*   *gio*   **na=m**
father-3SG.POSS   COORD   DET   mother.3SG.POSS   COORD   SUB=3PL.SBJ

     ji'k-ka-'   *mi'*   *pai'*   *no'=m*   *oi'dha'*
     QUANT-ST-IRR   DIR   where   COND=3PL.SBJ   live

'His father and his mother, who were there where they live' (García Salido 2014: 156)

(87)   *Bha-ti-kɨi*   *bhai'-ram*   *gu*   *bho'mkox*   **[bhammi=mɨ-t**
     DIR-DUR-bite.PFV   tail-on.body.part   DET   squirrel   DIST.HIGHER=3PL.SBJ-PFV

     ji-chɨtɨs]
     go-go.up.PFV

'He bit the tail of the squirrel and they went up there'

Thus, there is historical precedent that at least in O'dam's past, the /t/ of the perfective subject forms were formed through a regular syntactic process (i.e. they are TAM invariant).

My proposal of the subject forms as TAM invariant and the perfective =*t* clitic as lacking a vocalic element, also predicts the correct phonological forms for the non-perfective marked subjects. The final vowels of the subject forms are dropped because final-vowel deletion is a regular process in O'dam (Willett 1981). I show a phonological derivation of the 1SG and 3PL subject markers in (88) and (89), respectively. Stress systematically falls on the heavier of the first two syllables of the root (Willett 1982). In this case neither syllable in the underlying form has a coda, therefore they are the same weight and stress falls on the first syllable. Vowel deletion is a more complicated process in O'dam. In short, final vowels in O'dam are deleted unless a) they bear primary stress; or b) their deletion would cause an illicit coda in the word (see Willett 1982, Kager 1997: §3, and Gouskova 2003: 165ff for fuller explanations of vowel deletion in O'dam).

(88)   a.   /ani/
        ↓
        añi Palatalization of coronals next to /i/
        ↓
        ˈañi Stress placement
        ↓
        [ˈañ] Final vowel deletion

    b.   /ani-t/

$\downarrow$

añi-ch Palatalization of coronals next to /i/

$\downarrow$

añˈi-ch Stress placement

$\downarrow$

[añˈich] Final vowel deletion

(89) a. /amɨ/ $\downarrow$
          ˈamɨ Stress placement

          $\downarrow$

          [ˈam] Final vowel deletion

      b. /amɨ-t/

          $\downarrow$

          [amˈɨ-t] Stress placement

          $\downarrow$

          [amˈɨt] Final vowel deletion

Using historical and comparative data, it seems that Willett (1991) was right that the subject markers do not vary based on perfectiveness, or any other TAM features. However, his proposal was wrong in assuming that the /i/∼/ɨ/ vowel was part of the perfective clitic, rather than the subject. I next turn to whether O'dam shows superiority effects.

3.2.3 Superiority

The PAH predicts that XP dependents are adjuncts, because argumenthood is exclusively saturated within the verbal word. Therefore, XPs in O'dam should lack any word order asymmetries, because adjuncts are classically reorderable. One possible case of this is superiority effects, which relate to cases of multiple *wh*-questions. In certain languages only one *wh*-word can be fronted, while all others remain in situ and the choice of which element gets fronted is not free. The asymmetry in the examples in (90) and (91) is attributed to a structural asymmetry between the subject and object, which disallows the object from raising over the subject (Chomsky 1973; also Bošković 2002). However, for Pronominal Argument Languages the various XPs are not hierarchically structured, nor does any dependent ever sit in a putative 'subject' or 'object' position. Thus, the PAH predicts that O'dam should lack superiority effects because DP fronting should not be sensitive to differences in grammatical

function.

(90)   a.   Who did what?

        b.   Who went where?

        c.   What happened to whom?

        d.   What did you give to whom?

(91)   a.   *What did who do?

        b.   *Where did who go?

        c.   *To whom did what happen?

        d.   *To whom did you give what? / *Who did you give what to?
             (Falk 2012: 1)

Note that the lack of superiority effects is not only a feature of pronominal argument languages, Spanish famously lacks superiority effects. As shown in the examples in (92) from Chomsky (1981: 255) we see that Spanish allows either the subject or object *wh*-word to front, even though Spanish subject and object nominals are generally assumed to appear at structurally different levels (e.g. Toribio 1992).

(92)   a.   *Juan   sabe   qué   dijo   quién.*
             Juan   knows   what   said   who

             'Juan knows who said what'
             OBJ ≺ SUBJ

        b.   *Juan   sabe   quién   dijo   qué.*
             Juan   knows   who   said   what

             SUBJ ≺ OBJ

Likewise, some languages like Bulgarian and Japanese permit multiple *wh*-fronting (Rudin 1988, Richards 1997, 2001, Grewendorf 2001, Bošković 2002). However, I find that superiority effects are simply not applicable to O'dam syntax because double interrogatives are not monoclausal.

García Salido (2014: 135-6) proposes that double interrogatives are expressed by one interrogative appearing in the preverbal position and one in situ in the postverbal position.

García Salido (2014: 136) also finds that the fronted *wh*-word is always related to the subject, which is consistent with superiority effects. We can see this in (93a) and (93b) where *jaroo* 'who', associated with the animate subject, is preposed, while the object *wh*-words appear postverbally.

(93) Original

a. *Jaroo*   *ba'*   *bha-tɨ-gɨbɨch*   ***pa***
    who   SEQ   DIR-DUR-hit   where

    'So who hit where?'
    Intended Reading: So who hit who?

b. *Jaroo*   *ya'*   *tu-ai-chdh-im*   *tu'*
    who   DIR   DUR-arrive-APPL-PROG   what

    'Who is coming with what?'
    (García Salido 2014: 136)

However, my own investigation finds that the sentences in (93a) and (93b) are misglossed. We see in (94) that the [pa] segment García Salido (2014: 136) analyzes as the indefinite pronoun/interrogative *pa* 'somewhere, where', I instead analyze as a phonological segment of the verb root.

(94) Reglossed (93a)
      Jaroo   *ba'*   *bha-tɨ-**gɨbɨchpa***
      who   SEQ   DIR-DUR-hit.PFV

      'So who hit (who)?'

García Salido's (2014) analysis stems from analyzing the non-trucated verb 'hit' as *gɨ'bia'*, whereas the appearance of the [ich] segment signals the non-truncated verb is *gɨbichpaga'*. The former is generally used for hitting something with an instrument (e.g. a stick) versus the latter is more often used for punching. The latter verb has a perfective form *gɨbichpa* where the final /ga/ syllable of the base form is deleted following normal truncation patterns in O'dam (Willett 1981).[18] meaning that (94) only includes one interrogative pronoun, although my consultants say that the intended double interrogative meaning is acceptable.

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[18] The /'/ segment of the citation form of *gɨbichpaga'* 'hit' is the irrealis suffix *-(a)'*. It is not present in perfective aspect and, therefore, does not affect verbal truncation.

In the second instance, García Salido (2014: 136) analyzes the sentence in (93b) as a double interrogative with two interrogative pronouns: *jaroo'* 'who' and *tu'* 'what, something. I was unable to replicate García Salido's (2014) original meaning, wherein the speaker is asking both who is coming and what each person is bringing. Instead, my consultants agreed that *tu'* in (93b) is better understood as an indefinite pronoun 'something'. As shown in (95), the sentence is best interpreted as a single interrogative, where the speaker is asking who is bringing something (to her house).

(95)   Reglossed (93b)
       Jaroo   ya'   tu-ai-chdh-im   tu'
       who   DIR   DUR-arrive-APPL-PROG   something

       'Who is coming with something?'

I have not found any double interrogatives outside of elicitation, so it is difficult to say how one might be uttered more naturally. However, in elicitation contexts, my consultants consistently offered a coordinated construction, where one interrogative pronoun appears in preverbal postion while the other is coordinated, as in (96).

(96)   a.   SUBJ ≺ OBJ
            *Jaroo   ya'   tu-ai-chdh-im   **gio**   tu'*
            who   DIR   DUR-arrive-APPL-PROG   COORD   what

            'Who is coming with what? (lit. Who is coming (with something) and what (are they coming with)'

       b.   OBJ ≺ SUBJ
            *Tu'   ya'   tu-ai-chdh-im   **gio**   jaroo*
            what   DIR   DUR-arrive-APPL-PROG   COORD   who

            'What is being brought by who? (lit. what is (someone) bringing and who (is coming with it)'

In this coordinating construction, I do not find any superiority effects; the subject can appear preverbally, as in (96a), or the object can (96b). Note that in both cases the head-marking remains in situ and the only change is where each *wh*-word appears. For double interrogatives, my consultants consistently required one *wh*-word, typically the second one, to follow the coordinator *gio*, as in (97) and (98). We see in these examples that either interrogative, referring to the subject or object, can be coordinated.

(97) *Jax chu'm   ja-xik   gu   tu~tua   gio   jaroo*
      which   3PL.PO-shake   DET   PL~tree   COORD   who

      'Which trees were shaken and by who?'

(98) *Jaroo   ja-xik   gu   tu~tua   gio   jax chu'm*
      who   3PL.PO-shake   DET   PL~tree   COORD   which

      'Who shakes which trees?'

This coordinating structure also appears to hold for control constructions. In (99) we see a double interrogative spread over two clauses in a control relationship, where either order of interrogative pronoun is possible. My consultants preferred the first interrogative pronoun appearing in the preverbal position of the control verb *chia'* 'cause, send',[19] the second interrogative pronoun must be coordinated following the controlled clause.

(99) a. ***Jaroo***   *pu=m*   *chia*   *na=p*   *tu-ja-makia-'*   *gu*
          who   SENS=2SG.PO   send   SUB=2SG.SBJ   DUR-3PL-give-IRR   DET

          sa~soi   *gio*   ***jax chu'm***
          PL~animal   COORD   which

          'Who made you feed which animals?'

      b. ***Jax chu'm***   *pu=m*   *chia*   *na=p*   *tu-ja-makia-'*   *gu*
          which   SENS=2SG.PO   send   SUB=2SG.SBJ   DUR-3PL-give-IRR   DET

          sa~soi   *gio*   ***jaroo***
          PL~animal   COORD   who

          'Who made you feed which animals?'

As we see in (100), the two interrogative pronouns cannot both be in the preverbal position on the intended double interrogative reading. In (100a) the coordinated construction is best interpreted as coordination of the pronouns, 'who and what is coming (with it/something)'. Neither construction was judged acceptable by my consultants, although the non-coordinated case of (100b) was judged as slightly better.

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[19]My consultants also accepted the initial interrogative appearing in the preverbal position of the controlled clause, or in the postverbal position of either clause. However, they said that the matrix preverbal position in (99) was far and away the most preferable.

(100) a. *Tu'/Jaroo' **gio** jaroo/tu' ya' tu-ai-chdh-im
           what/who   COORD who/what   DIR DUR-arrive-APPL-PROG

       Intended: Who is coming with what?

   b. ?Tu'/Jaroo' jaroo/tu' ya' tu-ai-chdh-im
       what/who   who/what   DIR DUR-arrive-APPL-PROG

       Intended: Who is coming with what?

The reason that (100b) is likely judged as simply odd is because *wh*-fronting in O'dam appears to be a topicality effect rather than obligatory syntactic movement. To begin with, O'dam indefinite pronouns are generally ambiguous with *wh*-words.[20] Notice in (101a) that *tu'* acts as an interrogative meaning 'what?', while in (101b) the same particle is realized inside of a DP and expresses 'whatever' and in (101c) *tu'* appears on its own in the preverbal position and acts as an indefinite pronoun '(some)thing'

(101) a. **Tu'**=m   duu   na=p   ba'   obia'k-im
           what=2SG.PO do.PFV SUB=2SG.SBJ SEQ limp-PROG

       'What happened to you that you are limping?' (Willett & Willett 2015: 175)

   b. Bhai'=p   xi-chu-tañi-a'   **gu**   **tu'**   na=p
       good=2SG.SBJ IMP-DUR-request-IRR DET something SUB=2SG.SBJ
           jix=ñaa
           COP=like.to.eat

       'Order whatever you'd like to eat!' (Willett & Willett 2015: 175)

   c. A   **tu'**   gi=p   jir=bakax   jir=bhich   ji   dhi'
       INTERJ something COORD=IT   COP=meat   COP=shit   FOC DEM.PROX
           ja'p kaich e   gu=r   bha-ja-gaa'   paa=mɨ-t
           DIR   say   INTERJ DET=COP   DIR-3PL.PO-search   where=3PL.SBJPFV
           gi   ja'k bhiɨ
           COORD DIR   go.PFV

       'This [thing] is not meat, this is bullshit, look for them where they have gone'
       (García Salido 2014: 190)

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[20]Enfield (2007) finds this as well for Lao, and argues that such pronouns should be considered indefinite pronouns in all cases. Instead, the interrogative force follows pragmatically when the speaker is inquiring about the contents of the indefinite set, see also Enfield (2010).

We additionally see that both the interrogative and indefinite use of *tu'* can appear in the preverbal position, shown in (101a) and (101c), respectively. Likewise, in (102) the interrogative *jarooga'n* 'whose' can appear postverbally, where the change in meaning is that the verb sounds emphasized, rather than the interrogative.

(102) *Jiñ-kɨi*   *ma'n* *gu* *gagoox* *jaroo-ga'n*
   1SG.PO-bite.PFV one DET dog who-POSSD

   'Whose dog bit me?'

While most of the O'dam *wh*-words are homophonous with the matching indefinite pronoun, there is one exception: *jaroo* 'who' versus *jaroi'* 'someone'. The former is unambiguously an interrogative, while the latter is unambiguously an indefinite pronoun, as shown in (103).

(103) a. ***Jaroo*** *bha-ñ-gɨ'*
     who DIR-1SG.PO-hit

     'Who hit me?'

   b. ***Jaroi'*** *bha-ñ-gɨ'*
     someone DIR-1SG.PO-hit

     'Someone hit me'

Comparing the respectively syonymous sentences in (104) versus (105), we see that *jaroo* and *jaroi'* are not distinguished positionally. Instead the respective (a) and (b) sentences differ on the topicality of *jaroo/jaroi'*. In the (b) sentences, the speaker is emphasizing the time, over the subject. Moreover, my speakers report that (104b) is acceptable in a non-mirroring context, suggesting that it is not simply a case of a *wh*-word appearing in situ.

(104) 'Who is coming tonight?'

   a. *Jaroo* *bhajim* *xib* *tukaa'*
     who come now night

   b. *Xib* *tukaa'* *bhajim* *jaroo*
     now night come who

(105)   'Someone.SG is coming tonight'

   a.   *Jaroi*   *bhajim* *xib* *tukaa'*
       someone come   now   night

   b.   *Xib* *tukaa'* *bhajim* *jaroi*
       now night   come   someone

We likewise see in (106) that both the preverbal and postverbal positions are compatible with either an interrogative or indefinite interpretation of *tu'*.

(106)   a.   *Tu'-kɨ'n=api-ch*   *ja-gɨ*   *gui'-am*
        what-with=2SG.SBJ-PFV   3PL.PO-hit   DEM.DIST=3PL.SBJ

        'What did you hit them with?' OR 'You hit them with something'

   b.   *Ja-gɨ'=api-ch*   *gui'-am*   *tu'-kɨ'n*
        3PL.PO-hit=2SG.SBJ-PFV   DEM.DIST-3PL.SBJ   what-with

        'What did you hit them with?' OR 'You hit them with something'

Therefore, *wh*-words do not need to be fronted in O'dam, contra García Salido (2014: 135-6). Instead their common appearance in the preverbal position is explained by the tendency for *wh*-words to be foci (van Valin Jr 1985, Esteban 2012).

We can understand the behavior of *wh*-words in this section in two ways as it relates to the argument/adjunct behavior of verbal dependents. On the one hand, O'dam shows no superiority effects whatsoever, which is consistent with all verbal dependents occurring in A'-positions. On the other hand, *wh*-fronting appears to be a topicality effect, rather than a *wh*-raising effect, so that superiority is simply unapplicable to O'dam. While previous work proposed that O'dam does show superiority effects I was not able to replicate those because my consultants entirely rejected the possibility of two interrogative words in the same clause. Moreover, the only examples of a double interrogative in O'dam is an elicited example, which I was not able to replicate. I believe this suggests that O'dam simply does not have structures that relate to superiority effects, although a more conservative interpretation of my evidence might say that the question of superiority effects in O'dam is still open.

3.2.4 Adjunct island effects

Extraction is a syntactic process that has been analyzed as being sensitive to the grammatical function of the extraction site. Adjunct dependents are typically analyzed as islands, which a phrase cannot be extracted from (Ross 1967). Additionally, extraction is more generally dispreferred from XPs that are not internal arguments (Haegeman et al. 2014). The Pronominal Argument Hypothesis predicts that all XPs in a clause are equally adjunctive, meaning they are all adjuncts and are generated V(P) externally. Therefore, in Pronominal Argument Languages all extracted phrases are ostensibly extracted through extraction barriers (i.e. adjuncts and non-internal arguments). The extraction process, then, cannot be of a type that is sensitive to adjunct islands, because then extraction would be impossible. For O'dam, this means that there should be no extractability differences out of verbal dependents of any kind. Contra the PAH, I find that O'dam does show adjunct island effects.

For this test, I use extraction from CPs with different grammatical relationships to their matrix clause. Specifically, Everdell & Melchin (2021) and Everdell et al. (2021) show that CP complements of control verbs have a much closer relationship to their verb than non-controlled CPs (see also García Salido 2014: §6.2). In (107a) we see a control construction where the analytical causative verb *chia'* 'send' takes the controlled clause as its complement. Extracting the object of the controlled clause is permitted, as in (107b), whereby the interrogative pronoun *tu'* 'what?' may appear in the preverbal position of *chia'*.

(107)   a.   *Jum-chia-iñ*   *na=p*   *gu*   *ku'a'*   *jumpada-'*
             2SG.PO-send-1SG.SBJ   SUB=2SG.SBJ   DET   firewood   collect-IRR

             'I told you to collect firewood'

        b.   ***Tu'***   *jum-chia-iñ*   *na=p*   *jumpada-'*
             what   2SG.PO-send-1SG.SBJ   SUB=2SG.SBJ   collect-IRR

             'What did I tell you to collect?'

In contrast, such extraction is not permitted if the subordinate clause is not a complement of the matrix clause. In (108a), the subordinate clause expresses a subsequent event, and expectedly is not a complement of the matrix clause. In (108b) we see that the object of the subordinate clause, *jax chu'm (pelicula)* 'which movie' cannot be extracted to the preverbal

position of the matrix clause.

(108) a. *[Gu juan gio gu pegro bɨɨpɨ' xi-chu-juga-k=amɨ-t*
DET juan COORD DET pedro before IMP-DUR-eat-PFV=3PL.SBJ-PFV

[na ba' gu pegro ba-tu-jokui-dha']]
SUB SEQ DET pedro CMP-DUR-watch-APPL

'Juan and Pedro ate before Pedro watched (the movie)'

b. ***Jax chu'm (pelicula)** bɨɨpɨ' xi-chu-juga-k=amɨ-t gu juan*
which movie before IMP-DUR-eat-PFV=3PL.SBJ-PFV DET Juan

gio gu pedro na ba' gu pedro ba-tu-jojui-dha'
COORD DET Pedro SUB SEQ DET Pedro CMP-DUR-watch-APPL

Intended: Which movie did Pedro see before Juan and Pedro ate?

I find a split in terms of extraction among verbs of speaking. We see that the verb *a'gidha'* 'speak to (someone)' in (109a) permits extraction from a subordinate clause expressing the theme (what was said). However, the verb *tɨtda'* 'tell' in (109b) does not permit such extraction.

(109) a. ***Tu'** jum-agi-'ñ gu maria na=ñi-ch ja-tɨɨ*
what 2SG.PO-speak-APPL DET Maria SUB=1SG.SBJ-PFV 3PL.PO-see.PFV

'What.PL did Maria tell you that I saw?'

b. ****Tu'** pu=m tɨtda na=p tu-ja-makia-'*
what SENS=2SG.PO say.PFV SUB=2SG.SBJ DUR-3PL.PO-give-IRR

Intended: What (animal) did she tell you to feed?

Instead, the preferred verb for the intended reading in (109b) is *a'gi(-dha')* 'speak to (someone)',[21] as shown in (110a). Notice in (110b) that there are no pied-piping effects and the *wh*-word alone can extract, leaving its co-referring phrase, in bold, in situ.

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[21]As indicated in the glossing, the *-dha* element of *a'gidha'* is an applicative, which licenses the hearer, see §5.2. The difference in this case between *a'ga'* 'speak' and *a'gi-dha'* 'speak to (someone)' is based on the licensing of hearer. In the applied form the hearer is licensed as a syntactic argument, whereas in the base form it is an implicit object. The applicative makes no difference in terms of extraction.

(110) a. *Tu'*   *ap=a*   *pɨn*   *jiñ-**a'gɨ-'ñ***   *na=ñ*   *tu-ja-makia-'*
           what   2SG.SBJ=Q   PART   1SG.PO-speak-APPL   SUB1SG   DUR-3PL.PO-give-IRR

       'What.PL (animal) did you tell me to feed?'

   b. ***Jax chu'm***   *ap=a*   *pɨn*   *jiñ-a'gɨ-'ñ*   *na=ñ*
       which   2SG.SBJ=Q   PART   1SG.PO-speak-APPL   SUB=1SG.SBJ

           tu-ja-makia-'   ***gu***   ***sa∼soi***
           DUR-3PL.PO-give-IRR   DET   PL∼domesticated.animal

       'Which animals did you tell me to feed?'

For the intransitive verb *nɨɨra'* 'wait' the object of a clause linked by the conditional subordinator *no'* cannot be extracted to the preverbal position, as we see in (111). However, apparent topical fronting does not show an A vs A' distinction, compare (112a) and (112b), where we see that the object of the subordinate clause *gu tua* '(the) tree' can appear in front of the matrix clause.

(111)   **Tu'*   *tɨ-nɨɨra-'-iñ*   *no'=pi-ch*   *om*
        what   DUR-wait-IRR-1SG.SBJ   COND=2SG.SBJ-PFV   break.SG.PFV

        'What did I hope you chopped down?'

(112) a. *Tɨ-nɨɨra-'-iñ*   *no'=pi-ch*   *om*   *gu*   *tua*   *na*
           DUR-wait-IRR-1SG.SBJ   COND=2SG.SBJ-PFV   break.SG.PFV   DET   tree   SUB

           tɨɨ=p   *gɨxi-a'*   *jiñ-ba'ak-kam*
           INT.NR=IT   fall-IRR   1SG.POSS-house-origin

       'I hope you chopped down the tree that almost fell on my house'

   b. *Gu*   *tua*   *tɨ-nɨɨra-'-iñ*   *no'=pi-ch*   *om*   *na*
       DET   tree   DUR-wait-IRR-1SG.SBJ   COND=2SG.SBJ-PFV   break.SG.PFV   SUB

           tɨɨ=p   *gɨxi-a'*   *jiñ-ba'ak-kam*
           INT.NR=IT   fall-IRR   1SG.POSS-house-origin

       'I hope you chopped down the tree that almost fell on my house'

In (112b), *gu tua* '(the) tree' is interpreted somewhat vocatively (i.e. the tree, I hope you chopped it down). This suggests that *gu tua* '(the) tree' is not appearing in the matrix clause, but rather immediately preceding the matrix clause (i.e. extra clausally). Extraction does seem to distinguish grammatical functions. Controlled clauses do not act as islands, while

subordinate clauses without a clear complement meaning do act as islands. This suggests that O'dam does show adjunct island effects.

3.2.5 Principle C

The adjunct status of XP dependents in Pronominal Argument Languages predicts that all pronominal binding should be done through verbal head-marking. XP dependents that are R expressions should never restrict covaluation in a clause (Reinhart 2006; Safir 2004a,b), because they are not c-commanded by the verbal head-markers (Davis 2009). Principle C violations have been found in a number of languages where all verbal dependents are claimed to appear at A' position. We see in Mohawk that the surface order of nominals does not affect the binding of a nominal and possessor pronoun (Baker 1991, 1996).

(113)   Mohawk

    a. *Uwari   ako-skare'   kv   wa't-huwa-noru'kwanyu-'*
        Mary   FsP-friend   Q   fact-dup-FsS/MsO-kiss-punc

        'Did she$_{i/j}$ kiss Mary's$_i$ boyfriend?' (Baker 1991: 545)

    b. *Uwari   ako-skare'   kv   wa'-te-shako-noru'kwanyu-'*
        Mary   FsP-friend   Q   fact-dup-MsS/FsO-kiss-punc

        Did Mary's$_i$ boyfriend kiss her$_{i/j}$? (Baker 1991: 546)

    c. *Rauha   wa-hi-'nha'-ne'*   *ne tsi   ra-yo'tv-hser-iyo*   *ne   Sak*
        him   fact-lsS/MsO-hire-punc because   MsS-work-nom-good   ne   Sak

        'I hired him$_{i/j}$ because Sak$_i$ is a good worker' (Baker 1991: 550)

Likewise, Oneida lacks Principle C effects (Koenig & Michelson 2015). In (114) the time adverbial refers to the argument clause but 'father' is an argument in both clauses. The same is true of (114b) where *lakeʔníha* 'my father' is an argument of both the matrix and subordinate clauses but necessarily occurs only in the subordinate clause because it occurs between the subordinate verb and a time expression referring to the subordinate clause.

(114) Oneida

    a.   *Wa-hak-lihwísaʔahs-eʔ*   *tsiʔ*   *ʌ-hak-ka·látuhs-eʔ*
          FACT-3.M.SG>1SG-promise-PNCT   that   FUT-3.M.SG>1SG-story.tell-PNCT

          lakeʔníha   *ʌyólhʌ<u>neʔ</u>*
          my.father   tomorrow

          'My father promised me that he would tell me a story tomorrow'

    b.   *Wa-hak-hlo·lí·*   *tsiʔ*   *wa-huwá-hsle-ʔ*   *lakeʔníha*
          FACT-3.M.SG>1SG-tell:PNCT   that   FACT-3>3.M.SG-chase-PNCT   my.father

          nʌ   *kalistaʔkéshuʔ*   *tehotawʌlyehátiʔ.*
          when   on.the.railway.tracks   he.is.going.along

          'My father told me that she chased him when he was going along on the railway tracks' (Koenig & Michelson 2015: 30)

One of the most extensive studies of the lack of Principle C effects in Davis et al.'s (2007) investigation of two varieties of Nuu-chah-nulth: Ahousaht and Ucluelet. Nominals can follow (i.e. be ostensibly bound by) their co-referring pronouns. In (115) we see an absence of Principle C effects in a range of constructions. Davis et al. (2007) find no differences in Principle C effects between the Ahousaht and Ucluelet varieties, so the examples here are only from the former variety.

(115)   a.   **Complement Clause**
          waa[+R]-ʔi·š   *ʔin*   *čat-šiλ-w'it'as-ḥu·k*   *Christine*   *sapnii*   *ʔam'ii-λik*
          say-3.IND   COMP   push-PRF-ASP-3.SBJ   Christine   bread   tomorrow-FUT

          'Christine$_i$ is saying that she$_i$ is gonna knead bread tomorrow' (lit. 'She$_i$ is saying that Christine$_i$'s gonna knead bread tomorrow') (Davis et al. 2007: 195)

    b.   **Adjunct Clause**
          čimqλ-(q)aq-ʔaqλ-ʔi·š   *c'uš-na·k-šiλ-quu*   *Kyle*   *šuwis*
          happy-AUG-FUT-3.IND   new-have-PRF-3.COND   Kyle   shoes

          'Kyle$_i$ will be very happy if he$_i$ gets new shoes' (lit. 'He$_i$ will be very happy if Kyle$_i$ gets new shoes') (Davis et al. 2007: 196)

    c.   **Relative Clause**

n'aatsii-čiⱡ-(m)it-waʔiš	*yaq-(č)iⱡ[+L]-(m)it-iič*	*Christine*	*ʔaaq-a[+R]*
see-PERF-PST-3.QUOT	REL-AUX-PST-3.RC	Christine	shout-IT

huuʔak-ʔuyii
long-later

'Christine saw the one who she was yelling at a long time ago' (lit. 'She$_i$ saw the one who Christine$_i$ was yelling at a long time ago') (Davis et al. 2007: 197)

d. **Cross Sentential**

C'uš-ʔaˑp-(m)it-ʔiˑš	*pikčas-c'uˑ.*	*wik-maⱡ[+L]-'aⱡ-uk-Ø*	*Christine*
new-buy-PST-3.IND	pictures-contain	NEG-left-TEMP-POSS-3.ABS	Christine

haʔum-ḥum
food-meant.for

'She$_i$ bought a new television. Christine$_i$ had no (money) left for food' (Davis et al. 2007: 200)

e. **Coordination**

t'aaqyi-čiⱡ-(m)it-ʔiˑš	*hayumḥi-čiⱡ-'aⱡ-Ø*	*waa-w'it'as-(m)it-ii*	*Mary*
stand.up-PRF-PST-3.IND	forget-PRF-TEMP-3.ABS	say-ASP-PST-3.IREL	Mary

'She$_i$ stood up but she$_i$ had already forgotten what Mary$_i$ was gonna say' (Davis et al. 2007: 200)

I find that XPs in O'dam do show Principle C effects in many cases. In the possession contexts in (116)-(117) I have controlled for constituency using the copular construction *jix=buam jum-poner* 'be mischievous', which modifies the object nominal plus the postpositional phrase *ux-kɨ'n* 'with (a) stick', which modifies the verb *sɨññia'* 'poke.' Together, these disallow the DP *gu Maria* 'Maria' from appearing externally to the object DP *gu xiogi'ñ* 'her brother'. The bracketing for the object DP is shown in (116) and (117). In (116) we see a Principle C effect where the pronominal subject and Maria must have disjoint reference. However, we see in (117) that if there is nothing forcing *gu Maria* to appear within the object-referring DP, Maria can be both the subject and the object possessor. Additionally, in (117) we see that *gu Maria* must minimally refer to the subject, while the object possessor can be disjoint with Maria.

(116) *Sɨssɨ* *[gu* *xiogi-'ñ* *[gu* *maria]*_{DP} *[jix=buam* *jum-poner]*_{RC}*]*_{DP}
     poke DET older.brother-3SG.POSS DET Maria COP=bad MID-act

     ux-kɨ'n
     stick-with

     'She$_j$ hit Maria's$_{i/*j}$ older brother, who is mischievous with a stick'

(117) *[Gu* *xi~xiogi-'ñ]*_{DP} *gu* *maria* *ja-sɨssɨ* *ux-kɨ'n*
     DET PL~older.brother-3SG.POSS DET Maria 3PL.PO-poke stick-with

     'Maria$_j$ hit her$_{i/j}$ older brothers with a stick'

We see expected differences in backwards dependencies between controlled comple-ment clauses and non-controlled subordinate clauses. While backwards dependencies are permitted in controlled clauses, they are not in uncontrolled clauses. We see in (118) that the analytical causative *chia'* 'send' permits its head-marked object *guñ mamar* 'my children' to follow the controlled clause. There is nothing following *guñ mamar* 'my children' to force it to syntactically appear inside of the downstairs clause. Thus, a counter analysis might posit that *guñ ma~mar* 'my children' simply occurs either at the right edge of the matrix clause, or outside of both clauses, as per the translation in (118).

(118) *Mejor* *na=ñ* **ja-***chian-tu'n-da* *na=m-gu=x-ka-ko'-ka'*
     better SUB=1SG.SBJ 3PL.PO-order-APPL-CONT SUB=3PL.SBJ-ADVR=COP-PERF-pain-EST

     gu=ñ *ma~mar*
     DET=1SG.POSS PL~child

     'It is best to take them (to the curandero) because they have become sick, my sons' (Text_102010_PSC_GGS_Lavidademiesposo, 37:25)

However, in (119) we see that the DP *gu maria* 'Maria' can have a backwards dependency with the object of *chia'* 'send;' see Everdell & Melchin (2021) and García Salido (2014: 282-3) for discussion of complement clause marking. Because *gu maria* 'Maria' appears between the subordinator *na* and the verb *dagia'* 'grab', it must be realized in the subordinate clause. Thus, control constructions permit the controller and controlled argument to be in a back-wards dependency. The same is not true if the subordinate clause is not a controlled clause, as in (120) where *gu maria* 'Maria' cannot be coreferential with the subject or the object of *a'gidha'* 'speak to someone.'

(119)   Ø-chia   na   **gu**   ***maria***   bha   daa   bhai'-ram   gu
        3SG.PO-send   SUB   DET   maria   DIR   grab.PFV   tail-on.body.part   DET

        bho'mkox
        squirrel

        'He told Maria to grab the squirrel on the tail'

(120)   a.   *Jiñ-agi-'ñ*   na=t   gu   maria   daa   bhai'-ram   gu
           1SG.SBJ-say-APPL   SUB=PFV   DET   Maria   grab.PFV   tail-on.body   DET

           bho'mkox
           squirrel

           'She$_{i/*j}$ told me that Maria$_j$ grabbed the squirrel on the tail'

     b.   *Ø-agi-'ñ-añ*   na=t   gu   maria   daa   bhai'-ram
           3SG.SBJ-say-APPL-1SG.SBJ   SUB=PFV   DET   Maria   grab.PFV   tail-on.body

           gu   *bho'mkox*
           DET   squirrel

           'I told her$_{i/*j}$ that Maria$_j$ grabbed the squirrel on the tail'

In (121a), we see differences in the types of constituents that can induce Principle C violations. The nominal *gu Pedro* 'Pedro' is the subject of the subordinate clause headed by *na* and must be interpreted as having disjoint reference with the subject of the matrix clause. The temporal adverbial *takab* 'yesterday' in (121a) induces Principle C effects; notice that disjoint reference is not required when the temporal adverbial is left out in (121b).

(121)   a.   *Mua*   gu   suimalh   na=t   mo'ya'   gu   pedro   takab
           kill.SG   DET   deer   SUB=3SG.SBJ.PFV   attack   DET   Pedro   yesterday

           'He$_{i/*j}$ killed the deer that attacked Pedro$_j$ yesterday'

     b.   *Mua*   gu   suimalh   na=t   mo'ya'   gu   pedro
           kill.SG   DET   deer   SUB=3SG.SBJ.PFV   attack   DET   Pedro

           'He$_{i/j}$ killed the deer that attacked Pedro$_j$'

However, relative clauses do allow Principle C violations. In (122) the DP *gu a'asak* 'asaaks'[22] may occur in the postverbal position, bolded in (122a), or immediately follow the *na* subordinator, bolded in (122b), which has a light head *dhi'*. The DP *gu a'asak* 'asaaks'

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[22]An *asaak* is a type of colorful bag made out of ixtle fiber often used for carrying corn.

is interpreted as both the object of the verb *duñia'* in the relative clause and the secondary object of the matrix verb *makia'*.

(122) a. *Jiñ-mak-am*   *dhi'*_{Lighthead}   *na=mɨ-t*   *jup*   *duu*   **gu**
          1SG.PO-give-3PL.SBJ   DEM.PROX   SUB=3PL.SBJ-PFV   IT   make.PFV   DET

          a'∼sak
          PL∼asaak

          'They give me the asaks they make' (lit. 'they give me those, the asaaks they make')

      b. *Jiñ-mak-am*   *dhi'*_{Lighthead}   *na=mɨ-t*   **gu**   **a'∼sak**   *jup*
          1SG.PO-give-3PL.SBJ   DEM.PROX   SUB=3PL.SBJ-PFV   DET   PL∼asaak   IT

          duu
          make.PFV

          'They give me the asaks they make' (lit. 'they give me those, the asaaks they make')

Likewise, in (123), the DP *gu jose* 'José' occurs within the first relative clause and is the subject of *saba'nda'* 'buy'. It can also be interpreted as the recipient of the matrix verb *iobidha'* 'throw.PL to'.

(123) *Ap*   *mui'*   *xi-Ø-iobi-dha-'*   *gu*   *pi∼plot*   *na=t*   **gu**
      2SG.SBJ   DIR   IMP-3SG.PO-throw.PL-APPL-IRR   DET   PL∼ball   SUB=PFV   DET

      Jose   *ja-sabalh*   *na=t*   *cham*   *tɨ'ñcho*
      Jose   3PL.PO-buy.PFV   SUB=PFV   NEG   remember.PFV

      'Throw him$_{i/j}$ the ball that Jose$_j$ bought that he$_j$ forgot (about)'

However, if *gu Jose* occurs within the second relative clause, as in (124), it cannot be interpreted as coreferential with the recipient of *iobidha'* 'throw.PL to'. Rather than a binding constraint, the example in (124) suggests that a backwards dependency must be linearly local. The relative clauses in (123) can be reordered without changing the interpretation of the original sentence, as in (125). This suggests that the relative clauses have no embeddedness relation to each other. With this new order, *gu jose* 'Jose' as the subject of *tɨ'ñcho* 'remember' can be coreferential with the recipient of *iobidha'* 'throw.PL to'. Relative clauses permit Principle C violations, however, it seems that they must be the most linearly local clause to the matrix clause in order to do so.

(124) *Ap*   *mui'* *xi-iobi-dha*   *gu*   *pi~plot*   *na=t*
      2SG.SBJ   DIR   IMP-3SG.PO-throw.PL-APPL-IRR   DET   PL~ball   SUB=PFV

     ja-sabalh   *na=t*   ***gu***   ***Jose***   *cham*   *tɨ'ñcho*
     3PL.PO-buy.PFV   SUB=PFV   DET   Jose   NEG   remember.PFV

     'Throw him$_{i/*j}$ the ball that he$_j$ bought that Jose$_j$ forgot (about)'

(125) *Ap*   *mui'* *xi-iobi-dha*   *gu*   *pi~plot*   *na=t*   *{gu*
      2SG.SBJ   DIR   IMP-3SG.PO-throw.PL-APPL-IRR   DET   PL~ball   SUB=PFV   DET

     Jose}   *cham*   *tɨ'ñcho*   *na=t*   *ja-sabalh*
     Jose   NEG   remember.PFV   SUB=PFV   3PL.PO-buy.PFV

     'Throw him$_{i/j}$ the ball that Jose$_j$ forgot that he$_j$ bought (about)'

We have seen that simplex clauses in O'dam do not permit Principle C violations, against the PAH. However, relative clauses permit Principle C violations provided they are the most local relative clause to the matrix clause.

3.2.6   Disagreement between DPs and verbal head-marking

In languages where verbal inflection syntactically agrees with argument nominals, disagreement is often highly constrained (Corbett 2006; Wechsler & Zlatić 2003). Copestake (1992) notes that collective nouns in some varieties of English (*band, committee, team,* etc.) are morphologically singular and alternate with plural variants (*bands, committees, teams*), but they allow for plural marking on the verb. Copestake (1992) shows that plural marking on the verb forces a "plural sum" interpretation, equivalent to a plural NP (e.g. *the members of the band*).

(126)   a.   One of the band smashed her guitar.

     b.   The band who get(/*gets) top billing at the festival receive(/*receives) a prize.

     c.   The band which gets(/*get) top billing at the festival receives(/*receive) a prize.
        (Wechsler 2015: 25)

In contrast, Koenig & Michelson (2015) show that Oneida is permissive of disagreement between verbal head-marking and sentential nominals. They attribute the ability for such disagreement to the pronominal nature of the head-markers, which therefore do not syntac-

tically agree with the co-referring nominals.[23] Notice in (127a) that the *-yaky-* head-marking expresses 1DU but the nominal *Mercy* lacks any reference to the first person participant. This is to say, the subject referring nominal, *Mercy*, expresses a subset of the head-marked participants of the event. Likewise, in (127b) we see the opposite, the head-marking *-utat-* expresses a 3SG acting on a 3SG, but the nominal *onatʌ·ló·* 'friends' is crucially inflected for plural. Koenig & Michelson (2015) argue that the nominal and pronominal head-marking need to *overlap*, as in be in a subset or superset relation, but do not need to match.

(127) a. *Mercy* expresses subset

né· tsiʔ	*yah thau·tú·*	*oskánhe*	*usa-yaky-atnutólyaht-eʔ*	*Mercy.*
because	it.cannot.occur	together	OPT:REP-1DU.EXCL.A-play-PNCT	Mercy

'(I was so lonely) because Mercy and I can't play together anymore, I can't play together with Mercy anymore' (Koenig & Michelson 2015: 22)

   b. *onatʌ·ló* 'friends' is a superset

nʌ	*kwí·*	*waʔ-utat-hlo·lí·=n*	*on-atʌ·ló·*
so	then	FACT-3.F.INDF>3.F.INDF-tell:PNCT	3.FZ.DP.P-friend

'so then she told her friend,' (i.e. 'she told her', not 'she told them') (Koenig & Michelson 2015: 23)

Turning to O'dam, I find some evidence that number mismatches between head-markers and sentential nominals are permitted. In (128), the subject marker of the subordinate clause *am* indicates 3PL, while the co-referring DP *gu chioñ* is inflected for singular.[24]

(128)

Ya'	*sap*	*pu=x-maax-ka-'*	*na=**m**-pai'*	*daghia'*
DIR	REP.UI	SENS=COP-know-ST-IRR-3SG.SBJ	SUB=3PL.SBJ-ADVR	grab

gu	***chio'ñ***	*gu*	*ubii*
DET	man	DET	woman

'Here one could tell where they grab her, the man to the woman' (García Salido 2014: 82)

However, the far more common evidence of apparent disagreement lies in coordinated participants. Coordination in O'dam most commonly involves the coordinator *gio* 'and', as in (129).

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[23]For an overview, see also Mithun (1985). For language-specific examples see Baker (1996: 122) for Mohawk, Evans (2002) for Bininj Gun-wok, and Mithun (2003) for Yup'ik and Navajo.

[24]The plural form would be *chichio'ñ*.

Oftentimes, nominal coordination simply involes *gio* 'and' appearing between two DPs, as in (129).

(129) | *Gu* | *eli* | *gio* | *gu* | *xikuga-'n* | *jii=mɨ-t* | *mu* |
       | DET | Eli | COORD | DET | younger.brother-3SG.POSS | go.PFV=3PL-PFV | DIR |

        | *tienda* |
        | store |

        'Eli and her younger brother went to the store'

As in other languages, *gio* coordination can involve elision (Beavers & Sag 2004; Chaves 2008), although on the surface elision-involved coordination is not easily identifiable. We see this is (130), where the sequential particle *ba'* immediately follows *gio* to express that the elote and quesadilla were eaten sequentially.[25] The head-marking suggests a difference between the syntactic coordination in (129) versus (130). While subject marking in (129) matches the plural number of the coordinated constituents, the object marking in (130) is singular, rather than plural.

(130) | *Añ* | *Ø-ju'* | *gu* | *junba'* | *gio* | *ba'* | *gu* | *tɨmkalh* | *kiis-kɨ'n* |
       | 1SG | 3SG.PO-eat.PFV | DET | elote | COORD | SEQ | one | DET | tortilla |

        'I ate elote and quesadilla(s) (lit. tortilla with cheese)'

Evidence that the *gio ba'* 'and then' strategy involves elision comes from the interpretation of the *xib* 'now, today' time adverbial in (131). When *takaab* 'yesterday' follows *tɨmkalh kiis-kɨ'n* 'quesadilla', both items were necessarily eaten today. In contrast, when *takaab* 'yesterday' precedes the coordinator *gio*, it only necessarily expresses when the speaker ate elote. The sentence in (131b) is acceptable in a context where the speaker is listing what they have eaten in the past week (i.e. the elote and quesadilla were eaten on different days), whereas the sentence in (131a) is unacceptable in such a context.

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[25]My consultants reported that removing sequential *ba'* from (130) does not necessarily express that the speaker at the elote and quesadilla simultaneously, but that the *ba'* sounds more natural.

(131) a.

Añ	*ju'*	*gu*	*junba'*	*gio*	*ba'*	*gu*	*tɨmkalh*	*kiis-kɨ'n*
1SG	eat.PFV	DET	elote	COORD	SEQ	DET	tortilla	cheese-with

takaab
yesterday

'I ate elote and quesadilla(s) yesterday'

b.

Añ	*ju'*	*gu*	*junba'*	**takaab**	*gio*	*ba'*	*gu*	*tɨmkalh*
1SG	eat.PFV	DET	elote	yesterday	COORD	SEQ	DET	tortilla

kiis-kɨ'n
cheese-with

'I ate elote yesterday and then quesadilla'

However, *gio* does not always appear between two coordinated constituents; it crucially can precede only one of the coordinates. Notice in (132) that the object marking on the verb is 3PL, but the object referring nominals are individually singular. Additionally, the same head-marking and interpretation can hold if *gum gagoox* 'your dog' is not overtly realized.

(132)

(Gu=m	*gagoox)*	*ja-kɨi*	*gio*	*gu=r*	*añ*
DET=2SG.POSS	dog.SG	3PL.PO-attack.PFV	COORD	DET=COP	1SG

'(The coyote) attacked your dog and mine'

In certain cases, the discontiguous coordination disallows an elision analysis, which makes it easier to test for ɸ-feature mismatches between an overt nominal and verbal head-marking. The sentences in (133) were judged to be synonymous. Both include two juxtaposed clauses: the first is a simplex clause involving the verb *a'gi-dha'* 'speak to', the second is a complex clause involving a desiderative copular construction and its subordinate clause. The primary object marking on the verb *a'gi-dha'* 'speak to' is the same in both sentences. However, in (133b) the only DP in the matrix clause has a singular referent, because the coordinatant *gio gu maria* 'and Maria' follows the juxtaposed complex clause. The position of *gio gu maria* 'and Maria' prevents it from appearing in the postverbal position of the clause with *a'gi-dha'* 'speak to', because it in interrupted by an entirely separate clause.

(133) 'I spoke to Juan and Maria, I want to buy their apples'

    a. *[Tu-ja-a'gi-'ñ-ñi-ch*   **gu**   **juan**   **gio**   **gu**   **maria]**
         DUR-3PL.PO-speak-APPL-1SG.SBJ-PFV   DET   Juan   COORD   DET   Maria

           [jix=a'-iñ   *na=ñ*   *ba'*   *ja-saba'da'*   *gu*
           COP=want-1SG.SBJ   SUB=1SG.SBJ   SEQ   3PL.PO-buy-IRR   DET

           ja-mansan]
           3PL.POSS-apple

    b. *[Tu-ja-a'gi-'ñ-ñi-ch*   **gu**   **juan]**   *[jix=a'-iñ*
         DUR-3PL.PO-speak-APPL-1SG.SBJ-PFV   DET   Juan   COP=want-1SG.SBJ

           na=ñ   *ba'*   *ja-saba'da'*   *gu*   *ja-mansan]*   **gio**
           SUB=1SG.SBJ   SEQ   3PL.PO-buy-IRR   DET   3PL.POSS-apple   COORD

           gu   **maria**
           DET   maria

Thus, in the clause with *a'gi-dha'* 'speak to', the DP *gu juan* 'Juan' expresses a subset of the primary object co-referenced on the verb, which is 3PL *ja-*. The sentence in (133b), then, is evidence that disagreement is allowed between overt nominals and head-marking.

One problem with testing disagreement is that my consultants only accept instances of disagreement when there is a coordinator somewhere in the utterance.[26] This suggests that disagreement is pragmatically restricted, but it is not ungrammatical, as would be expected if the verbal head-marking syntactically agreed with the nominals in the postverbal position (i.e. if the head-marking did not itself saturate argument slots).

3.2.7 Weak crossover

The proposal that all XPs are adjuncts predicts that there should be no obvious structural asymmetries among them. XP in Pronominal Argument Languages all have the same structural relationship to the verb and, therefore, should have a more or less flat structure in

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[26]Importantly though, the coordinated constituents do not need to appear in the same clausal constituent, as in (133b).

relation to each other. Variable binding has been noted to be sensitive to structural asymmetries between a (variable) bound pronoun and the quantifier that binds it, so-called weak crossover effects (Cinque 1990; Rizzi 1986). Thus, a flat structure among dependents should not induce any weak crossover effects (Davis et al. 1993; Davis & Matthewson 2009). One way that such (a)symmetries have been probed is by searching for 'true quantifiers' (Baker 1996; see especially 54-8). The key feature of a true quantifier is that it can variably bind a pronoun. The quantifier most pointed to when exploring weak crossover is *every*-style quantifiers. We see an example of this with the quantifier *kada* 'every, each' in Southeast Puebla Nahuatl in (134).[27] A crucial property of *kada* is that it variably binds a singular pronoun, as shown in (134a) and (134b), where the quantified nominal *kada* binds the singular possessive pronoun *i-*. We see in (134c) that *kada* displays weak crossover effects and thus, cannot backwards variably bind a pronoun.

(134) a. **Kada tlaka-tl**   *o-Ø-ki-pipitzo*   *in*   ***i**-siwa.*
         each   man-ABS   PST-3SBJ-3SG.OBJ-kiss   *in*   3SG.POSS-wife

      '[Each man]$_i$ kissed his$_i$ wife'

   b. **Kada ichpochtle**   *Ø-ki-tlasojtla*   *n-**i**-kni.*
         each   girl   3SBJ-3SG.OBJ-love   *in*-3SG.POSS-brother

      '[Each girl]$_i$ loves her$_i$ brother'

   c. **N-**i**-kni*   *Ø-ki-tlasojtla*   **kada   ichpochtle**.
      in-3SG.POSS-brother   3SBJ-3SG.OBJ-love   each   girl

      'Her$_i$ brother loves [each girl]$_i$.   (MacSwan 1998: 108-9)

Quantifiers in O'dam are a syntactic category of particles which, diagnostically, can immediately precede the D^0 (*gu, dhi, gui*) in a DP. I will discuss the syntax of O'dam quantifiers further in §4.2.1, where I will also discuss their more expansive behavior. O'dam appears to lack the types of *every* quantifiers which would be relevant to testing weak crossover, which I show in Table 3.5. The only quantifier dubiously applicable to crossover effects is *jɨma'n*

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[27]Overall I adopt the glossing conventions of Hansen (2010) for Southeast Puebla Nahuatl. The slight exception is the particle *in*, which MacSwan (1998) glosses as simply IN, as does Hansen (2010), following MacSwan. I have modified the gloss from its original smallcaps IN to italics *in* to avoid confusion with the abbreviation for 'indefinite' used elsewhere in this dissertation.

Quantifier	Meaning
baik, makob...	'three, four' (other numerals)
bɨx	'all, completely'
dɨlh	'only'
gok	'two, several'
jai'	'other.PL'
jɨma'n	'each'
jɨ'k	'some'
jɨ'k pɨx	'some of'
jumai'	'other.SG'
ma'n	'one, a'
mui'	'many, much'

Table 3.5: Attested quantifiers in O'dam

'each one'. While it gives an *each one* reading, we see in (135) that it obligatorily triggers plural head marking on the verb, not singular marking, as would be required for weak crossover. Note that the plural *ja-* must co-reference the recipient because the theme, *suudai* 'water', is a mass noun and, therefore, must be co-referenced by 3SG Ø- object marking.

(135) **Jɨma'n**   *ap*   **ja/*Ø**-*maki-a'*   *dhi*   *suudai*   *gu=m*
     each.one   2SG.SBJ   3PL-give-IRR   DEM.PROX   water   DET=2SG.POSS

     sɨ∼spi'ñ
     PL∼younger.brother

'Give this water to each one of your little brothers' (adapted from Willett & Willett 2015: 89)

In (136) the 3PL subject of *chiñxidha'* 'kiss' is co-referential with the 3PL possessor of the object of 'kiss,' *jɨma'n gu ja-ja∼joñi'* 'each one of their wives.' The quantifier *jɨma'n* 'each one' binds the possessor of *jajoiñi'* 'wives' and generates the interpretation that each possessor is associated with their own individual set of the possessum. Each member of the 3PL subject set has their own wife, or wives, and only kisses those wives, no one else's. The difference between the two examples (136a) and (136b) is the position of the object DP. In (136a), the object DP appears in the preverbal position, while in (136b), the object DP appears in the postverbal position. My consultants report that the preverbal object in (136a) sounds topicalized, but there is no difference with regards to the interpretation of the

quantifier.

(136) a. *Jɨma'n*   *gu*   *ja-ja~joñi'*   *ja-chɨñxi'ñ-am*
each.one   DET   3PL.POSS-PL~wife   3PL.PO-kiss-3PL.SBJ

'They$_i$ kiss each one of their$_i$ wives' (i.e. they each have one wife)

b. *Ja-chɨñxi'ñ-am*   *jɨma'n*   *gu*   *ja-ja~joñi'*
3PL.PO-kiss-3PL.SBJ   each.one   DET   3PL.POSS-PL~wife

'They$_i$ kiss each one of their$_i$ wives' (i.e. they each have one wife)

In (137), the quantifier *jɨma'n* 'each one' again occurs within the DP relating to the object. However, in (137), the possessor of the subject *go'ngox* 'dogs' is co-referenced with the object *jɨma'n gu a'alh* 'each child'. The difference between the two sentences in (137) is the position of the subject DP. In (137a), the subject DP occurs in the preverbal position, while in (137b) the subject DP occurs in the post verbal position, following the object DP. In this case, *jɨma'n* 'each one' affects the interpretation of the 3PL possessor of the subject. As with (136), each child in (137) has her own group of one or more dogs and plays with that group of dogs and no one else's.

(137) a. *Gu*   *ja-go'ngox*   *ja-oi'ñ-am*   *jɨma'n*   *gu*   *a'~alh*
DET   3PL.POSS-dog.PL   3PL.PO-play.with-3PL.SBJ   each.one   DET   PL~kid

'Their$_i$ dogs are playing with each kid$_i$'

b. *Ja-oi'ñ-am*   *jɨma'n*   *gu*   *a'~alh*   *gu*   *ja-go'ngox*
3PL.PO-play.with-3PL.SBJ   each.one   DET   PL~kid   DET   3PL.POSS-dog.PL

'Their$_i$ dogs are playing with each kid$_i$'

The quantifier *jɨma'n* 'each one' in the object DP appears to affect the interpretation of the subject possessor pronoun in (137). Thus, if we find that weak crossover effects are truly applicable to *jɨma'n* 'each one,' then the sentences in (137) involves violating weak crossover.

Baker (1996) asks whether *akwéku* in Mohawk is best understood as an *all*-quantifier (i.e. not subject to weak crossover effects) or an *every*-quantifier (i.e. subject to weak crossover effects). He ultimately argues for an 'all' analysis of *akwéku*, in part because it is underspecified for distributive versus collective interpretation.

(138) a. *Akwéku   wa'-ti-shakoti-noru'kwányu-'   ne   raotí-skare'.*
           all   FACT-DUP-MpS/3pO-kiss-PNCT   NE   MpP-friend

       'All of them$_i$ kissed their$_i$ girlfriends' (Baker 1996: 55)

       b. *Raoti-[i]tshenʌ-shú'a   wa-huwatí-hser-e'   akwéku   rati-ksa'-okú'a.*
           MpP-pet-PL   FACT-3pS/MpO-follow-PNCT   all   MpS-child-PL

       'Their$_i$ pets followed [all of the boys]$_i$' (Baker 1996: 57)

Unlike Mohawk *akwéku*, O'dam *jɨma'n* does impose a distributed reading on the quantified
nominal (and any bound pronouns). However, it seems to do so without variable binding.
Instead *jɨma'n* quantifies over the full set denoted by the quantified nominal such that the
predicate denoted by the verb is applied individually to each entity of the quantified set,
which must consist of at least 2 entities.[28] I show an illustration of this for the sentence in
(137a), repeated in (139). The sentence in (139) expresses that each child is playing with
their own set of dogs and no other dogs (i.e. that are some other child's). An individual child
can have one or more dogs, but each dog is only associated with one child. The table in
(140) shows the interpretation, following Henderson (2011), who uses a bare bones version
of Dynamic Plural Logic from van den Berg (1996). P is a set of assignments that return a
truth value for an *oidha'* 'playing with' event, while p_n are the single variable assignments
that map individual entities to truth values. The sets X and Y are the set of dogs and
children, respectively, which necessarily consist of at least two individuals, and x_n, y_n are
the individuals members of X and Y for a given assignment p_n.

(139) *Gu   ja-go'ngox   ja-oi'ñ-am   jɨma'n   gu   a'~alh*
       DET   3PL.POSS-dog.PL   3PL.PO-play.with-3PL.SBJ each.one DET   PL~kid

       'Their$_i$ dogs are playing with each kid$_i$'

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[28]Note that *jɨma'n* can quantify over atomized sets, in which case it maps an eventuality to atoms, rather
than entities (see for example Everdell & Denlinger 2018). However, this use of *jɨma'n* is restricted to its use
with the *-kap* 'places' adverbial, which is not relevant to this dissertation.

(140)

P	...	X	Y	true	...
p_1	...	x_1	y_1	1	...
p_2	...	x_2	y_2	1	...
p_3	...	x_3	y_2	1	...
p_4	...	x_3	y_4	0	...

As we see in (140), a given assignment p_n returns true if each x_n is mapped to only one y_n, however, any number of individuals x_n can be mapped to the same y_n. The assignments p_2 and p_3 are true because they involve two different dogs, x_2 and x_3 being mapped to the same child y_2. The assignment for p_4 is false because the dog x_3 has already been mapped to the child y_2 and, therefore, cannot also be mapped to y_4. We see then that rather than variably binding a pronoun, *jɨma'n* simply affects the mapping of the predicate to the members of the quantified set.

Thus, O'dam seems to lack any quantifiers that would display weak crossover effects. Baker (1996) would take this lack of *every*-style quantifiers as evidence that O'dam DPs occur in A'-position. However, the quantifier *kada* in Southeast Puebla Nahuatl is a loan from Spanish *cada* 'every' (Suárez 1977). MacSwan (1998) says that native Nahuatl quantifiers are not relevant to testing weak crossover.[29] MacSwan (1998) suggests that there is no evidence that the borrowing of *kada* involved, or caused, any reorganization of the syntactic structure of Nahuatl. This suggests that the results of testing weak crossover for O'dam, namely the absence of applicable quantifiers, is not evidence in favor of an adjunct analysis of O'dam verbal dependents; it is simply not evidence against such an analysis.

3.2.8 The question of definiteness: interpretive differences between overt and "covert" DPs

With regards to interpretive differences between overt and covert nominals, the Pronominal Argument Hypothesis is somewhat ambiguous. The strongest form of the PAH says that argument slots in Pronominal Argument Languages must be saturated by pronouns. This

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[29]MacSwan (1998) notes that the *izquintin* 'each' quantifier of Classical Nahuatl triggers plural marking for any pronouns it binds. However, MacSwan also points out that not enough is known about Classical Nahuatl *izquintin* to say whether or not it shows weak crossover effects.

is a particularly controversial proposal because so-called incorporated pronouns often do not act much like lexical pronouns in other languages (Bresnan & Mchombo 1987). Evans (1999: 256ff) points out that pronouns generally place restrictions on their referents while agreement markers are "non-committal about reference and discourse status." For example, pronouns generally force specific readings when they are not bound by certain semantic operators (Wechsler 2015: 8), such as the English *every* quantifier in (141).

(141) Every Michael$_i$ thinks he$_i$ is funny.

Austin & Bresnan (1996: 234) point out that pronouns in languages like English can appear with indefinite nominals, but they still maintain their specific reading. Notice in (142) that the pronominal arguments maintain their specific readings, despite occurring with indefinite appositives.

(142) **She**, a first-year undergraduate, stumped **him**, a tenured full professor. (Austin & Bresnan 1996: 234, citing Bernard Comrie p.c.)

In contrast, the English 3sg subject agreement suffix co-occurs with a wide range of (pro)nominals and does not place restrictions on their reference type (e.g. specificity), as shown in (143). Notice particularly, that (143c) contains an indefinite subject nominal that is interpreted indefinitely, contrasting directly with (142).

(143) a. Anaphoric pronouns: She come-**s**.

     b. Definite NPs: The old postman come-**s** every morning.

     c. Indefinites: A tall/different man come-**s** here every day.

     d. Negative quantifiers No one civilized ring-**s** so early.

     e. NPs under the scope of again: A new president lie-**s** again every term.

As Evans (1999) points out, there is a weaker form of the Pronominal Argument Hypothesis that simply holds that the verbal head-marking saturates argument slots but not through pronouns. This weaker form of the PAH predicts that there should be no interpretive difference between overt and covert DPs. Austin & Bresnan (1996) and Legate (2002) argue that Warlpiri argument indexing markers are agreement markers, contra Hale (1983) and Jelinek (1984), because they are compatible with any type of NP, as shown in (144), and

only force a specific reading if the associated NP is omitted, as in (144c). They point out that the referential distinction between overt and omitted NPs does not follow if the argument indexing markers in Warlpiri are pronominal.

(144) a. **Definite/indefinite**
       Ngarrka-ngku *=ka* *wawirri* *panti-rni.*
       man-ERG PRS kangaroo.ABS spear-NPAST

       'The/a man is spearing the/a kangaroo' (Simpson 1991: 153)

   b. **Indefinite existential**
       Balgo *Mission-rla* *ka-lu* *Warlpiri-ji.*
       Balgo Mission-LOC PRSIMPF-3PL Warlpiri-TOP

       'At Balgo Mission there are Warlpiri people living' (Legate 2002: 71)

   c. **Specific**
       Panti-rni *=ka.*
       spear-NPAST PRS

       'He/she is spearing him/her/it' (Simpson 1991: 153)

While Bresnan & Mchombo (1987) and Evans (1999) note that agreement markers tend to be non-committal about the referential properties of whatever they agree with, this is always noted in contrast with some more pronominal element or construction which does place referential restrictions (Baker 2003; Butt 2007; Haugen 2007, 2012; LeSourd 2006; Sandoval & Jelinek 1989). In contrast, O'dam lacks any lexical pronouns that appear in place of a noun. Notice in the contrasting sentences in (145a) and (145b) that the head-marking appears regardless of the presence, or absence, of their co-referring nominals.

(145) a. *Dhu* *gu* *ja~ja'* *ja-jaisa-mɨ-t* *dhi*
       EVID.DIR DET PL~pot 3PL.PO-break.PL.PFV-3PL.SBJ-PFV DEM.PROX
           a'~alh
           PL~child

       'I saw these children break (the) pots!'

   b. *Dhu* *ja-jaisa-mɨ-t*
       EVID.DIR 3PL.PO-break.PL.PFV-3PL.SBJ-PFV

       'I saw them break them!'

Thus, O'dam does not have the option for a lexical pronoun versus a nominal. The head-markers always appear, and sometimes co-occur with an overt co-referring nominal phrase. I will show that definiteness is overall not a part of O'dam grammar. Instead, the extent to which any referent in an expression is interpreted as definite is entirely dependent on the pragmatic context it appears in, not the syntactic context. First, in §3.2.8.1 I will show that the determiner *gu* is simply the realization of a basic D^0 and type-shifts the governed NP so that it is compatible with an individual interpretation (Heim & Kratzer 1998: 232–3, see also Chierchia 1998). Then, I will argue in §3.2.8.4 that definiteness in O'dam can only be said to be imposed where the selection of a verbal construction itself establishes a pragmatic context which draws focus on some argument. Crucially, such imposition only pertains to objects and bears no relation to their head-marking.

There is significant debate about what exactly is meant by **definite** and the extent to which, for example, definite articles (e.g. English *the*) are exclusively used for referents interpreted as definite (see for example Coppock & Beaver 2012, 2015 as well as König 2019; Royer 2022; Šimík & Demian 2020; Yifrach & Coppock 2021). However, the question I explore here is whether overt and covert nominals can be said to differ in definiteness. Towards this end, I follow Abbott's (2004) view that definiteness has three characteristics, shown in (146).

(146)   a.   **Existential presupposition:** definiteness presupposes existence (i.e. definiteness is incompatible with existential predication).

   b.   **Uniqueness:** The referent(s) are the maximal set which satisfy the description in the given context (e.g. "The wolf over there" entails that there is no other wolf "over there").

   c.   **Familiarity:** The referent(s) are familiar to the speaker and hearer (e.g. "the wolf is over there" presupposes that the hearer and speaker have shared knowledge of a particular wolf).

Matthewson (2008) shows that there is cross-linguistic variation on whether definiteness involves all three of the elements of Abbott's (2004) characteristics (e.g. that definiteness in St'át'imcets only involves familiarity). Again, I will simply be considering whether any of these are imposed on overt or covert nominals in O'dam; I am agnostic about how definiteness

should be properly treated cross-linguistically. We will see that participants with and without DP exponents are symmetrical in that the three above characteristics are pragmatically conditioned, and there is no interpretive difference between the two.

3.2.8.1 *gu* as D

Willett (1991: §3.31) notes that nominals in O'dam obligatorily include one of three articles: *gu*, *dhi*, and *gui*. As he points out, *dhi* and *gui* are demonstratives, they are, therefore, not relevant to this section. A DP they head is generally interpreted as definite and specific, based on the nature of them as demonstratives (Diessel 1999: Chapter 3). Later in his reference grammar, Willett (1991: §12.2) points out that *gu* seems to function as both a definite article and an indefinite article.[30] I will flesh this out here and show that O'dam nominals are underspecified for definiteness unless bound by certain semantic operators (e.g. 'all' quantifiers).

Beginning with the presupposition of existence, *gu*-headed DPs do not presuppose existence. Everdell & García Salido (2022a) find that *gu*-headed DPs consistently appear in eixstential constructions. We see in (147) that *gu*-headed nominals are used in constructions that assert existence. Likewise, *gu*-headed DPs can be used to ask about existence, as shown in (148), where Juan asks Pedro whether there exists *gu jabook matai* 'lime' in the spring (so that it can be gathered to nixtamalize corn). In (149) we see that a *gu*-headed DP can be used to expresses something whose existence is negated.

(147)   *Ya'*   *jai'ch-am*   *gu*   *o'dam*
    DEM.PROX   EXIST-3PL.SBJ   DET   O'dam

   'Here, there are O'dam' (Text_072011_PSC_GG_elcuidadodelamujer1, 15:37)

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[30]Willett (1991) follows Zubin & Li's (1986) "pragmatic matching" to describe the behavior of *gu*.

(148) *Jai'ch=aa* **gu** **jabook** **matai** *mi'-ñi* *bibiatam* *jup-kai'ch* *gu* *Juan*
EXIST=Q DET light lime DEM-VIZ spring IT-say DET Juan

pui'-ñ *dho* *té-kéé-ka-'* *na* *sap* *jai'ch* *jup-kai'ch*
SENS-1SG.SBJ EVID.DIR DUR-hear-ST-IRR SUB REP.UI EXIST IT-say

gu *peegro*
DET Pedro

"'Is there lime in the spring?" Juan asked. "I have heard that there is" said Pedro'
(Willett & Willett 2015: 76)

(149) *Géé'* *giotir* *pai'* *na* **cham** *jai'ch* **gu** *u'~ux*
Big Plains where SUB NEG EXIST DET PL~plant

'Llano Grande where there are no plants' (Text_082011_MMC_GGS_La estrel-
ladelamañana3, 05:47)

I find that singular *gu*-headed DPs are the only DPs that can be used in constructions that assert existence. We see in (150) that the *gu*-headed DP *gu ko'* '(the) snake', can be interpreted in two ways, shown in the two translations. The first interprets *gu ko'* indefinitely (snakes); Juana does not see any snakes whatsoever. The second interpretation of *gu ko'* interprets the DP definitely 'the snake', presupposing the existence of some singular discourse salient snake, but asserting that Juana does not see it. Notable for the second interpretation is that the subordinate clause *na gu' cham jai'ch* 'because there aren't any' involves 3SG subject marking (note the lack of an overt subject marker) and must be interpreted as negating the existence of all snakes in the relevant area.

(150) *Cham* *niiñ* **gu** **ko'** *na-gu'* *cham* *jai'ch*
NEG see DET snake SUB-ADVR NEG EXIST

'(Juana) does not see any snakes, because there aren't any'
'(Juana) does not see the snake, because there aren't any (there)'

We see in (151) that the existential reading of *gu ko'* can be made infelicitous simply by changing the continuation. We also see in (151) that O'dam does not permit optional plural marking. The continuation *dai na jɨ'k jatɨɨ* 'but she did see some (snakes)' disallows an existential or kind interpretation of *gu ko'* 'the snake' in the previous clause. Therefore, *gu ko'* 'the snake' must be interpreted as a singular familiar snake.

(151)   *Cham*   *tɨɨ*   *gu*   *ko'*   *dai*   *na*   *jɨ'k*   *ja-tɨɨ*
           NEG   see.PFV   DET   snake   but   SUB   some   3PL.PO-see.PFV

         (Juana) did not see the snake but she did see some (snakes)
         #(Juana) did not see any snakes but she did see some

Contrast the non-quantified DP *gu ko'* in (150) to the quantified DP *ma'n gu ko'* in (152). This sentence expresses that Juana did not see a single snake because there are no snakes (i.e. she also did not see 2, 3, or 4 snakes). However, unlike the non-quantified DP in (150), *ma'n gu ko'* cannot be interpreted existentially. My consultants reported that the matrix clause in the utterance in (152) would be an extremely odd way to say that Juana did not see any snakes, while the matrix clause in (150) can be naturally used on an existential interpretation.

(152)   *Cham*   *nɨiñ*   **ma'n**   **gu**   **ko'**   *na-gu'*   *cham*   *jai'ch*
           NEG   see   one   DET   snake   SUB-ADVR   NEG   EXIST

         '(Juana) does not see one snake, because there aren't any'
         #(Juana) does not see any snakes, because there aren't any

This seems surprising given Willett's (1991) note that *ma'n gu* [one + DET] is used to express indefiniteness, from which it would follow that *ma'n gu* would not commit the speaker to a particular number (e.g. one). This number commitment is shown in (153) where the subordinate clause in (152), which negates the existence of all snakes, can be replaced with a negation of the *ma'n* quantifier. The subordinate clause in (153) does not affect the interpretation of *ma'n gu ko'* in (152), it simply gives an alternative reason why Juana did not see a single snake.

(153)   *Cham*   *nɨiñ*   **ma'n**   **gu**   **ko'**   *na-gu'*   *gok*   *ja-nɨiñ*
           NEG   see   one   DET   snake   SUB-ADVR   two   3PL.PO-see

         '(Juana) does not see one snake, because she sees two'

We see again in (154a) that the use of *ma'n*, even in an indefinite sense, commits the speaker to the number one. Notice that the continuation *cham jax bua jɨ'k tɨgi-a'* 'I do not care how many' is infelicitous in (154a). My consultants commented that the continuation is odd because you said you are looking for one blanket (i.e. you do care how many). In contrast, we see in (154b) that the indefinite use of *gu* includes no such numerical committment and, as

111

such, the continuation *cham jax bua jɨ'k tɨgi-a'* 'I do not care how many' is acceptable. Note that in (154) I have included the optional *ja-* 3SG primary object prefix on the final clause *dai a'-iñ* 'I just need it/them' to show that the number committment I find for *ma'n* in (154a) does not come from the object marking in the continuation. However, my consultants strongly prefer the clause without *ja-* on the interpretation where the speaker is entirely non-committal about the number of blankets, noting that the inclusion of *ja-* is odd if the speaker would be fine with only one blanket.

(154)　a.　*#**Ma'n**　**gu**　**sa'ua**　ga'nga-'iñ*　　　*cham　jax　bua　jɨ'k　tɨgi-a',*
　　　　　one　　DET　blanket　search-1SG.SBJ　NEG　how　have　which　see-IRR

　　　　　　dai　(ja-)a'-iñ
　　　　　　but　3PL.PO-want-1SG.SBJ

　　　Intended: I am looking for a blanket, I do not care how many, I just need (it/them)'

　　　b.　***Gu**　**sa'ua**　ga'nga-'iñ*　　　*cham　jax　bua　jɨ'k　tɨgi-a',　dai*
　　　　　DET　blanket　search-1SG.SBJ　NEG　how　have　which　see-IRR　but

　　　　　　(ja-)a'-iñ
　　　　　　3PL.PO-want-1SG.SBJ

　　　I am looking for a blanket, I do not care how many, I just need (it/them)'

As with a non-quantified DP, as in (150), we see in (155) that a *ma'n* 'one' quantified DP can be easily interpreted as definite, presupposing the existence of some discourse salient snake.

(155)　*Cham　tɨɨ　　**ma'n**　**gu**　**ko'**　dai　na　jai'　ja-tɨɨ*
　　　NEG　see.PFV　one　　DET　snake　but　SUB　other.PL　3PL.PO-see.PFV

　　　'(Juana) did not see the one snake (that I did), but she did see other (snakes/things)'

I have shown in this section that Willett (1991) was right that the definiteness interpretation of *gu* is pragmatically motivated. I have additionally shown that the quantifier *ma'n* 'one' does not truly form an indefinite article in O'dam. Instead, *ma'n* simply quantifies the noun as 'one' and the definiteness patterns with *gu* (i.e. it is pragmatic). Taken together this suggests that the function of *ma'n* 'one' has no direct impact on a nominal's definiteness. I have additionally shown that the determiner *gu* is obligatory for kind/existential

interpretations of nominals. Crucially, the interpretation of *gu*, or *ma'n gu*, is not connected to syntactic properties of other parts of the sentence. We saw in each example that definite and indefinite interpretations were equally acceptable, unless some continuation specifically disallowed one reading, as in (154b).

3.2.8.2 Nominals without a DP projection

The significant role of pragmatic context in determining the interpretation of *gu* suggests that there is no definiteness feature attached to *gu*; it is simply a D. We will see that a DP in O'dam has two functions. First it allows a nominal to appear as a standalone phrase, or in a clause. Second, the DP projection is where a nominal can gain an individual reading.[31] We will see that nominals without a DP projection only allow a kind reading.

Two noun incorporation constructions disallow a DP projection and only permit a kind interpretation. The first construction is a predicative possession construction shown in (156). In this construction, the verbalizing prefix[32] *tu-* combines with an N to produce a predicative possession construction whereby the verbal subject is the possessor and the incorporated noun is the possessum. We see examples of the *tu-* possession construction in (156).

(156) a. *Jix=bɨ'*   **tu-puerta**   *gu*   *ba'ak*
           COP=red   POSS-door   DET   house

           'The house/building has a red door'

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[31]O'dam is consistent with analyses of nominal structure that see the DP projection as the place where individual readings are built (for relevant discussion see Longobardi 1994, 2001, 2008, and Gambarage & Matthewson (2022); as well as Stowell 1989 and Matthewson 1998, 1999).

[32]While this *tu-* prefix is phonologically similar to the *tu-* durative prefix, it is a distinct morpheme. First, the distribution is distinct: the possession prefix attaches to nouns to form verbs, while the durative prefix attaches to verbs and lacks any verbalizing function. Second, the meaning is distinct: the durative prefix has an aspectual meaning rather than a possession meaning. Haugen (2017: §4.4) proposes a distinct Proto Uto-Aztecan source for the possession *tu-*, from the Proto Uto-Aztecan Active Possession suffix *-tu* 'get, acquire' (see also Haugen 2008). Whereas, durative *tu-* likely reconstructs back to a habitual/durative prefix (Shaul 2000). Finally, the morphophonemics are distinct between the prefixes; while the /u/ vowel of the durative prefix harmonizes to a following high vowel (Willett 1991: §2.36), the possession prefix does not. Taken together, the durative and possession *tu-* prefixes are entirely distinct.

b. *Dai   ma'n   **tu-sa'ua-'iñ***
  but   one   POSS-blanket-1SG.SBJ

  'I only have one blanket' (Willett 1991: 64)

c. *Jɨ'k   ap   **tu-ma~mar***
  how.many   2SG.SBJ   POSS-PL~offspring

  'How many children do you have?' (Willett 1991: 64)

The other noun incorporation construction derives a creation verb from a noun and the *-ta* verbalizing suffix, shown in (157). The subject is the agent and the incorporated noun is the created object. Note in (157b) that the *-ta* suffix is replaced by the *-tuda* applicative to introduce a recipient beneficiary to the base form, see §5.1.2, see also Hale & Keyser (1997) for discussion of the same process in Tohono O'odham.

(157) a. *Ap   mar-ta-'*
          2SG.SBJ   offspring-VBLZ-IRR

          'You will have children'

      b. *Tɨi   ba-tu-aski-chdha-'-iñ   pu   cham   matɨt*
          INT.NR   CMP-DUR-bag-APPL-1SG.SBJ   SENS   NEG   know.PFV
             tɨ~tɨrbiñ-dha'-iñ   ja'p   añ   chɨi   bua-da'
             IT~fold-APPL-1SG.SBJ   DIR   1SG.SBJ   INT.NR   make-CONT

          'I wanted to make bags, but I did not know how to fold the threads, I intended to do it, (but I could not)' (Text_092010_TSC_GGS_nar +lhich ka,' 01:09)

Notable for these two constructions is that they only permit an N, following Everdell (2018). First we see in (158a) and (159a) that neither construction permits a *gu* determiner with the incorporated noun. Likewise, attributive adjectives are not permitted, as in (158b) and (159b); instead any stative modification must be made through predicative means, as in the copular construction in (156a). Finally, in (158c) and (158d), and (159c) and (159d) we see that restrictions on the incorporated nouns are not limitations on the morphological word. Pronominal possession involves affixation that occurs within the O'dam word (Tallman et al. 2018) and this affixation is disallowed regardless of whether the noun is alienable, as in the (c) examples, or inalienable.

(158)   *tu-* possessive construction

    a.   *tu-[gu   sa'ua]-'iñ*
        POSS-DET   blanket-1SG.SBJ

        Intended: I have a/the blanket

    b.   *tu-[bɨ'   sa'ua]-'iñ*
        POSS-red   blanket-1SG.SBJ

        Intended: I have a/the red blanket

    c.   *Añ   tu-sa'ua-ga-'n*
        1SG.SBJ   POSS-blanket-AL-3SG.POSS

        Intended: I have her blanket(s)

    d.   *Añ   tu-bhuru'xi-'n*
        1SG.SBJ   POSS-donkey-3SG.POSS

        Intended: I have his donkey(s)

(159)   *-ta* creation verb

    a.   *[gu askich]-cha-'-iñ*
        DET   asaak-VBLZ-IRR-1SG

        Intended: I make a/the asaak

    b.   *[gɇ' askich]-cha-'-iñ*
        big   asaak-VBLZ-IRR-1SG

        Intended: I make big asaak(s)

    c.   *asaak-ga-'n-ta-'-iñ*
        morral-AL-3SG.POSS-IRR-1SG.SBJ

        Intended: I am going to make his morral

    d.   *tɨmaichi-'ñ-cha-'-iñ*
        tortilla-3SG.POSS-VBLZ-IRR-1SG.SBJ

        Intended: I am going to make his tortilla(s)

Now that we have seen that neither noun incorporation construction in O'dam involves a DP level, I show that only kind interpretations are possible for the incorporated nominal's referent. First, the only textual example I have found where consultants translate a *-ta* or

tu- verb using a definite article is shown in (160).[33] The translation of *ba-tɨ-tɨmaich-cha-iñ* as 'I make the tamales' seems to be a weak definite reading (Carlson et al. 2006; Poesio 1994). This example comes from a text where a woman is describing regularly occurring rituals in the indigenous Tepehuan belief system, called *costumbre* (Reyes Valdez 2015). In her discussion she lays out the tasks for each set of days in the ritual. The tamales are some unique set of tamales made of a specific instantiation of a *costumbre* ceremony. Instead, the translation uses a weak definite reading of *the*, along the lines of (161), where *the pediatrician* references a kind, rather than an individual (see Aguilar-Guevara & Zwarts 2010, 2014).

(160) *Na=r-makob-ka-'*   **ba-tɨ-tɨmaich-cha-iñ**   *ban*   *otro*   *na*   *mi'*
       SUB=COP-four-ST-IRR   CMP-DUR-tamal-VBLZ-1SG.SBJ   day   another   SUB   DIR

   jir=oidhar-ga-'n   *ban*   *jiñ-xi-batbi-ji*
   COP=live-AL-3SG.POSS   day   1SG.PO-IMP-take.a.shower-DC

'Four days to make **the tamales** and five days for what follows, I shower' (Text_102010_CFC_GGS_Lacostumbre, 00:46)

(161)   When should babies start going to **the pediatrician**?

Aside from the lack of examples of consultants translating the incorporated nominals of *tu-* and *-ta* verbs using definite expressions in Spanish, there is grammatical evidence for the obligatory kind interpretation of the incorporated nouns. We see in (162a) that the pronominal form of the proximal demonstrative *dhi'* cannot refer to the incorporated object. In order for the demonstrative to refer to the created object, my consultants offered verbs such as *duñia'* 'do, make' where the noun is not incorporated (i.e. it has a DP projection). We see two such examples in (162c), where the demonstrative is in the D position of the overt nominal, and (162b), where the pronominal form of the demonstrative refers to the created object.

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[33]My consultants translate O'dam into Spanish, the English translation is from García Salido (2014: 209), which I have corroborated on my own.

(162) Context: you are standing in front of a partially built house.

  a. *Dhi'   tu-ba'k-ch-im-am   gu=ñ   tujuan-dam
     DEM.PROX   DUR-house-VBLZ-PROG-3PL.SBJ   DET=1SG.POSS   work-NMLZ

     Intended: My workers are building this house'

  b. Jup-duñ-im-am   dhi   ba'ak
     IT-make-PROG-3PL.SBJ   DEM.PROX   house

     '(My workers) are building this house'

  c. Dhi'   jup-duñ-im-am
     DEM.PROX   IT-make-PROG-3PL.SBJ

     '(My workers) are building this (house)'

The created object can be quantified over (see §4.2.1), however, the quantifier still maintains the kind interpretation of the incorporated object. In (163a) we see that the quantifier *dilh* 'only' cannot be interpreted as excluding other individual houses, only as excluding other types of actions done by the workers. Thus, *dilh* 'only' cannot quantify over an individual *ba'ak* 'house', only *ba'ak* 'house' as a type of created object. Likewise, we see in (163b) that the *ma'n* 'one' quantifier cannot have the definite interpretation we saw when it quantified a full DP (155).

(163) a. Dhi   masaa'n   **dilh**   tu-ba'k-ch-im-am   gu=ñ
          DEM.PROX   month   only   DUR-house-VBLZ-PROG-3PL.SBJ   DET=1SG.POSS
              tujuan-dam
              work-NMLZ

          'My workers are only house-building this month (they will not keep it up after-
          wards, they will not do any other building)'
          #My workers are only building (this) house this month (and will not build any
          others)

       b. Dhi   masaa'n   **ma'n**   tu-ba'k-ch-im-am   gu=ñ
          DEM.PROX   month   one   DUR-house-VBLZ-PROG-3PL.SBJ   DET=1SG.POSS
              tujuan-dam
              work-NMLZ

          'My workers are building one house this month (i.e. they are not building two)'
          #My workers are building the one house this month

In contrast to the denominal *-ta* verbs, we see the creation verb *u'uana'* 'write' in (164), which requires its created theme to have a DP projection (because the theme is not incorporated). In (164a) the quantifier *dɨlh* can exclude other individual books in addition to other types of created objects. Likewise, we see in (164b) that the preposed *ma'n* 'one' quantifier can have a indefinite 'one book' or definite 'the one book' interpretation.

(164) a. *Dhi*   *masaa'n* *dɨlh*   *u'ua'n-im-iñ*   *gu*   *libro*
           DEM.PROX   month   only   write-PROG-1SG.SBJ   DET/DEM.PROX   book

       'I am only writing the book/books book this month

    b. *Dhi*   *masaa'n* *ma'n*   *u'ua'n-im-iñ*   *(gu*   *libro)*
        DEM.PROX   month   one   write-PROG-1SG.SBJ   DET   book

       'I am writing one book/the one book

We have seen the range of interpretations for overt nominals. The determiner *gu* is underspecified for definiteness, however, only a nominal with a DP projection can have an individual (or definite) reading. I now turn to the interpretive properties of covert nominals.

3.2.8.3   Interpretive properties of 3rd person markers

I find that the 3rd person subject and primary object markers, shown in Table 3.6, have the same interpretive possibilities as *gu* headed DPs. They can be interpreted as definite or indefinite, depending on the context, and the 3SG form is used for existential readings.

	Singular	Plural
Subject suffix	-Ø	-(a)m
Free form subject	Ø	am
Primary Object	Ø-	ja-

Table 3.6: Third person subject and primary object markers

We see a simple example of this is in (165). In the elicitation context, *gu ko'* refers to an individual familiar snake. The quantifier *jai'* 'other.PL' quantifies over the primary object of the subordinated verb *tigia'* 'see', which is co-referenced by the 3PL *-ja* prefix. The object of *tigia'* can be interpreted in two ways: either Juana saw other snakes or other things that are

not snakes. In the first reading, *jai'* 'other.PL' quantifies over the referent of *gu ko'*: literally 'Juana saw others like the (familiar) snake'. In the second reading, *jai'* 'other.PL' quantifies over the kind that *gu ko'* is a member of : literally 'Juana saw other things.' As with an overt DP, then, the co-referenced object of *tɨgia'* can be interpreted as an individual or a kind.

(165) *Cham* *tɨɨ* *gu* *ko'* *dai* *na=t* ***jai'*** ***ja-tɨɨ***
       NEG   see.PFV   DET snake but SUB=PFV other.PL 3PL.PO-*see* .

'(Juana) did not see the snake (we talked about earlier) but she did see other (snakes/things)'

Evans (1999) points out that the scope of adverbs like *again* is generally limited by lexical pronouns. In (166a) *again* can scope over the existential quantifier introduced by *a fish* and the reading is that the fish Mary caught was not necessarily the same one she caught the previous time. This contrasts with (166b) where the specificity introduced by the pronoun cannot be under the scope of *again* and the fish that Mary caught must be the same fish as the previous time(s).

(166) a. Mary caught a fish again today

      b. Mary caught it, a fish, again today
         (Wechsler 2015: 10-11)

In O'dam, 'again' is usually expressed with a complex coordinator made up of the coordinator *gio* plus the iterative *jup*, as shown in (167). Object markers do not limit the scope of *gio=p*. We see in (167a) that a definite DP *guñ kamiis* 'my shirt' does not cause the object of the clause linked by *gio=p* 'again' to be interpreted definitely. The clause linked by *giop=p* 'again' in (167a) can be interpreted as the speaker saying they will rewash the same shirt again the next day or that they will do washing again the next day, where the object is interpreted existentially. Likewise, in (167b) with a plural patient, the same interpretations hold. The utterance can either express that the speaker will wash the same clothes two days in a row or that tomorrow they will wash more shirts (i.e. different shirts).

(167) a. *Takab*   *bakuañ=ñi-ch*   *gu=ñ*   *kamiis* ***gio=p***
        yesterday   wash.SG=1SG.SBJ-PFV   DET=1SG.POSS shirt   COORD=IT

       kabuimuk   *Ø-bakuañ-iñ*
       tomorrow   3SG.PO-wash.SG-1SG

       'Yesterday I washed my shirt and tomorrow I will wash (it/Ø) again'

    b. *Takab*   *ja-bopkuñ=ñi-ch*   *gu*   *ka~kmiis* ***gio=p***
        yesterday   3PL.PO-wash.PL=1SG.SBJ-PFV   DET   PL~shirt   COORD=IT

       kabuimuk   *ja-bopkuñ-iñ*
       tomorrow   3PL.PO-wash.PL-1SG

       'Yesterday I washed shirts and tomorrow I will wash them/shirts again'

We see again in (168a) that using *gio=p* to express 'again' does not require a strict bound pronominal reading. The utterance in (168a) is most naturally interpreted as the speaker will burn a different set of firewood tonight. However, another way to express 'again' is the combination of the sensorial particle *pui* plus the iterative *jup*. In (168b) we see that the *pui=p* combination expresses that the same firewood is used. My consultants commented that (168b) could be said in a context where the speaker was burning large logs so that there is still a significant part of the logs used the previous night that can be ignited again.

(168) a. *Takab*   *añ*   *mɨi-'ñ*   *gu*   *ku'a'*   ***gio=p***   *xib*
        yesterday   1SG.SBJ   burn-APPL   DET   firewood   COORD=IT   today

       dhi   *tukaa'*   *mɨi-dha-'-iñ*
       DEM.PROX   night   burn-APPL-IRR-1SG.SBJ

       'Yesterday I burned firewood and tonight I will burn it again' (different wood)

    b. *Takab*   *añ*   *mɨi-'ñ*   *gu*   *ku'a'*   *gio*   *xib*   *dhi*
        yesterday   1SG.SBJ   burn-APPL   DET   firewood   COORD   today   DEM.PROX

       tukaa   ***pui=p***   *mɨi-dha-'-iñ*
       night   SENS=IT   burn-APPL-IRR-1SG.SBJ

       'Yesterday I burned firewood and tonight I will burn it again' (same wood)

The data in (168) suggests that the scope of 'again' is dependent on the particle that is combined with *jup*. I do not find evidence that head-marking limits the scope of 'again' modification.

   To test the limits of definiteness underspecification in O'dam, I asked my consultants

to imagine they were in a murder/mystery game, in which they were the detective and a haughty serial killer was sending them notes telling them about who they were going to kill that night. My consultants were then asked whether the notes sounded odd if the killer had not also sent them a list of possible victims (i.e. if the victims were familiar), or if the note was still acceptable if they had no knowledge of the possible victims. I chose a serial killer situation because the verbs *mukia'∼ko'ya'* 'die.SG/PL' and *mu'a'∼kooda'* 'kill.SG/PL' supplete for verbal number (Thornton 2015; Veselinova 2006). This allowed me to control for subject and object number independently of the subject and object co-indexation. First we see in (169) that the lack of an overt DP does not require a definite or familiar interpretation. The verbal suppletion and the primary object marking express that either a singular or plural object. My consultants said that the speaker sounds a bit cryptic, but neither utterance requires familiarity with the potential victims.

(169) a. *Xib   dhi   tukaa'   Ø-mu'a-'-iñ*
          now   DEM.PROX   night   3SG.PO-kill.SG-IRR-1SG.SBJ

       'I will kill (one) tonight'

       b. *Xib   dhi   tukaa'   ja-kood-a'-iñ*
          now   DEM.PROX   night   3PL.PO-kill.PL-IRR-1SG.SBJ

       'I will kill (>1) tonight'

In terms of a familiarity implicature, there is no difference between the transitive *mu'a'∼kooda'* 'kill.SG/PL' and the intransitive *mukia'∼ko'ya'* 'die.SG/PL.' While the speaker sounds cryptic, both utterances in (170) are acceptable if the hearer has no familiarity with the possible victims.

(170) a. *Xib   dhi   tukaa'   muki-a'*
          now   DEM.PROX   night   die.SG-IRR

       '(One) will die tonight'

       b. *Xib   dhi   tukaa'   ko'y-a'-am*
          now   DEM.PROX   night   die.PL-3PL.SBJ

       '>1 will die tonight'

Likewise, preposing the subject of the intransitive, as in (171) maintains the under-

specified familiarity implicature. My consultants offered two acceptable locations for the preverbal subject in (171), however, neither affects the interpretation of the subject.

(171) | *Xib* | *{am}* | *dhi* | *tukaa'* | *{am}* | *ko'y-a'* |
| --- | --- | --- | --- | --- | --- |
| now | 3PL.SBJ | DEM.PROX | night | 3PL.SBJ | die.PL-IRR |

   '>1 will die tonight'

In (171), I only showed a preposed subject for *ko'ya'* 'die.PL'. Because the singular 3SG subject marker is always null, it was not possible to prepose it. When I used the *dhi'* demonstrative, as in (172a), only the definite interpretation is possible. This follows from the use of the demonstrative and it is not evidence that a preposed subject is any different in its specification of definiteness from a suffixed subject. We see further evidence for this using the demonstrative *dhi'* with the preposed 3PL subject marker. The sentence in (172b) matches the interpretation of (172a), the subject must be familiar. However, (172b) contrasts with (171), where the lack of the *dhi'* demonstrative allows for the subject to have underspecified definiteness.

(172) a. | *Xib* | *dhi* | *tukaa'* | ***dhi'*** | *muki-a'* |
| --- | --- | --- | --- | --- |
| now | DEM.PROX | night | DEM.PROX | die.SG-IRR |

   'S/he will die tonight'
   #One will die tonight

 b. | *Xib* | *dhi* | *tukaa'* | *dhi'-am* | *ko'y-a'* |
| --- | --- | --- | --- | --- |
| now | DEM.PROX | night | DEM.PROX-3PL.SBJ | die.PL-IRR |

   'They will die tonight'
   #> 1 will die tonight

García Salido (2014) proposes that the free form of the third person singular and plural subject markers are *dhi'/gui'* and *dhi'am/gui'am*, respectively.[34] However, the change in interpretation from (171) to (172b) strongly suggests that the demonstratives are modifying the subject markers, but are not themselves part of the subject markers. The demonstrative in (172b) adds a demonstrative component to the interpretation of the subject, but the subject can be preposed without that demonstrative, as we saw in (171). The same would

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[34]Willett (1991: §11.21 & 11.24) is non-committal about whether or not the demonstrative components are part of the topicalized third person subject markers.

presumably be true for the 3SG subject marker, however, its null phonological realization makes it impossible to say where a 3SG subject marker appears in any given clause.

Thus far, I have focused exclusively on cases where overt and covert nominals have their definiteness determined by the larger discourse context. However, I do find cases of derived verbs where definiteness seems to be imposed on the derived object. In §3.2.8.4, I will discuss these cases and show that they can also be explained by a purely pragmatic analysis of definiteness in O'dam. The larger point is that O'dam lacks interpretive differences between overt and covert nominals.

3.2.8.4 The definiteness imposition is pragmatic

The one place where the definiteness imposition does seem to arise in O'dam is applied objects of applicativized verbs. This is shown in (173), where the beneficiary must be interpreted as definite.[35] Likewise, a DP or relative clause referring to the beneficiary must be interpreted as definite, as in (174a) and (174b), respectively. Recall in §3.2.8.1 I showed that singular DPs could generally be interpreted as kind-referring. However, such a reading is not possible for the DP in (174a) nor the relative clause in (174b).

(173)   *Kabuimuk*   *Ø-bopkuñ-dha-'-iñ*
        tomorrow   3SG.PO-wash.PL-APPL-IRR-1SG.SBJ

        'Tomorrow I am going to wash (clothes) **for her/him/#people**

(174)   a.   *Kabuimuk*   *Ø-bopkuñ-dha-'-iñ*   [*gu*   *maar*]$_{DP}$
            tomorrow   3SG.PO-wash.PL-APPL-IRR-1SG.SBJ   DET   offspring

            'Tomorrow I am going to wash (clothes) for **the child/#for children**

     b.   *Kabuimuk*   *Ø-bopkuñ-dha-'-iñ*   [*na*   *mu*   *oilhia'*]$_{RC}$
            tomorrow   3SG.PO-wash.PL-APPL-IRR-1SG.SBJ   SUB   DIR   live

            'Tomorrow I am going to wash (clothes) for **her/him who lives there/#whoever lives there**

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[35]The suppletion of *bakuañ-dha~bopkuñ-dha'* 'wash something for someone.SG/PL' is triggered by the number of the patient. The trigger is the same as for the non-applied forms of this verb *bakuana'~bopkuna'* 'wash something.SG/PL'.

While the default interpretation of the beneficiary of *bakuañdha'~bopkuñdha'* 'wash something for someone.SG/PL' is definite, overt DPs and quantifiers can cancel this interpretation and induce an indefinite interpretation. Notice in (175a) that the beneficiary is singular, but there is no definite referent. Likewise, in (175b) the numeral quantifier *gok* 'two' can be interpreted as 'several' (see Willett (1991: 85ff)) without referring to any definite set of referents. We also see in (175) that quantifiers can cancel the default definite interpretation regardless of whether there is an overt or covert nominal.

(175) a. *Kabuimuk*   ***dɨlh***   *Ø-bopkuñ-dha-'-iñ*   ***ma'n***   *gu*   *maar*
           tomorrow   only   3SG.PO-wash.PL-APPL-IRR-1SG.SBJ   one   DET   offspring

       'Tomorrow I will only wash (clothes) for one child' (i.e. I will not wash clothes for more than one child)

       b. *Kabuimuk*   ***gok***   *ja-bopkuñ-dha-'-iñ*
           tomorrow   two   3PL.PO-wash.PL-APPL-IRR-1SG.SBJ

       'Tomorrow I am going to wash (clothes) for several people'

While the applied object for a verb like *bakuañ-dha'~bopkuñ-dha'* has a default definite interpretation, the non-applied object does not change its interpretation. The DP *gu jajannulh* 'clothes' can be interpreted either indefinitely (i.e. the speaker will wash some indefinite set of clothing) or definitely (i.e. the speaker will was some discourse-old set of clothing). While my consultants had a strong preference for the beneficiary as the primary object, there is no difference in the definiteness interpretation if the patient is the primary object, as in (176).

(176) *Kabuimuk*   *Ø_j/ja_i-bopkuñ-dha-'-iñ*   *[gu*   *ja~jannulh]_i*
       tomorrow   3SG.PO/3PL.PO-wash.PL-APPL-IRR-1SG.SBJ   DET   PL~cloth

       'Tomorrow I am going to wash clothes (indefinite amount) for her'
       'Tomorrow I am going to wash the clothes (familiar set) for her

Likewise, the non-applied object in (177) can be interpreted definite or indefinite if there is no overt nominal.

(177) *Kabuimuk*   *Ø-bopkuñ-dha-'-iñ*
       tomorrow   3SG.PO/3PL.PO-wash.PL-APPL-IRR-1SG.SBJ

       'Tomorrow I am going to wash things for her'
       'Tomorrow I am going to wash it for her

Thus, for *bakuañ-dha'*~*bopkuñ-dha'* 'wash.SG/PL for someone' the applicative seems to introduce a participant that is interpreted as definite unless a co-referring nominal or quantifier explicitly cancels that interpretation. Nie (2019) has argued that applicatives in Tagalog impose definiteness on their associated object because those applied objects are licensed in a structurally higher position, above the *v*P on her analysis. Such a proposal for O'dam would mean that somehow arguments licensed or introduced by applicatives are syntactic and semantically distinct from all other types of arguments in O'dam, because they could have definiteness imposed. However, an alternative analysis, which I argue for here, is that the applied and non-applied forms of the verb are minimally different such that the use of the applied verb form places pragmatic focus onto the applied object. If nothing explicitly says otherwise, the focused object is interpreted as familiar and definite.

One way that a linguistic element can gain meaning is in its relationship to other similar elements, what Katzir (2007) calls 'structural alternatives' (see also Fox & Katzir 2011; Hawkins 1991; Katzir 2013, 2014, and Carston 2022). For example, Heim's (1991) notion of *maximize presupposition*, shown in (178), allows us to analyze a linguistic unit S based on its relationship to another unit S', so long as S and S' share the same assertive component about the world.

(178) **Maximize Presupposition** (Schlenker 2012: 393)
If a sentence S is a presuppositional alternative of a sentence S' [...] and the context C is such that:

   a.   the presuppositions of S and S' are satisfied within C;

   b.   S and S' have the same assertive component relative to C;

   c.   S carries a stronger presupposition than S' then S should be preferred to S'

As Collins (2016) notes, the definition in (178) makes certain variants of a sentence automatically alternatives. For example, both sentences in (179), from Collins (2016: 83) make the same assertion: Karlos discovered some y which was a moon. However, (179b) presupposes there is some moon that is unique in the discourse context, $\exists!x[moon(x)]$. The choice then for a speaker to use the indefinite in (179a) generates an implicature that the moon Karlos discovered was *not* unique. If the moon was unique then the speaker would use the

presuppositionally stronger alternative in (179b).

(179) a. Karlos discovered a moon $\rightsquigarrow \exists y[moon(y) \land discover(y)(k)]$

   b. Karlos discovered the moon $\rightsquigarrow \exists y[moon(y) \land discover(y)(k)]$
      (Collins 2016: 83)

Collins (2019) shows that Maximize Presupposition can explain implicatures associated with voice morphology in Tagalog. Voice morphology in Tagalog is based on which verbal argument is assigned nominative case, and essentially acts as the grammatical subject. In (180) we see two sentences which differ only in their pivot. In (180a) Agent Voice indicates that the agent is the pivot, while Patient Voice makes the patient the pivot, the speaker and author, respectively. Both sentences in (180) make the same assertion: the speaker met some author of some discourse salient book. However, Collins (2016) points out that the common ground knowledge that books generally have authors makes the sentences in (180) compete on presuppositional grounds. Patient Voice presupposes that the patient is definite in the discourse context, similar to *the* in (179b). Thus, the use of Active Voice in (180a) suggests that the uniqueness presupposition associated with definiteness is false, which generates the presupposition that this particular book has multiple authors. If the book only had one author then we would expect the presuppositionally stronger Patient Voice in (180b).

(180) a. *naka-kilala   ako   [ng   may-akda   ng   aklat   na   iyon]*
           AV-meet   NOM.1SG   GEN   author   GEN   book   LK   that

      'I met an author of that book' $\rightsquigarrow$ *multiple authors*

   b. *na-kilala   ko   [ng   may-akda   ng   aklat   na   iyon]*
       PV-meet   GEN.1SG   NOM   author   GEN   book   LK   that

      'I met the author of that book' $\rightsquigarrow$ *one author*   (Collins 2016: 92)

In contrast, the sentences in (181) make the same assertion, $\exists y[fish(y) \land catch(y)(h)]$, but they do not necessarily compete on Maximize Presupposition grounds. Unlike books without authors, Hangdangaw could reasonably be fishing in a spot without any known large fish. The use of Patient Voice simply contains the presupposition that the large fish is somehow definite, so that the large fish could be definite by virtue of being familiar. In such a case, the use of Agent Voice lacks the definiteness presupposition of Patient Voice but it does not

126

imply that there are other large fish in the pond, because the large fish could be indefinite for reasons other than uniqueness. Thus, structural alternatives must be minimally distinct in both their shared assertion and in the real world knowledge surrounding that assertion (e.g. that all books have authors but not all ponds have large fish)

(181) a. *Isang   araw   naka-huli   si   Hangdangaw [ng   malaking   isda]*
           one.LK   day   AV-catch   NOM   Hangdanaw   GEN   fish

           'One day, Hangdangaw caught a large fish' ¬ ⤳ *there are multiple large fish*

       b. *Isang   araw   na-huli   ni   Hangdangaw [ang   malaking   isda]*
           one.LK   day   PV-catch   GEN   Hangdanaw   NOM   fish

           'One day, Hangdangaw caught the large fish'

Using Katzir's (2007) notion of structural alternatives then, there is something particularly notable about the alternation between the base and applicativized forms of O'dam 'wash'. Specifically that the difference between them is only the beneficiary introduced by the applicative, as shown in (182). Intuitively, they make the same assertion (a person washes something), but the applied form in (182b) presupposes that the washing is being done to benefit someone.

(182) a. *bakuana'∼bopkuna'* 'wash something.SG/PL'

       b.   *bakuañ-dha'∼bopkuñ-dha'* 'wash something.SG/PL for someone'

van Valin & LaPolla (1997: §7.3.2.2) supports the intuition about the beneficiary stated above. They propose that beneficiaries do not add to the assertive content of a predicate. Instead, they simply add a presupposition, namely that the event was done in order to bring about some effect on the beneficiary.

Consider the three types of beneficiaries (van Valin & LaPolla 1997; Zúñiga & Kittilä 2010), shown in (183) using the English *for* benefactive construction.[36] The utterance in (183) is true so long and Robin baked a cake. On a recipient reading of the *for* phrase, Sandy was intended to gain possession of the cake. However, we see in the continuation in (183a)

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[36]I am excluding malefactives here because they are not relevant to O'dam. As I discuss in §5.4, O'dam seems to treat malefactives a a subtype of Plain benefactive; one where the event is intended to harm rather than help someone.

that the utterance in (183) does not assert that Sandy was ever going to actually receive the cake. Likewise, the plain[37] and deputative interpretations of the *for* phrase do not assert that Sandy was benefitted by the action. They only presuppose that Robin did the baking event motivated by benefiting Sandy.

(183)   Robin baked a cake for Sandy

    a.   Recipient benefactive: [to give it to her]
        '...but she knew Sandy would never come by to pick it up.'

    b.   Plain benefactive: [to show her she could do it, to amuse her, etc.]
        '...and she knew that Sandy would never know'

    c.   Deputative benefactive: [so that she wouldn't have to]
        '...but she knew Sandy was always going to bake one herself'   (van Valin &
        LaPolla 1997: 384)

Benefactives are in some ways quite unique as thematic roles. They have a relatively loose connection with the predicate they are associated with. The inclusion of a recipient benefactive generates a entirely new (prospective) transfer of possession event that was not entailed by the predicate it is added to. Plain and deputative beneficiaries are even stranger because their participant is simply not associated with any event whatsoever. A plain beneficiary simply needs to benefit somehow from an event (e.g. lighting a candle for the dead). A deputative benefactive expresses that the event was specifically done so that they would not have to (I mowed the lawn for my mother on Mother's Day). Following Heim's (1991) Maximize Presupposition, especially as formulated by Schlenker (2012), applicatives which introduce a beneficiary automatically cause the applied form to be a structural alternative. If a base and applied verb form differ only in the introduction of a beneficiary, then they assert the same event and only differ in that the base form is acceptable in a context where the event was done for no reason.

    Turning back to O'dam, the *-dha* applicative adds a deputative beneficiary to *bakuana'∼bopkuna'* 'wash', shown in (184). Thus, the beneficiary is analogous to the one in (183c), where Rosa will do the washing event so that the 2SG beneficiary does not have

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[37]Kittilä & Zúñiga (2010) notes that a plain beneficiary is a more nebulus class, essentially consisting of any beneficiary that is not a recipient or deputative beneficiary.

to. Notice that the adverbial *jaxpɨx* 'no reason' is not felicitous in the sentence in (184). Likewise, in (185b), the beneficiary cannot be explicitly negated using *cham jaroi'* 'no one'.

(184) *Jum-bakuañ-dha-'*   *sap*   *dhi*   *Roosa*   *gu=m*   *ipuur*
      2SG.PO-wash-APPL-IRR   EVID.DIR   DEM.PROX   Rosa   DET=2SG.POSS   skirt

      dhi'   *na=t*   *ka*   *bii*
      DEM.PROX   SUB=PFV   still   remain.PFV

      'Tell Rosa to wash your dress for you, the one that still has not been washed' (Willett & Willett 2015: 16)

(185) a. *#Jaxpɨx*   *jum-bakuañ-dha-'*   *sap*   *gu=m*   *ipuur*
         no.reason   2SG.PO-wash-APPL-IRR   EVID.DIR   DEM.PROX   Rosa

         dhi'   *na=t*   *ka*   *bii*
         DET=2SG.POSS   skirt   DEM.PROX   SUB=PFV

         Intended: Tell Rosa to wash your dress for no reason, the one that still has not been washed.

     b. *#Cham* *jaroi'*   *Ø-bakuañ-dha-'*   *sap*   *dhi*   *Roosa*
         NEG   someone   3SG.PO-wash-APPL-IRR   EVID.DIR   DEM.PROX   Rosa

         Intended: Tell Rosa to wash it for no one

The beneficiary introduced by the applicative is part of the purpose of the event; a verb form that licenses an applicative is not compatible with a world in which the event was done for no reason. In simple terms, the choice of uttering the applied for *bakuañ-dha'∼bopkuñ-dha'* over the base form signals something discourse-relevant about the beneficiary.

A speaker selecting the applied form of 'wash' over the base form, therefore, places pragmatic focus on the beneficiary, because the core event denoted by the base and applied forms are the same. The default definite interpretation then follows from the general relationship between information structure and definiteness (Erteschik-Shir 2013; Leonetti 2016). Looking across all uses of applicatives, a pragmatic explanation for definiteness imposition on applied objects is even stronger, in contrast to the structural explanation of Nie (2019). Applicatives in O'dam have three major functions in the type of argument they introduce/licence: 1) benefactive object; 2) promoted object; and 3) agent subjects. I discuss the behavior and function of O'dam applicatives in further detail in Chapter 5. The definiteness

properties discussed for *bakuañ-dha'∼bopkuñ-dha'* 'wash.SG/PL for someone' generally hold for other verbs that gain beneficiaries, as shown in (186).

(186)   a.   Deputative
   Gu   *Juana*   *u'ua'nxi*   *dhi*   *karta*
   DET   Juana   write.APPL.PFV   DEM.PROX   letter

   'Juana wrote this letter **for her/him**'

   b.   Plain
   Gam-dha-'-iñ   *mochila-ta'm*
   put.inside-APPL-IRR-1SG.SBJ   backpack-inside

   'I put it inside the backpack **for her/him**

   c.   Recipient
   Saasbi-ñi-ch   *gu*   *banda*
   play.music.APPL.PFV-1SG.SBJ-PFV   DET   band

   'I played Banda **for her/him**'

One informative exception where the benefactive object introduced by the applicative does not have a default definite reading is the verb *diinia'* 'smoke (pipe)'. We see in (187), the applied form has an idiomatic reading of 'cure, heal someone.' The base and applied forms shown in (187) not only differ on the presupposition of a purpose for the event, they also denote slightly different events. The base form in (187a) is acceptable for any case of pipe smoking.[38] In contrast, the applied form (187b) is used to express a curing event. Curing ceremonies held by O'dam curanderos often involve the curandero performing a range of actions including smoking and the verb form *diinki-dha'* denotes an event containing all aspects of a curing ritual (Reyes Valdez 2015). Thus, the distinct character of a curing event from a general smoking event means that the base and applied forms in (187) are not structural alternatives, they are for all intents and purposes entirely separate verbs.

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[38]Some of my consultants accept the verb *dii'nia'* for someone smoking a cigarette or cigar, but most of my consultants only accept the verb with a pipe instrument and prefer the Spanish verb *fumar* 'smoke' for cigarettes and cigars.

(187) a. *dɨɨ'nia'* 'smoke (pipe)'
    Gammɨjɨ   *tɨ-dɨɨn-da'*   *gu=ñ*   *o'kix*   *gu*
    always   DUR-smoke-CONT   DET=1SG.POSS   mother's.older.sister   DET

         bib   *duiñkar-ta'm*
         tobacco   pipe-inside

    'My aunt always smokes tobacco from a pipe' (Willett & Willett 2015: 52)

    b. *dɨɨnki-dha'* 'cure (someone)'
    Tɨ-dɨɨnki-dha-m   *gu*   *makgɨm*   *mu*   *ja'k*   *taatsab.*
    DUR-smoke-APPL-PROG   DET   curandero   DIR   DIR   hot.earth

    'The curandero went to tierra calida to cure (someone/people)' (Willett & Willett 2015: 51)

As with verbs that gain a benefactive object when combined with an applicative, applied objects are by default interpreted as definite when they are promoted semantic participants of the base verb. We see in (188) that the base and applied forms differ in their acceptability with the continuation *na ba' cham jaroi tɨgia'* 'so that no one will find it'. The base form in (188a) is acceptable because the person being hidden from has no default interpretation, see §5.2. In contrast, the applicativized form in (188b) sounds odd; my consultants commented that (188b) sounded like you are hiding the cheese both from the one person and from everyone. Note that my consultants also reported that the sentence in (188b) is not felicitous if you are hiding the cheese from everyone but particularly know that the one person will give it away.

(188) a. *Mi'*   *ɨxchoi-'-iñ*   *gu=m*   *kiis*   *na*   *ba'*
    PROX.LOWER   hide.INAN-IRR-1SG.SBJ   DET=2SG.POSS   cheese   SUB   SEQ

         cham   *jaroi'*   *tɨgi-a'*
         NEG   someone   see-IRR

    'I am going to hide your cheese here so that no one can find it'

    b. #*Mi'*   *ɨxchoi-dha-'-iñ*   *gu=m*   *kiis*   *na*   *ba'*   *cham*
    PROX.LOWER   hide.INAN-APPL-IRR-1SG.SBJ   DET   cheese   SUB   SEQ   NEG

         jaroi'   *tɨgi-a'*
         someone   see-IRR

    'I am going to hide your cheese here **from him** so that no one can find it'

Importantly, 'hiding' events are known to have a stimulus. My consultants find the use of

ɨxchoi' 'hide.INAN' odd in a context where the patient is not being 'hidden from' anything or anyone.[39] We will also see in §5.2 that the behavior of the applicative in (188b) suggests that the stimulus is a latent argument of the verb. The base and applied forms in (188) assert that an agent is hiding a patient from some stimulus. However, because the stimulus is licensed as an argument in the *ɨxchoi-dha'* 'hide something from someone,' the applied form introduces a presupposition that the stimulus (the applied object) is somehow unique in the discourse. Without a DP elaborating on the 3SG applied object (the stimulus), the hearer reasons that the stimulus in (188b) must be familiar (i.e. definite).

In contrast to the cases where applied objects have a default definite interpretation, subjects introduced by the applicative do not have a default definite interpretation. For example, in contrast to *ɨxcho'* 'hide.INAN', for which the applicative promotes a participant to object, the animate form *o'ñcho'* 'hide.ANIM' combines with the *-dha* applicative to gain an external agent subject. Notice that for the applicatived form *o'ñxi-dha'* 'hide something', the subject or object can be interpreted as definite or indefinite, shown in (189a) and (189b) respectively.

(189) a. *Bhammɨ*   *sap*   *ja-o'ñxi*   *gu*   *ka~kasnir*
           DIST.HIGHER   REP.UI   3PL.PO-hide.ANIM.APPL.PFV   DET   PL~sheep

           'Supposedly (the) sheep were hidden up over there'

       b. *Gammɨjɨ*   *sap*   *tu-o'ñxi-dha-'*   *bhammɨ*   *tua-tɨr*
           DIST.HIGHER   REP.UI   DUR-hide.ANIM-APPL-IRR   DIST.HIGHER   tree-between

           'Supposedly she always hides/loses things.ANIM in those oaks up over there'
           'Supposedly, people always hide/lose things.ANIM in those oaks up over there

We can again explain the lack of definiteness imposition on subjects using a pragmatic analysis of definiteness. The base and applied form in (189) do not make the same assertion. The base form of *o'ñcho'* 'hide.ANIM' asserts that some animate participant is hidden, either by its own actions or an external agent, while the applied form in (189b) asserts that some external agent hid some animate patient. As we saw for *dɨɨ'nia'* 'smoke (pipe)' and its applied

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[39]My consultants also judged Spanish *esconder* 'hide, conceal' odd in the same context, where there is no one the patient is being hidden from.

form *diɨnki-dha'* 'cure (someone),' the two forms of 'hide.ANIM' simply are not structural alternatives. Definiteness is not imposed on the applied subject because the hearer cannot reason that the selection of the applied form in (189) is due to a familiar or unique agent.

Returning to the prediction of the Pronominal Argument Hypothesis. There are no interpretive differences between overt and covert DPs. The strong PAH, that argument slots are saturated by true pronouns, does not hold for O'dam. The 3SG and 3PL head-markers in O'dam do not show any of the imposition properties of lexical pronouns in other languages (i.e. specificity, definiteness, etc.). To the extent that head-markers in O'dam are pronominal, in the strong sense, it is only the 1st and 2nd person head-markers, which refer to speech act participants, not the 3rd person markers. However, whether or not a given participant or dependent in an utterance is definite seems to be a judgment imposed from the outside. O'dam grammar does not differentiate between definite and indefinite. The determiner *gu* allows for individual readings to be construction, as we saw in §3.2.8.1 and §3.2.8.2. However, *gu* is entirely compatible with an indefinite reading of the DP it heads, without any modification. Likewise, covert nominals have their definiteness determined by pragmatic context.

This section raises an issue for the PAH and those who criticize it: if definiteness is not part of O'dam grammar, why would we expect pronouns to make the same semantic impositions on their referents as languages whose grammar does include definiteness? I believe the answer to this question depends on what exactly a pronoun is. If pronouns are strongly contentful (for example the PRED = PRO view from LFG; Bresnan & Mchombo 1987), then the 3rd person head-markers in O'dam are not pronouns, following Evans (1999) and Coppock & Wechsler (2012).[40] However, if pronouns are more appropriately analyzed as stand-ins for nominals (as per Déchaine & Wiltschko's 2002 decompositional approach), then the 3rd person head-markers show all of the properties of a noun in the language (see Matthewson 2008 for discussion of cross-linguistic variation in the meaning of pronouns). I leave answering this question for future work, as we saw in Table 3.2, I judged this property as X/? for O'dam. The head-markers do not act like lexical pronouns, however, the

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[40]The 1st and 2nd person head-markers in O'dam are not at issue here. Because they refer to speech act participants, they are pronouns on any view.

lack of definiteness in O'dam grammar makes it unclear whether definiteness should even be considered a property of its pronouns.

A notable takeaway for the argument-adjunct distinction in this section is that the special, core, connection between a verb and its arguments seems to allow a verb form itself to pragmatically restrict its arguments. I have found no instances where the selection of one verb form over another itself pragmatically contextualizes its adjuncts. Where two verbs are structural alternatives (i.e. have the same assertive content) and differ in one syntactic argument, the marked verb form presupposes something unique about that syntactic argument. It is not entirely clear how structural alternative verb forms could pragmatically restrict an adjunct, because the syntactic status of that adjunct is, be definition, unchanged across the compared verb forms. Thus, definiteness imposition in O'dam seems to be quite limited diagnostic of argumenthood; it can only diagnose specific types of derived objects. Nonetheless, it does comport with the intuitions surrounding argumenthood, namely that the definiteness imposition results from the specific syntactic relationship between a verb and the arguments it selects for.

3.3 The predictions of the Pronominal Argument Hypothesis and some open questions

We saw in this chapter that the surface facts of O'dam argumenthood diagnostics, discussed in §3.1, show properties of a Pronominal Argument Language. In §3.2, I tested those predictions and present the results in Table 3.7, repeated from Table 3.2. We see that O'dam patterns significantly with the predictions of Jelinek's (1984) Pronominal Argument Hypothesis. Of the 16 predicted properties of a Pronominal Argument Language, minus superiority effects because they are untestable, O'dam has 12. The properties that O'dam fails on, in terms of the PAH, apply both to the XP dependents and their co-referencing head-markers. The presence of adjunct island effects and Principle C effects suggests that XPs expressing arguments and adjuncts are not structurally symmetrical. Likewise, the properties of covert XPs and the lack of full agreement paradigms, which I will discuss below, suggest that a) the

head-markers are not equivalent to pronouns in other languages; and b) the head-markers themselves do not saturate argumenthood slots in the language. More broadly, Table 3.7 suggests that syntactic dependents in O'dam are only weakly differentiated and it leaves open the question of what actually saturates argument slots.

Property	O'dam
Optional overt DPs	✓
No argument-adjunct word order distinctions	✓
No DP anaphors	✓
No DP-movement	✓
No infinitives	✓
No VP elipsis	✓
No pro-VPs	✓
No clitic doubling	✓
TAM invariant pronouns	✓
No superiority	N/A
No adjunct island effects	X
No Principle C effects	X
Disagreement freely allowed between pronoun and associated DP	✓
No VP coordination	✓
Verbal agreement is pronominal in nature	X/?
No weak crossover	✓
Full and obligatory agreement paradigms	X

Table 3.7: Repeat: Properties of a Pronominal Argument Language found in O'dam

More troublingly, head-marking is still the only useful argumenthood diagnostic in O'dam and I have not yet motivated how it underpredicts the valency of ditransitive verbs (namely, head-marking treats them as transitive). In order to do so we need argumenthood diagnostics aside from head-marking. In Chapters 4 and 5, I will provide those exact argumenthood tests and show that O'dam verbal agreement paradigms are not full; non-coreferenced objects (secondary objects) are full syntactic objects, contra the PAH. Along with the findings in this chapter, we will see that O'dam does distinguish grammatical functions in a way that aligns with the traditional argument-adjunct distinction. However, O'dam does not instantiate the argument-adjunct distinction in a canonical way.

Chapter 4

Secondary Objects and entailed goals as arguments versus adjuncts

In Chapter 3 I showed that most of the standard argumenthood tests fail to give a conclusive result for O'dam XPs. I would now like to zoom in on two special cases that are especially difficult to categorize based on standard argumenthood tests: secondary objects and entailed goals. We will see that these cases are not differentiated by head-marking, which marks neither, but we will see that they are differentiated. I will propose language specific argumenthood tests: preverbal quantification and applicativization, which I will discuss in §4.2.1 and Chapter 5. These tests will make a binary distinction among dependents that overlaps with head-marking, albeit not perfectly. The set that I will call 'arguments' exclusively consists of participants entailed by the predicate, thus passing Koenig et al.'s (2003) Semantic Obligatoriness Criterion, while the set of what I call 'adjuncts' will contain all non-entailed participants. As expected for tests of syntactic argumenthood, we will see that not all entailed participants will be in the set of arguments defined by each test, nor all head-marked participants. Crucially, we will see that secondary objects and entailed goals consistently fall into the different grammatical function groups: secondary objects will consistently appear in the argument set, while entailed goals will consistently appear in the adjunct set.

As mentioned in Chapter 3, O'dam verbs only co-reference one object. For ditransitives, the object lacking co-reference is called the secondary object. Because secondary objects lack co-reference and all XPs in O'dam are optional, secondary objects, therefore, lack any sort of syntactic obligatoriness whatsoever. Notice in (190) that the verb *jupñidha'*∼*jupxidha'* 'take out (from inside something) for someone.SG/PL' that the plural patient *gu jajoi'* lacks

a coreferring 3PL *ja-* object prefix on the verb. Instead, the verb only co-references the 1SG beneficiary.

(190) Secondary Object
Mi'	*dhɨr=ap*	*jiñ-jupxi-dha-'*	***gu***	***ja~joi'***
PROX.LOWER	from=2SG.SBJ	1SG.PO-take.out.PL-APPL-IRR	DET	PL~thorn

por pabor
please

‘Please take the thorns out of there for me’ (adapted from Willett 1991: 196)

Previous work has generally assumed that *gu jajoi'* ‘thorns’ in (190) is a secondary object, as opposed to an adjunct, because the verb entails the patient, as shown in (191) (Willett 1991). The verb *jupñidha'~jupxidha'* ‘take out (from inside something) for someone.SG/PL’ is especially straightforward because it is applicativized and the base form *jupna'~jupsa'* ‘take out (from inside something).SG/PL’ does co-reference the patient as an object, as shown in (192).

(191)
Taxchaab	*Jose*	*na=p-gu'*	*mi'*	*dhɨr*
Thank.you	José	SUB=2SG.SBJ-ADVR	PROX.LOWER	from

jiñ-jupñi
1SG.PO-take.out.APPL.PFV

‘Thank you Joseé for taking **it** out of me’ (something must have been removed)

(192)
Jiñ-palhbuidha-'-ap	*añ*	***ja-juupsa'***	***dhi***	***u'~uux***	*jai'=ñ*
1SG.PO-help-IRR-2SG.SBJ	1SG.SBJ	3PL.PO-take.out.PL	DEM	PL~stick	other.PL

mi	*ja-chuttu-'*
PROX.LOWER	3PL-stand.INAN-IRR

Help me take out these posts, I am going to put in others’

Assuming that applicativization always monotonically builds on the base verb allows us to say that the patient was not demoted to oblique/adjunct status (Jerro 2023). However, while the applicativization adds a new participant, verbal co-reference alone suggests that there is no valency distinction between the base and applied forms in (191) and (190), they both appear to be transitive. We will see in Chapter 5 that verbal co-reference underpredicts the verbal arguments of O’dam and that applicativization always increases the valency of the

base verb.

Standard 3-place predicates like 'give' run into the same problem. We see in (193) that the object marking on the verb only co-references the 3PL recipient and not the 3SG theme. However, unlike *jupñidha'~jupxidha'* 'take out (from inside something) for someone.SG/PL', the verb *makia'* 'give' is a base verb form, there is no morphologically simpler form to assume has been monotonically built upon. Where we will be able to appeal to the applicativization in (190) as evidence that the patient is a syntactic object, such evidence offers us nothing for the theme of *makia'* 'give'.

(193)   *Bhammɨ*   **ja-***makia'-ap=a*   **gu**   **juun**
        DIST.HIGHER   3PL.PO-give-2SG.SBJ=Q   DET   corn

        'Did you give the corn to them over there?'

If verbal co-reference is the only argumenthood diagnostic, then we must propose that O'dam has a strict constraint against ditransitive structures. The existence of base-applicative pairs could allow us to say that O'dam only allows *derived* ditransitives. However, I will argue that O'dam shows evidence of both basic and derived ditransitive verbs. The vast majority of O'dam's ditransitive verbs are, in fact, derived through applicativization. However, the language does have morphologically simple ditransitives, such as *makia'* 'give' in (193). Starting in §4.1, I will show that secondary objects can be defined on a first pass by their status as potential primary objects. We will see in §4.2.1 and Chapter 5 that secondary objects act symmetrically to primary objects and subjects with regards to argumenthood tests other than verbal co-reference.

As a contrast to secondary objects, I will use entailed locatives. Locatives in O'dam are always expressed as locative phrases, as in (194a), or preverbal locative particles, as in (194b). Like secondary objects they are also never co-referenced on the verb, as in (195). While secondary objects can be freely expressed covertly in a clause, I find that speakers judge certain motion verbs odd without a locative referring to a goal. In (194) and (195) the bolded locatives must be interpreted as referring to a particular location, either the goal in (194) or the location in (195).

(194) a. *Jai'*   *kɨk*   *gu*   *tak*   *gu*   *jaroi'*   *muua-k*   *[sap*
         other be.standing.SG   DET   INFR   DET   someone kill.SG-PNCT   REP.UI

         bhai_{*Loc*}   *xi-bua-k]*_{*CP*}
         DIR   IMP-throw.SG-PNCT

         'It was stacked, I think someone killed it and must have thrown it there'
         (Text_092010_TSC_GGS_nar ilhich ka', 01:29)
         #it was thrown from there
         #it was thrown past there

      b. *Añ*   *bua*   *gu*   *pilot*   *[mu*   *kiicham]*_{*LocP*}
         1SG   throw.SG   DET   ball   DEM.PROX   inside.the.house

         'I throw the ball **into the house**/#from inside the house/#through the house'

(195) **Ya'**=*p*   *ka-xi-ñ-nɨra*   *añ*   *mi'-ñi*   *ja'k*   *ka-jii*
       PROX=2SG.SBJ   PERF-IMP-1SG.PO-wait   1SG.SBJ   DIST-VIZ   DIR   PERF-go

       oras
       hours

       'Wait for me here. I'm going over there for a minute.' (Willett 1991: 196)

An additional location or coordination structure would be required to refer to another type
of location. Moreover, these utterances are judged as odd if the locatives are not present.
Especially for (194) the lack of a locative does not underspecify the goal, it simply sounds like
the ball goes nowhere (i.e. contradictory to the translocative motion of the verb). Locatives
then are special in that for certain verbs they are obligatory, unlike every other XP dependent
in O'dam.

Despite the obligatoriness, we will see that that all locatives, entailed or not, always
fail argumenthood tests, suggesting they are adjuncts. Instead, the obligatoriness of locatives
for certain verbs seems to stem from a strong discourse dispreference for underspecified
locations. Directedness and locations cannot be implied in a clause, thus they pragmatically
require an exponent.

4.1 Primary objecthood

Locatives, entailed or not, and secondary objects share the property of lacking verbal co-reference and lacking an obligatory exponent in most clauses. We see in (196) that the secondary object of *makia'* 'give' can acceptably be any ɸ-feature combination regardless of whether the secondary object is the theme, as in (196a), or the recipient, as in (196b).

(196) a. *Jiñ-maa=pi-ch*
           1SG.PO-give.PFV=2SG.SBJ-PFV

           'You gave [___]$_{SecondaryObject}$ to me'

       b. *Ja-maa=pi-ch*
           3PL.PO-give.PFV=2SG.SBJ-PFV

           'You gave them to [___]$_{SecondaryObject}$

However, one way to distinguish between most secondary objects and entailed locatives is in their potential to be primary objects. As we see in (196), the theme and recipient can both be primary objects, albeit not at the same time, whereas locatives can never be co-referenced on the verb in any way. Thus, we can partially define a secondary object as a potential primary object. Both Willett (1991) and García Salido (2014) note that the primary object is almost always the most animate and plural of the two objects. For example, we saw in (193), repeated in (197a), that the primary object co-references the recipient argument of *makia'* 'give'.

(197) a. *Bhammɨ*   *ja-*$_{Recipient}$ *makia'-ap=a*   *[gu*   *juun]*$_{Theme}$
           DIST.HIGHER   3PL.PO-   give-2SG.SBJ=Q   DET   corn

           'Did you give the corn to them over there?'

While this seems to be the tendency, many verbs allow variation in the thematic role their primary object prefix co-references. For example, in (198), the theme is the primary object, while the recipient is the secondary object. My consultants commented that the sentence in (198) sounded best if the theme was in focus or if there was a continuation that centered on the theme (e.g. "and then they will stay there until I pick them up"). So while animacy and number seem to be the main determiners of primary objecthood, there also seems to be a connection to information structure.

(198) Ja_Theme-   maki-a'-iñ   [gu   pegro]_Recipient
      3PL.PO-   give-IRR-1SG.SBJ   DET   Pedro

      'I'm going to give them to Pedro'

We see a simple illustration of the effect of information structure on primary object marking
in (199). The verb *makia'* 'give' is embedded within a subordinate clause that is a relative
clause elaborating on the theme, in (199a), and the recipient, in (199b), of *ui'dha'* 'bring.PL
to someone'. In both cases the secondary object of *makia'* 'give' is the overt theme of *ui'dha'*
'bring.PL to someone.' Thus, the secondary object has been introduced earlier in the discourse
as an overt participant. The primary object in both of these cases marks the participant that
is introduced to the discourse by the verb *makia'* 'give.'

(199) a. *Bha=ñ*   *Ø-ui-'ñ*   *gu*   *la~pis*
           PROX.MOV=1SG.PO   3SG.PO-bring.PL-APPL   DET   PL~pencil

           na=ñ   *Ø_Recipient-* *maki-a'* *gu*   *Juana*
           SUB=1SG.SBJ-ADVR   3SG.PO-   give-IRR   DET   Juana

           'Bring me the pencils that I will give to Juana'

       b. *Bha=ñ*   *Ø-ui-'ñ*   *gu*   *Juana* *na=ñ-gu'*
           PROX.MOV=1SG.PO   3SG.PO-bring.PL-APPL   DET   Juana   SUB=1SG.SBJ-ADVR

           ja_Theme-   *maki-a'*   *gu*   *la~lpis*
           3PL.PO-   give-IRR   DET   PL~pencil

           'Bring me Juana so that I can give her pencils'

Some additional evidence for the role of information structure is the verbs that do not
permit variation in their primary object marking. Specifically, these verbs are applied forms
where the applicative promotes an implicit object to full object status. One example is
the verb *ga'ra'* 'sell', which in its base form takes an agent subject and theme object. As
I will discuss more fully in §5.2, the *-dha* applicative promotes the entailed recipient to a
syntactic argument. For verbs like *ga'lhi-dha* 'sell to someone' the primary object marker
must co-reference the promoted object, in this case the recipient. We see in (200a) that the
contexts which triggered different primary object marking for *makia'* 'give', do not trigger
such variance in *ga'lhidha'* 'sell to someone.' The utterance in (200b) is only acceptable if
ga'lhidha' takes the *ja-* 3PL primary object prefix co-referencing *gu lalpis* '(the) pencils.'

141

(200) a. *Bha=ñ*   *Ø-ui-'ñ*   *gu*   *la~pis*
PROX.MOV=1SG.PO   3SG.PO-bring.PL-APPL   DET   PL~pencil

        na=ñ   *Ø~Recipient-* *ga'lhi-dha-'*   *gu*   *Juana*
        SUB=1SG.SBJ-ADVR   3SG.PO-   sell-APPL-IRR   DET   Juana

        'Bring me the pencils that I will sell to Juana'

b. **Bha=ñ*   *Ø-ui-'ñ*   *gu*   *Juana* *na=ñ-gu'*
PROX.MOV=1SG.PO   3SG.PO-bring.PL-APPL   DET   Juana   SUB=1SG.SBJ-ADVR

        ja~Theme- *maki-a'*   *gu*   *la~lpis*
        3PL.PO-   give-IRR   DET   PL~pencil

        'Bring me Juana so that I can sell her pencils'

We see this again for the speaking verb *iata'* 'lie'. In its base form in (201a) we see that the primary object co-references the theme. The *-dha* applicative combines with *iata'* 'lie' to promote the hearer to object status. We see in (201b) that the primary object marking must now co-reference the promoted hearer and cannot co-reference the theme.

(201) a. *Jum-iata-ñi-ch*
2SG.PO-lie.PFV-1SG.SBJ-PFV

        'I lied about you'

b. *Jum-iatgi'ñ-ñi-ch*
2SG.PO-lie.APPL.PFV-1SG.SBJ-PFV

        'I lied **to you**
        *I lied **about you** to her

In contrast to objects promoted by applicatives, beneficiaries can vary in their primary object status. While beneficiaries are most commonly attested as primary objects, they can surface as secondary objects. We see an example of this in (202) where the primary object marking on *nɨ'ñdha'* 'look for someone' co-references the stimulus, not the beneficiary. Of note in this discourse context is that the beneficiary is co-referenced with the subject, albeit not overtly, making the beneficiary already introduced in the clause. My consultants commented that if the primary object marking was 1SG *jiñ-* instead (i.e. co-referencing the beneficiary) the sentence would more naturally be interpreted as in (203). However, the sentence in (203) can also be synonymous with the sentence in (202).

(202)   *Añ*   *gu=x*   *bu~pui-chɨk*   *ji*   *na=ñ*   *bha=**ja**-nɨ'ñ-dha'*
           1SG.SBJ   DET=COP   PL~eye-POSSD   FOC   SUB=1SG.SBJ   DIR=3PL.PO-see-APPL

           ma'n
           one

           'I only was looking at the ugly ones **for me**.' (García Salido 2014: 80)

(203)   *Añ*   *gu=x*   *bu~pui-chɨk*   *ji*   *na=ñ*   *bha=**jiñ**-nɨ'ñ-dha'*
           1SG.SBJ   DET=COP   PL~eye-POSSD   FOC   SUB=1SG.SBJ   DIR=1SG.PO-see-APPL

           ma'n
           one

           'I only was looking at myself for the ugly ones.'

We can define secondary objects as participants which have the potential to be primary objects, given the appropriate pragmatic context. Even where applicative promotion seems to restrict primary objecthood to only the promoted object, the secondary object in those cases is still the primary object of the base verb. We can contrast secondary objects, then, to locatives. A typical ditransitive meaning is 'put'. O'dam has several verbs broadly meaning 'put' depending on the orientation of the placed object. We see in (204) that the verbs *tɨkia'* 'place horizontally' and *daas* 'seat' must receive primary object marking for their 3PL patient. They cannot take primary object marking co-referencing the goal, or for that matter, any primary object marking that does not co-reference the patient.

(204)   a. *Maik*   *ach*   *tɨ-ja-/*Ø-tɨk-pu'*   *gu*   *ka~kañdhɨr*
               EXHORT   1PL.SBJ   DUR-3PL.PO/3SG.PO-put.horizontal-MOV   DET   PL~candle

               mu   ***chiop***
               DIR   church

               'Let's go put these candles in the church!'

     b. *Tu'*   *da'-am*   *dhi'*   *na=p*   *bhai'*   *ja/*Ø-daas*
               what   be-3PL.SBJ   DEM.PROX   SUB=2SG.SBJ   DIR   3PLPO/3SG.PO-seat

               baalh-cha'm?
               basket-in

               'What are these things that you are putting in the basket?

Likewise, the verb *jimia'* 'go' is a motion verb but pluralizing the goal does not trigger plural primary object marking. Note that *jimia'* 'go' differs from 'put' verbs in that there is

no putative object to compete with the goal for primary object status. The object marking on *jimia'* 'go' simply suggests that there is no syntactic object to co-reference.

(205)   *(*Ja)-jii-mɨ-t*   *mu*   *ja'p*   *jɨ'k pɨx*   *pue'mlos*
       3PL.PO-go.PFV-3PL-PFV   DIR   DIR   some   towns

       'They went to some towns'

In this first pass, we can define secondary objects as participants that have the potential to be primary objects. In contrast, locatives in O'dam are never co-referenced. However, we have also seen that head-marking is rather weak as the sole indication of argumenthood. Namely, there is nothing to prevent someone proposing that secondary objects are not objects and that O'dam verbs simply have slight variation in their argument structure. Something is only an object if it is co-referenced. On this view, so-called secondary objects are adjuncts and entailed locatives differ from such adjuncts in that they can never be an object. In order to prove my proposal that secondary objects are true syntactic objects I need to propose argumenthood tests that do not rely on head-marking. We will see starting in §4.2 that the adjunct view of secondary objects is wrong. Secondary objects behave largely symmetrically to primary objects and subjects. All locatives, in contrast, behave like adjuncts. In regards to the PAH discussed in Chapter 3 we will see that this means that O'dam does not have full agreement on its verbs. Head-marking underpredicts the object status of secondary objects. However, we will also see in the following argumenthood tests that the postverbal XP position is not where grammatical functions seem to be distinguished. I will return to the question of where and how argument slots are saturated in Chapter 6.

4.2   Preverbal quantification

In this section I will discuss the argumenthood distinction as delineated by preverbal quantifiers. Preverbal quantifiers divide elements of the clause into things they can quantify over and things they cannot. The former group overlaps with the verbal co-reference, and as such can be viewed as arguments for this test. The latter group contains things which are not entailed by the verb and, as such, can be viewed as adjuncts for this test. However, I will

show that preverbal quantification does not fully align with the division of grammatical functions as delineated by verbal co-indexation (i.e. the subject and primary object markers). I find that secondary objects can be consistently quantified over by preverbal quantifiers, while certain common primary objects, namely certain types of beneficiaries, can never be quantified over by preverbal quantifiers. In line with all other tests, I find that locations and instruments systematically pattern with adjuncts, regardless of their semantic association with the verb. In contrast with other tests, I find that the verb itself can be quantified over from the preverbal position and, therefore is identified as an argument by this test, see also my discussion of clausal objects in Chapter **??**. Additionally, in this section I will discuss where in the syntactic structure of the clause quantification takes place. This issue more broadly relates to whether the quantifiers "float" out of the V's sublexical structure or whether they simply quantify *in situ* (i.e. without floating).

This section will proceed as follows, first in §4.2.1, I will give a brief overview of quantifiers in O'dam, including differences between constituent and preverbal quantification, their appearance in a sentence, and the different types of meanings associated with O'dam quantifiers. Next in §4.2.2 I will show the distinction of grammatical functions by the preverbal quantifiers. Finally, in §4.2.3 I discuss the status of the verb itself as patterning with arguments for preverbal quantifiers.

4.2.1 Quantifiers in O'dam

Quantifiers in O'dam are a distributionally defined class which includes numerals and non-numeric quantifiers (Willett 1991: §5.4). They can appear in one of two positions in the clause, which I will call the *constituent* position and the *preverbal* position. In the constituent position, shown in (206), the quantifier appears in the initial position of an XP. In this position, it is always continuous with the quantified expression, in this case *oidha'* 'year(s)'. In the preverbal position, shown in (207), the quantifier precedes the verb, see §2.3, and is not a constituent with the quantified expression. Both quantifiers in (207), *mui'* 'many'[1] and

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[1] While *mui'* looks similar to Spanish *muy* 'a lot', this is pure coincidence. Bascom (1965: 168) reconstructs **muʔi* 'many' for Proto-Tepiman and Hill (2020) gives two possible reconstructions for Proto-Uto-Aztecan

jai' 'other.PL', quantify over the null realized referent 'corn'.

(206)   *No'=ñ*   *jix=aa'*   *na=ñ*   *jir=makgɨm-ka-'*   ***[jixchamam***
      COND=1SG.SBJ COP=want SUB=1SG.SBJ COP=curandero-ST-IRR five

                   oidha']=ñ   *ai-chdha-'*   *na=ñ*   *jiñ-xidhut-da'*
                   year=1SG.PO   arrive-APPL-IRR SUB=1SG.SBJ 1SG.PO-taboo-CONT

      'If I want to be(come) a healer, I must complete five years of ritual abstinence'
      (Willett 1991: 85)

(207)   *Cham*   *jax*   *bua*   *sia=pi-ch*   ***mui'***   *tu-mataim*   *xib*
      NEG   how   do   EXPS=2SG.SBJ-PFV many   DUR-nixtamalize.PFV now

              na=ñ   *gu'*   *kabuimuk* ***jai'*=m**   *palhbuidha-'* *na=p*
              SUB=1SG.SBJ ADVR tomorrow other.PL-2SG.PO help-IRR   SUB=2SG.SBJ

              tu-tuuta-'
              DUR-grind-IRR

      'It doesn't matter if you cook a lot of corn today, because tomorrow I will help you
      grind some of it.' (adapted from Willett 1991: 86)

Preverbal in this case includes immediately preceding a subordinator, which I analyzed as SpecCP in §2.3. Notice in (208) that *bɨx* 'all' quantifies over the subject of the subordinate clause, rather than some aspect of the matrix clause (e.g. the number of *cuetes*).

(208)   *Xi-iobo-'am*   *gu*   *koites* ***bɨx*** *[na=m*   *jik*   *mi'*
      IMP-throw.PL-3PL.SBJ DET cuetes all   SUB=3PL.SBJ DIR   DIR

            jir=doñipio-kam]
            COP=organize.partyNMLZ

      'And they throw cuetes, all those charged with organizing the party'
      (Text_092010_MSM_GGS_Lavidatepehuana)

    The possibilities for what O'dam quantifiers can quantify over can be captured by what they c-command, as will become relevant in §4.2.2. The constituencies of Constituent Quantification and Preverbal Quantification are shown in (209) and (210), respectively. In Constituent Quantification the Q^0 c-commands a DP, in (209a), or PP, in (209b), with an embedded NP. Thus, a quantifier in constituent position can only quantify over the nominal

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'much, many', either ***mu(ʔ)i*, following Miller (1967: 276), or ***mɨ(ʔ)i*, following Campbell & Langacker (1987: 275).

that it c-commands and nothing outside of that nominal (e.g. another verbal dependent), nor any attributive possessors due to DP island constraints. In preverbal quantification, the Q^0 c-commands a full TP, sometimes with an interceding CP. In these cases the quantifier c-commands all of the verb's argument dependents, as well as the V^0 itself. As we will see, in such cases the arguments and verb are all possible as quantification targets for the preverbal quantifier.

(209)   Constituent Quantification

a.

```
        QP
       /  \
      Q    DP
          /  \
         D   NP
```

b.

```
        QP
       /  \
      Q    PP
            |
            P
           / \
          NP  P
```
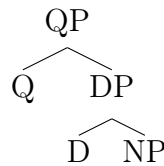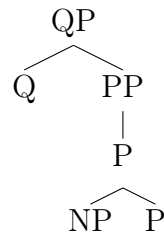
(210)   Preverbal Quantification

```
    QP
   /  \
  Q   (CP)
      / \
     C   \
          TP
          /\
        Verb
```
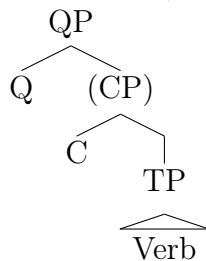
While I find that all quantifiers that can appear in the preverbal position can also appear in the constituent position, the reverse is not true. Notice in (211) that *jɨma'n* 'each one' can constituent quantify over the locative expression, in (211a), or the subject of the resultative construction, in (211b). However, in (212), we see that *jɨma'n* 'each one' cannot appear in the preverbal position. Notably, this means that *jɨma'n* is the only quantifier than can only quantify over XPs it forms a constituent with. Thus, while most quantifiers in O'dam can occur in both the preverbal and constituent positions, at least one quantifier is restricted to

the constituent position.

(211) a. *Jix=ɨ'~xchu-ix-am*   *gu*   *u'ji'*   **jɨma'n**   *tu~tua-ta'm*
COP=PL~hide-RES-3PL.SBJ   DET   bird.PL   each.one   PL~tree-in

'Birds are hidden in each tree'

b. *Jix=ɨ'~xchu-xim-am*   *jɨma'n*   *gu*   *u'ji'*
COP=PL~hide-RES-3PL.SBJ   each.one   DET   bird.PL

'Each bird is hidden'

(212) **Jɨma'n*   *jix=ɨ'~xchu-xim-am*   *(gu*   *u'ji')*
each.one   COP=PL~hide-RES-3PL.SBJ   DET   bird.PL

Intended: Each bird is hidden

The set of quantifiers I have identified are shown in Table 4.1.[2] As shown, only two quantifiers are restricted to the constituent position, *jɨma'n* 'each' and *jɨ'k* 'some'. It is possible that *jɨ'k* is permitted in the perverbal position. However, in all elicitation sessions my consultants corrected examples with preverbal *jɨ'k* to *jɨ'k pɨx*. One limitation of my investigation into O'dam quantifiers is that I only classified elements as quantifiers if they appeared in the constituent position. Current descriptions of O'dam, as well as my own developing knowledge of the language, do not allow me to identify a potential quantifier that only occurs in the preverbal position. For example, I excluded the particles *gamɨjɨ* 'always' and *pai'jɨ* 'sometimes,' which have temporal quantifier semantics, because they are not attested in the constituent position. Thus far I have not come across any preverbal-only elements that distinguish grammatical functions, however the interaction between these temporal quantifiers and verbal valency is certainly an interesting question for the future.

In the constituent position, we see that the quantifier *ma'n* 'one' quantifies over whatever it forms a consituent with. In (213a), *ma'n* quantifies over the subject *gu chio'ñ* 'man', in (213b) *ma'n* quantifies over *gu bhan* 'coyote', which is the primary object, and in (213c), *ma'n* quantifies over the locative expression *mu pue'mlo* 'town (down there)'

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[2]See Willett & Willett (2015: 343–4) for full list of numeral quantifiers.

Quantifier	Meaning	Preverbal	Constituent
baik, makob...	'three, four' (other numerals)	X	X
bɨx	'all, completely'	X	X
dɨlh	'only'	X	X
gok	'two, several'	X	X
jai'	'other.PL'	X	X
jɨma'n	'each'		X
ji'k	'some'		X
ji'k pɨx	'some of'	X	X
jumai'	'other.SG'	X	X
ma'n	'one, a'	X	X
mui'	'many, much'	X	X

Table 4.1: O'dam quantifiers and their positions

(213) a. *Ja-tɨɨ*   *[ma'n   gu   chio'n]   gu   bha~bhan*
       3PL.PO-see.PFV   one   DET   man   DET   PL~coyote

       'One man saw (the) coyotes'

   b. *Ø-Tɨɨ-ñi-ch*   *[ma'n   gu   bhan]*
       3SG.PO-see.PFV-1SG.SBJ-PFV   one   DET   coyote

       'I saw one coyote'

   c. *Ja-tɨɨ-ñi-ch*   *gu   bha~bhan   [mu   ma'n   pue'mlo]*
       3PL.PO-see.PFV-1SG.SBJ-PFV   DET   PL~coyote   DIST.LOWER   one   town

       'I saw (the) coyotes in a town there'

Likewise, in the constituent position, quantifiers can quantify over temporal adverbials, as in (214), and comitative OBJ-*bɨm* constructions, as in (215). In all, to my knowledge, all XP constructions can take a compatible quantifier that quantifies over the phrase, regardless of the putative grammatical function of that XP in the larger clause.

(214) a. *Nɨ'y-a'-ich*   *[bɨx   channolh]*
       dance-IRR-1PL.SBJ   all   day

       'We are going to dance all day'

   b. *Nɨ'y-a'-ich*   *[jumai'   tukaa']*
       dance-IRR-1PL.SBJ   other.SG   night

       'We will dance another night'

(215) *[Bɨx gu=ñ a'~mi' ja-bɨm]* tɨbi-a'-iñ
      all   DET=1SG.POSS PL~friend 3PL-COM play-IRR-1SG.SBJ

      'I am going to play with all my friends.'

Note that constituent quantification is only permitted when the quantified constituent is present. For example, if we remove the temporal adverbial from (214a), as in (216), the sentence is no longer acceptable.

(216) **Nɨ'y-a'-ich* *[bɨx _]*
      dance-IRR-1PL.SBJ all (day)

      Intended: We are going to dance all day

Moreover, we see in (217) that the quantifier *bɨx* quantifies over the relative clause 'those in charge of the party' by occurring in the constituent quantification position of the subordinate clause headed by the subordinator *na*. As we will see *bɨx* 'all', in this case is in the preverbal position of the relative clause, and thus will show preverbal quantification properties of only the subordinate clause.

(217) *xi-iobo-'am* *gu* *koites* *[bɨx* *na=m* *jɨk* *mi'*
      IMP-throw.PL-3PL.SBJ DET *cuetes* all SUB=3PL.SBJ when DIR
      jir=doñipio-kam]$_{CP}$
      COP=party-NMLZ

      'and they throw *cuetes*, all of those in charge of the party'
      (Text_092010_MSM_GGS_Lavidatepehuana)

Finally, constituent quantification can occur in the preverbal position if the quantified constituent is topicalized. This is shown in (218)[3] where the quantifier *jai'* 'other.PL' constituent quantifies over the DP *gu ja'tkam* 'people' which occurs in the preverbal topic position of the verb *jix=maat* 'know'. The structure here is the same as in (209a), where *jai'* 'other.PL' can only quantify over *gu ja'tkam* 'people', rather than any other argument functions of the verb.

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[3]The word *umuu'* refers to the zoyate, a type of palm tree *brahea dulcis* that can be used to make baskets.

(218) **[*Jai'*** *gu* *ja'tkam]_{DP}* *joidham* *jix=maatɨ-t* *jup* *bua-am* *gu*
    other.PL DET people   enjoy   COP=know-IMPF   IT   make-3PL.SBJ DET

    umuu' *baalh*
    zoyate   basket

    'Some (other) people know well how to make zoyate baskets' [Algunas personas saben
    bien hacer las canastas de zoyate] (Willett & Willett 2015: 95)

Now that I have laid out some background on O'dam quantifiers, including their behavior in the constituent position, in §4.2.2 I will discuss the argument-adjunct distinction, as delineated by preverbal quantifiers.

4.2.2   Preverbal quantifiers and grammatical functions

We saw in §4.2.1 that quantifiers in the constituent position can quantify over any XP they make a constituent with so long as they are compatible with the quantified element of the XP (i.e. regardless of grammatical function). In the preverbal position, we find restrictions on what is quantifiable. We see in (219), which contrasts with (206), that the subject and primary object are quantifiable by *ma'n* 'one', in (219a) and (219b) respectively. However, the locative expression *mu pue'mlo* cannot be quantified over from the preverbal position, shown in (219c), even though it could in the constituent position in (213c). In addition, we see that quantifiable participants in (219) are not affected by an overt XP exponent of that participant, in contrast to constituent quantification.

(219)   a.   *Ma'n*   *ja-tɨɨ-Ø*   *(gu*   *chio'n)*   *gu*   *bha~bhan*
           one   3PL.PO-see.PFV-3SG.SBJ   DET   man   DET   PL~coyote

           'A man saw (the) coyotes'

     b.   *Ma'n*   *Ø-tɨɨ-ñi-ch*   *(gu*   *bhan)*
           one   3SG.PO-see.PFV-1SG.SBJ-PFV   DET   coyote

           'I saw one (coyote)'

c.   *Ma'n   ja-tɨɨ-ñi-ch   gu   bha∼bhan   (mu*

     *one   3PL.PO-see.PFV-1SG.SBJ-PFV   DET   PL∼coyote   DIST.LOWER

     pue'mlo)

     town

    Intended: I saw (the) coyotes in a town there

The optionality is shown again in (220), where *bɨx* 'all' quantifies the primary object/recipient of *makia'* 'give' and there is no overt nominal constituent in any of the clauses.

(220)   *Bɨx   mi'   bha-ja-maki-am   jix=chu-m-maik-ka-'   gio*

       all   PROX   DIR-3PL.PO-give-3PL.SBJ   COP=DUR-MID-get.drunk-ST-IRR   COORD

       na   tu-m-sabda

       SUB   DUR-MID-play.music

    'To all they give, all who get drunk and then there is music'

    (Text_09210_MSM_GGS_Lavidatepehuana)

In fact, I find that preverbal quantification is well attested in naturalistic speech with and without an associated overt XP constituent. We see in (221a) that *mui'* 'many' quantifies over the number of people who arrived at the party, which is also expressed through the *gu ja'tkam* DP. In (221b) we see that *bɨx* quantifies over the primary object recipient of *makia'* 'give', which lacks any XP exponent.

(221)   a.   *[Mui']ᵢ   ya'   ai-mɨ-t   jia   [gu   ja'tkam]ᵢ   xib   na=r*

          many   PROX   arrive.PFV-3PL.SBJ   RET   DET   people   now   SUB=COP

         piasta-ka-t

         party-ST-IMPF

      'A lot of people arrived at the party no?" [Llegó mucha gente a esta fiesta,verdad?]

      (Willett & Willett 2015: 129)

  b.   *[Bɨx]ᵢ   mi'   bha-ja-maki-am   jix=chu-m-maik'-ka   gio*

          all   DIR   DIR-3PL.PO-give-3PL.SBJ   COP=DUR-MID-get.drunk-ST   COORD

         na   tu-m-sabda

         SUB   DUR-MID-play.music

      'To all they give, everyone gets drunk and then music is played.'

      (Text_092010_MSM_GGS_Lavidatepehuana)

4.2.2.1   Grammatical functions that are never co-referenced on the verb

Preverbal quantification aligns with argument indexation in that it cannot quantify over many grammatical functions that are never co-referenced on the verb. In (222) we see two sentences where the preverbal quantifier quantifies over the primary object. In (222a), the primary object of *ga'nga'* 'search' in bold is pronominal, co-referring with *gu suimalh* 'the deer' in the previous clause. The quantifier *jumai* 'other.SG' grammatically quantifies over the primary object, but cannot quantify over a location, which is never co-referenced on the verb. Likewise, in (222b) the primary object marker co-references *gu ja'tkam* 'people' and cannot co-reference the locative *pue'mlos* '(various) towns', even if the primary object marker was not 3PL *ja-*. The numeral *baik* 'three' can only quantify over the co-referenced primary object and not the locative, thus aligning with the verbal argument indexation.

(222) a. *Gaa=ñi-ch*   *[gu   suimalh]ᵢ   Eli-bui   dai   na   cham   bhammu*
           search.PFV=1SG.SBJ-PFV   DET   deer   Eli-COM   but   SUB   NEG   DIR

           oirɨ   gio   ba'   kabuimuk   jumai   Øᵢ-ga'nga-'-iñ
           move   COORD   SEQ   tomorrow   other.SG   3SG.PO-search-IRR-1SG.SBJ

       'I looked for the deer where Eli is but it was not there, so tomorrow I will look for another (deer/other animal).'
       *I looked for the deer where Eli is but it was not there, so tomorrow I will look somewhere else.

       b. *Gu   Maikol   baik   jaᵢ-grabaru*   *[gu   ja'tkam]ᵢ   pue'mlos*
           DET   Michael   three   3PL.PO-record.PFV   DET   people   towns

       'Michael recorded three people in (various) towns'
       *Michael recorded people in three towns

Notice in (223a) that temporal adverbials are not quantifiable from the preverbal position, nor are they ever co-indexed by the subject or primary object markers. That it is possible to quantify temporal adverbials from the constituent position, as in (223b), shows that the ungrammaticality of (223a) is not an issue of the compatibility of the numeral quantifier *baik* 'three' and the temporal adverbial *semaan* 'week(s)'.

(223) 'He is going to stay with us for three weeks'

       a. ***Baik*   *jich-bɨmya'biy-a'*   *semaan***
           three   1PL.PO-visit-IRR   week

b. *Jich-bɨmya'biy-a'* **baɨk** **semaan**
    1PL.PO-visit-IRR   three   week

Similarly, in (224), we see that preverbal quantifiers cannot target instruments marked with the *-kɨ'n* 'with' postposition.

(224) a. *Jɨ'k*   *pɨx*   *tu-aski-cha-'-iñ*   *dhi*   *estambre-kɨ'n*
          some   MIR   DUR-asaak-VBLZ-IRR-1SG.SBJ   DEM.PROX   wool-with

    'I am going to make some bags with this wool'
    *I am going to make bags with some of this wool

     b. *Mui'*   *ba'k-cha-'-iñ*   *dhi-ñi*   *adobe-kɨ'n*
          many   building-VBLZ-IRR-1SG.SBJ   DEM.PROX-VIZ   adobe-with

    'I am going to build many houses with this adobe'
    *I am going to build houses with a lot of this adobe

Certain verbs can can select for materials as an acceptable object. Notice in (225a) the material *estambre* 'wool' can occur with the verb *aski-cha'* 'make morrales' without the *-kɨ'n* 'with' postposition. In contrast, the verb *ba'k-cha'* 'make houses' does not allow the material *adobe* 'adobe' to appear without the *kɨ'n* 'with' postposition, as in (225b). This selection difference also aligns with a difference in preverbal quantification. In (225a) *mui'* 'many' can quantify over the material, in contrast to (224a) where the preverbal quantifier could not. Thus, this test is sensitive to differences in verbs' selection of arguments.

(225) a. *Mui'*   *Ø-a'∼ski-cha-'-iñ*   *dhi-ñi*   *estambre*
          many   3SG.PO-PL∼morral-VBLZ-IRR-1SG.SBJ   DEM.PROX-VIZ   wool

    'I am going to make many bags with this wool'
    'I am going to make bags with a lot of this wool'

     b. **Ba'k-cha-'-iñ*   *dhi-ñi*   *adobe*
          building-VBLZ-IRR-1SG.SBJ   DEM.PROX-VIZ   adobe

    Intended: I'm going to build houses with this adobe

For transitive verbs, we again see that preverbal quantification largely agrees with verbal co-indexation. In (226)-(228) we see three different types of verbs. In (226) *omna'∼omsa'* 'break.SG/PL' takes an agent subject and a patient primary object. The same is true of (227), where the numeral *jixchamaan* 'five' can quantify over the subject/agent or the primary ob-

ject/patient. For (227) that the postposition =dɨt 'between' improves the sentence for subject quantification, although it is not obligatory. The postposition =dɨt 'between' expresses that the five agents are dividing the children amongst themselves; it clarifies that all of the agents are at no point braiding the same child's hair. Note that postpositions do not always improve quantification over the subject, there seems to be some effect of the verb *jikpata'* 'braid'. In (228), *uana'* 'write' takes an agent subject but a created theme. Nonetheless, we see that their preverbal quantifiers can quantify over a co-referenced primary object, as in the first readings of each sentence, or the subject, as in the second readings of each sentence. Note, however, that it is never possible to quantify over both the subject and the object at once.

(226) *Makob*   *ja-omsa-'am*   *gu=m*   *a'∼oo'*
       four   3PL.PO-fracture.PL.PFV-3PL.SBJ   DET=2SG.POSS   PL∼bone

     'They broke four of your bones'
     'Four (people) broke your bones'

(227) *Jixchamaan(=dɨt)*   *ja-jikpat-am*   *gu*   *a'∼alh*
       five=between   3PL.PO-braid-3PL.SBJ   DET   PL∼child

     'Five people are braiding the children's hair'
     'They are braiding five children's hair

(228) *Baik*   *ja-uana-'-apim*   *gu*   *correos*
       three   3PL.PO-write-IRR-2PL.SBJ   DET   letter

     'You all are going to write three letters'
     'You three are going to write letters

We saw in (221a) that a preverbal quantifier could quantify over the subject of the intransitive motion verb *aaya'* 'arrive'. When combined with the *-tuda* applicative, which licenses an external agent, see §5.1, the preverbal quantifier *jɨ'k pɨx* in (229) can quantify over the co-indexed subject or object, shown in the first two translations of (229). However, the goal can still only be quantified over through constituent quantification, compare the third translation of (229) to (230).

(229) *Jɨ'k*   *pɨx*   *ja-ai-chdha-'-am*   *gu=ñ*   *a'~mi'*
      some   MIR   3PL.PO-arrive-APPL-IRR-3PL.SBJ   DET=1SG.POSS   PL~friend

          mu   *chi~chiop*
          DIST.LOWER   PL~church

      'Some of them/my friends brought them/my friends to churches'
      'They brought some of my friends to churches'
      *They brought my friends to some churches

(230) *Ja-ai-chdha-'-am*   *gu=ñ*   *a'~mi'*   *jɨ'k*   *pɨx*
      3PL.PO-arrive-APPL-IRR-3PL.SBJ   DET=1SG.POSS   PL~friend   some   MIR

          mu   *chi~chiop*
          DIST.LOWER   PL~church

      'They brought my friends to some churches'

Similarly, we see in (231) that *jumai'* 'other.SG' in the preverbal position is ambiguous between quantifying over the subject or the object, shown in the translations of (231). While the subject DP *gu chio'ñ* is also topicalized, the ambiguity results from *jumai'* following the subject DP (i.e. outside the constituent quantification position). Notice in (232) that constituent quantification makes the reading unambiguous.

(231) *Gu*   *chio'ñ* *jumai*   *Ø-jiñkui'ñ-dha-'*   *nabap* *tannolh*
      DET   man   other.SG   3SG.PO-yell-APPL-IRR   each   day

      'A different man yells at him each day'
      'The man yells at the other (person) each day'

(232) ***Jumai***   ***gu***   ***chio'ñ*** *Ø-jiñkui'ñ-dha-'*   *nabap* *tannolh*
      other.SG   DET   man   3SG.PO-yell-APPL-IRR   each   day

      'A different man yells at him each day'

4.2.2.2   The ambiguity of preverbal quantifiers

I previously discussed in §4.2.1 that constituent quantifiers only quantify over the head they form a constituent with. In contrast, my consultants offered multiple judgements for sentences like (226), (229), and (231), where the preverbal quantifier is compatible with multiple arguments of the verb. A preverbal quantifier can quantify over any verbal argument

it is compatible with, from the same preverbal position. I used ambiguous sentences for the preverbal quantifier test, where multiple elements of a clause were compatible with the preverbal quantifier. My consultants were then asked about all of the possible interpretations of the sentence. However, for some verbs, such as *kɨ'ya'* 'bite', my consultants strongly preferred quantification over the object, making ambiguous sentences give a false negative (i.e. adjunct-like) result for these verbs' subjects. We see in (233a) that the preverbal quantifier *gok* 'two' quantifies over the object, my consultants rejected quantification over the subject. Subject quantification was only possible by making the object incompatible with the preverbal quantifier, as in (233b).

(233) a. *Gok ja-kɨ∼kɨɨ-am*   *gu*   *go'ngoox*   *gu*   *ja-too∼ton*
two   3PL.PO-PL∼bite.PFV-3PL.SBJ   DET   dog.PL   DET   3PL.POSS-PL∼leg

     gu   *a'∼toxkor*
     DET   PL∼chair

'Dogs bit two legs of the chairs.'

b. *Ma'n ja-kɨ∼kɨɨ*   *gu*   *gagoox*   *gu*   *ja-too∼ton*   *gu*
one   3PL.PO-PL∼bite.PFV   DET   dog   DET   3PL.POSS-PL∼leg   DET

     a'∼toxkor   *semaan*
     PL∼chair   week

'A dog bit the chairs' legs'

My consultants broadly preferred quantification over an object to over a subject. In their studies of Pima Bajo, another Tepiman language on the Piman branch, Munro (1984) and Smith (2012) found similar discontiguous quantification properties.[4] However, Smith (2012) found for his consultants that discontiguous quantification in transitive and ditransitive verbs was only possible for the object, as in (234). Munro (1984) in contrast, found that discontiguous quantification over a transitive subject was possible if she made the object incompatible with the quantifier. The sentence in (235) is an example where Munro's (1984) and Smith's

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[4]Munro (1984) and Smith (2012) use the term 'quantifier float' and assume that the quantifier moves out of the quantified constituent. However, they do not show evidence for why such quantification necessitates movement and could not be done with the quantifier in situ. I use 'discontiguous quantification' for the phenomena in Pima Bajo and believe further study is warranted to examine whether such discontiguous quantifiers are necessarily generated within the quantified nominal.

(2012) consultants disagreed. Smith (2012) proposes the difference is a dialectal one because his consultants were from a different generation and community than Munro (1984). Given that I have found naturalistic examples of preverbal quantification over transitive subjects, I believe that the behavior of verbs like *kɨ'ya'* 'bite' is related to the contextually odd environment of elicitation, not a grammatical restriction.

(234)   *'O'oki*   *'a-t*   **vees**   *'i*   *ha-daadːsh*   *heg*   *'e-'a'al.*
        PL.woman   AUX-PERF   all   INC   3PL-PL.make.sit   DET   ANA-PL.child

        'The women sat all their children down.'
        *All the women sat their children down. (Smith 2012: 720)

(235)   *%Hegam*   *ceceoj*   *'o*   *vees*   *ñeid*   *heg*   *Alice*
        those   PL.boy   AUX   all   see   DET   Alice

        'Those boys all saw Alice.' (Smith 2012: 720)

The strong preference of object quantification over subject quantification did not create ambiguous argument-adjunct results for preverbal quantifiers. These verbs still result in ungrammatical sentences if none of the arguments of a verb are compatible with the preverbal quantifier. This is shown in (236a), where only the time adverbial *semaan* 'week' is compatible with the preverbal quantifier and the sentence was judged unacceptable. Notice in (236b) that placing the *ma'n* 'one' quantifier in the constituent position of the time adverbial renders the sentence acceptable.

(236)   a.   ***Ma'n***   *ja-kɨ∼kɨɨ-am*   *gu*   *go'ngoox*   *gu*   *ja-too∼ton*
           one   3PL.PO-PL∼bite.PFV-3PL.SBJ   DET   dog.PL   DET   3PL.POSS-PL∼leg

              gu   *a'∼toxkor*   **semaan**
              DET   PL∼chair   week

          Intended: Dogs bit the chair's legs for one week.

       b.   *Ja-kɨ∼kɨɨ-am*   *gu*   *go'ngoox*   *gu*   *ja-too∼ton*
          one   3PL.PO-PL∼bite.PFV-3PL.SBJ   DET   dog.PL   DET

              gu   *a'∼toxkor*   **ma'n**   **semaan**
              3PL.POSS-PL∼leg   DET   PL∼chair   one

          'Dogs bit the chair's legs for one week.'

In addition to strong preference of discontiguous quantification over objects to tran-

158

sitive subjects, Munro (1984) finds more quantificational flexibility for objects in Pima Bajo than for subjects. For example, while objects can always be quantified by numerals (*hema/hemako* 'one'; *gook* 'two'; *vaik* 'three'; etc.), subjects can only be numeral quantified for a limited number of intransitive verbs. Munro (1984) does not list the intransitive verbs that permit numeral quantification of subjects, nor does Smith's (2012) later work. Munro's (1984) relevant example is shown in (237), where the verb is *voopo* 'run.PL'. Both Harley et al. (2017) and Guerrero (2004) have found evidence of certain motion verbs, including 'run', having object generated subjects in the Uto-Aztecan language Hiaki. This suggests that these exceptional intransitives in Pima may have object-like subjects, which would make them still follow Munro's finding that numerals do not preverbally quantify over subjects in Pima Bajo.

(237) *Ceceoj*   *'o*   *gook*   *voopo*
      men   3A   two   run.PL

      'Two boys are running' Munro (1984: 275)

My investigation of O'dam quantifiers finds no difference between types of quantifiers in their division of grammatical functions. For example, the object quantification preference of (233a) is no different if the quantifier is changed to the non-numeral *bɨx* 'all' quantifier, shown in (238a).

(238) a. *Bɨx*   *ja-kɨ∼kɨɨ-am*   *gu*   *go'ngoox*   *gu*   *ja-too∼ton*
          all   3PL.PO-PL∼bite.PFV-3PL.SBJ   DET   dog.PL   DET   3PL.POSS-PL∼leg

          gu   *a'∼toxkor*
          DET   PL∼chair

          'Dogs bit all the legs of the chairs.'

4.2.2.3   Promotion versus benefaction and benefaction versus itself

While locatives systematically cannot be quantified over from the preverbal position, locatives that are promoted by applicatives can be quantified over; see also §5.2. Notice in (239) that the preverbal quantifier *jɨ'k pɨx* 'some of' can quantify over the primary object, the theme, of *jotsa'* 'send' but not the goal. In contrast, the applied form, shown in (240) per-

mits quantification of the primary object/recipient[5] or the theme.

(239)   *Jɨ'k*   *pɨx*   *ja-jotsa-'*   *(gu*   *ma∼mra-'n)*   *bhammɨ*
        some   MIR   3PL.PO-send-IRR   DET   PL∼offspring-3SG.POSS   DIST.HIGHER

            pue'mlos
            towns

        'He is going to send some of his kids to towns (there)'
        *He is going to send his kids to some towns'

(240)   *Jɨ'k*   *pɨx*   *ja-jotxi-dha-'-iñ*   *(gu=ñ*   *a'∼alh-chuk)*
        some   MIR   3PL.PO-send-APPL-IRR-1SG.SBJ   DET=1SG.POSS   PL∼child-POSSD

            (bhammɨ   *Jalisco)*
            DIST.HIGHER   Jalisco

        'I am going to send my kids to some (people) in Jalisco'
        'I am going to send some of my kids to them in Jalisco'

Quantification over the non-head marked theme in (240) also shows an instance where preverbal quantification does not align with verbal co-indexation. My consultants judged that the sentence in (240) is only acceptable with a plural recipient, because of the *ja-* 3PL primary object marking (i.e. *I am going to send some of my kids to her in Jalisco). Thus, when the theme is quantified over there is no obligatory exponent anywhere in the clause. We see for other ditransitives, the primary and secondary object may be quantified over from the preverbal position, shown in (241). Note that in (241b), the secondary object/theme lacks any exponent in the clause. The sentence in (241b) would be ungrammatical if *bɨx* could not quantify over the secondary object, because the subject and primary object are both singular. Likewise, in (242) the theme is quantified over by the preverbal quantifier, but lacks any obligatory clausal exponent.

(241)   a.   *Ma'n*   *maa-ñi-ch*   *gu=ñ*   *mansaan*
            one   give.PFV-1SG.SBJ-PFV   DET=1SG.POSS   apple

            'I gave my apple(s) to one (person)'
            'I gave him my one apple'

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[5]I show in §5.2 that the goal of *jotsa'* is not truly promoted to a recipient. Instead, the applicative adds an animacy entailment to the promoted object, which for verbs of sending creates a strong implication of possession by the animate goal.

b.   *Bɨ*   *maa-ñi-ch*   *gu*   *Jose*
      one   give.PFV-1SG.SBJ-PFV   DET   José

      'I gave José everything/all (the apples)'

(242) *Mui'* *añ*   *jum-kaich-dha-'*   *(gu   sasab)*
       many 1SG.SBJ 2SG.PO-hear-APPL-IRR   DET   song

      'I am going to show you a bunch of songs'

Preverbal quantifiers do not align with verbal co-indexation in that they are consistently able to quantify over secondary objects. Another way in which they do not align with verbal co-indexation is that certain verbs do not permit preverbal quantification of subjects. An example of this is shown in (243), where *baik* may only quantify over the subject of *bua'* 'do, make' from the constituent position, which is why the sentence is unacceptable unless *gu ja'tkam* 'people' is overt.

(243) *Baik*   **(gu ja'tkam)* *jup* *bua-'-am*   *gu*   *ba'ak*
       three DET people   IT make-IRR-3PL.SBJ DET building

      'Three people are building a house'

For the most part, it is not clear what unites the verbs that disallow preverbal quantification over the subject. For example, in contrast to *bua'* 'do, make' other agent-patient verbs and other verbs of creation permit quantification over their subject. However, I do find that verbs of speaking seem to disallow preverbal quantification over their subject as a class. This is shown in (244), where *gok* 'two' can quantify over the object of *a'ga'* 'speak', but not over the subject.

(244) *Gok* *a'ga'-am*   *gu*   *ja'tkam* *na*   *gu*   *virus*
       two speak-3PL.SBJ DET people SUB DET virus

      'The people are talking about two viruses'
      *Two people are talking about the virus

We have seen that thematic roles assigned by base verbs (agent, patient, recipient, theme, etc.) can generally be quantified over from the preverbal position, with the exception of certain subjects. However, benefactives are only introduced via the *-dha* and *-tuda* applicatives, and moreover, O'dam applicatives are not ambiguous as to the type of benefactive

161

they license: deputative, recipient, or plain; see §5.4. Deputative benefactives are cases where the agent does the event in place of the beneficiary, as in (245a). Recipient benefactives are ones where the beneficary is the recipient of a theme in the base event, as in (245b). A plain beneficiary is one that broadly benefits from the event but not in a deputative or recipient manner, as in (245c).

(245)   a.   **Deputative:** Mary opened the door for me

   b.   **Recipient:** I was excited that my grandparents wrote me a letter

   c.   **Plain:** I wore my lucky jersey for Tottenham today

Benefactives are often primary objects, but I find that the type of beneficiary seems to be the determining factor of whether or not they can be quantified over from the preverbal position. Deputative benefactives can be consistently quantified over from the preverbal position. In (246) the benefactive must be interpreted as a deputative, the sentence is not felicitous for instances where the subject intends to send the letters to the beneficiary (i.e. recipient) or where the subject intends to write the letters about the beneficiary (i.e. plain). Notice that *bɨx* can quantify over the created object, as we saw that it could for the base form *uana'* 'write' in (228), and the deputative beneficiary in (246).

(246)   *Bɨx*   *ja-ua'ñ-xi-dha-'-iñ*   *gu*   *correos*   *ya'*   *pue'mlo*
        all   3PL.PO-write-BEN-APPL-IRR-1SG.SBJ   DET   letters   PROX   town

   'I am going to write all of the letters for them in this town (because they cannot)'
   'I am going to write letters for everyone in this town (because they cannot)'

However, my consultants give mixed results for plain benefactives. While *gam-dha'* 'put inside for someone' permits quantification over the beneficiary, shown in (247a), *jidholh-dha'* 'stew for someone' does not permit perverbal quantification over the beneficiary.

(247)   a.   *Bɨx*   *jam-gam-dha-'-iñ*   *dhi*   *lonche*
             all   2PL.PO-put.inside-APPL-IRR-1SG.SBJ   DEM.PROX   lunch
             jiñ-mochila-ta'm
             1SG.POSS-backpack-in

        'I am going to put this lunch in my backpack for all of you'

b. *Gok*   *ja-jidholh-dha-'-iñ*   *gu*   *takarui*
  two   3PL.PO-cook.broth-APPL-IRR-1SG.SBJ   DET   chicken

  'I am cooking chicken for two (other) people'

The ability (or lack thereof) to quantify over different types of benefactives from the preverbal position does not appear to be related to primary/secondary objecthood. We saw in (227) that the base object of *jikpata'* 'braid' can be quantified over from the preverbal position. When combined with the *-dha* applicative, *jikpata'* gains a plain beneficiary. We see in the two sentences in (248) that either object can be the primary object, in (248a) the object of the base form *jikpata'* 'braid' is the primary object, while in (248b) the beneficiary is the primary object. In (248a) we see that *bɨx* 'all' in the preverbal position can quantify over the primary object; the secondary object here is implied to be Yami and is incompatible with the quantifier because she is singular. However, in (248b) we see that the plain beneficiary is the primary object, *jam-* 2PL.PO, but *bɨx* 'all' can only quantify over the secondary object, the patient. Thus, just as we saw that preverbal quantification does not require an overt XP exponent of the quantified phrase, while constituent quantification does, here we see that primary objecthood is not necessary or sufficient to describe preverbal quantification.

(248)   a.   *Bɨx*   *ja-jikpax-dha-'-iñ*   *gu*   *a'~alh-chugi-'ñ*   *gu*
          all   3PL.PO-braid-APPL-IRR-1SG.SBJ   DET   PL~child-POSSD-3SG.POSS   DET
              Yami
              Yami

  'I am going to braid the hair of all of Yami's kids'

  b.   *Bɨx*   *jam-jikpax-dha-'-iñ*   *dhi*   *a'~alh-chuk*
         all   2PL.PO-braid-APPL-IRR-1SG.SBJ   DEM   PL~child-POSSD

  'I am going to braid all of these children's hair for you.PL (e.g. to look like you or for your show)'
  *I am going to braid these children's hair for all of you

Finally, I find that preverbal quantification distinguishes between RECIPIENTS and RECIPIENT BENEFICIARIES (Kittilä 2005; see also Censabella 2010 and (Basilico 2008)). Recipients are participants who are participants of the core event denoted by the verb. For example, the O'dam verb *makia'* 'give' denotes a giving event, shown in (249a), which entails that a theme y comes into the possession of some recipient z. The recipient is not extricable

from the giving event. Likewise, for the applicativized form *jotxi-dha'* 'send to someone' from (240), the recipient licensed by the applicative is a participant that is entailed by the core sending event. The applicative licenses the goal of *jotsa'* 'send' as an object by adding an animacy entailment, see §5.2. The *z* participant of *jotxi-dha'* 'send to someone' is a recipient because it is simply a more restricted version of the entailed goal of the base verb *jotsa'* 'send'.

(249) Recipient:

   a. $makia' := \lambda z \lambda y \lambda x \lambda s \lambda e [give'(e) \wedge cause'(e,s) \wedge ag'(e,x) \wedge have'(s,y,z)]$

   b. $jotxi-dha' := \lambda z \lambda y \lambda x \lambda s \lambda e [send'(e) \wedge cause'(e,s) \wedge ag'(e,x) \wedge arrive'(s,y,z) \wedge animate'(z)]$

As we see in (250), recipients can be quantified over from the preverbal position. In (250a), the base ditransitive *makia'* 'give' allows both of its objects, theme and recipient, to be quantified over from the preverbal position. Likewise, in (250b) the recipient licensed by the *-dha* applicative can be quantified over by preverbal *jumai* 'other.SG', as well as the theme.

(250) a. *Gok   ja-maki-a'-am   gu   dulces*
            two   3PL.PO-give-IRR-3PL.SBJ   DET   sweets

            '**Two (people)** are going to give (children) sweets'
            'They are going to give **two (children)** sweets'
            'They are going to give the children **two sweets**'

   b. *Gu   Jose   ga'lhi-ñi-ch   gu   mansaan   gio   ba'*
       DET   José   sell.APPL.PFV-1SG.SBJ-PFV   DET   apples   COORD   SEQ

       jumai'   ga'lhi-dha-'-iñ   gu   seman   na   bhajiim
       other.SG   sell-APPL-IRR-1SG.SBJ   DET   week   SUB   come

       'I sold my apples to José and next week I will sell my apples to **someone else**.'
       'I sold my apples to José and next week I will sell him **something else**.'

In contrast, recipient beneficiaries are participants of a secondary event, as discussed in §3.2.8.4. As an example, the *-ta* verbalizing suffix attached to an N to form a verb of creation, where the incorporated nominal is the created object. When a *-ta* verb combines with the *-tuda* applicative, it gains a recipient beneficiary. This beneficiary is associated with a transfer-of-possession event that occurs after the object creation event expressed by the

base *N-ta* verb. Likewise, the applicativized verb *saba'ñxi-dha'* 'buy for someone' denotes an initial buying event, which the base form *saba'da'* 'buy' denotes, and then a second event in which the purchased theme is transferred into the possession of some recipient. Recipient benefactives can never be quantified over from the preverbal position.

The base forms of both verbs in (251) lack any transfer of possession entailment. Thus, the recipient beneficiaries introduced by the applicative are new to the verbs' event structures, as we saw in (**??**). In (251a) *makob* 'four' can quantify over the subject or the created theme but not over the recipient beneficiary *gu tatkarui* 'chickens'. Note that the created theme is the nominal root of the verb; I will discuss this further when I discuss the quantification over verbs themselves in §4.2.3. Likewise, in (251b), the quantifier *baik* 'three' can quantify over the purchased theme, but not the recipient beneficiary.

(251) a. *ba'k-cha'* 'build house(s)' > *ba'k-tuda'* 'build house(s) for someone'
     Makob   *ja-ba'k-chuda-'-am*   *gu*   *ta∼karui*
     four   3PL.PO-house-APPL-IRR-3PL.SBJ   DET   PL∼chicken

     'Four (people) are going to build coops/a coop for the chickens'
     'They are going to build four coops for the chickens'
     *They are going to build a coop for the four chickens

  b. *saba'da'* 'buy' > *saba'nxi-dha'* 'buy for someone'
     Baik   *ja-saba'ñxi-dha-'-am*   *gu*   *ja-xiix*   *gu*
     three   1SG.PO-buy-APPL-IRR-3PL.SBJ   DET   3PL.POSS-relative   DET
        motos
        motorcycles

     'Their three older brothers are going to buy them motorcycles'
     'Their older brothers are going to buy them three motorcycles'
     *'Their older brothers are going to buy motorcycles for the three of them'

Thus, preverbal quantification requires us to divide "recipients" into two groups, those which can be quantified over (recipients) and those which cannot (recipient beneficiaries). While preverbal quantification treats recipient beneficiaries as adjuncts, verbal co-reference does not. As we can see throughout the previous examples of this section, both recipient and recipient beneficiaries are commonly primary objects (i.e. co-referenced on the verb).

In Table 4.2 I show the delineation of grammatical functions as made by the preverbal quantification test I have presented here. I will be discussing quantification over the Verb

itself in the following §4.2.3. Roles given a ✓ are ones that can be consistently quantified over from the preverbal position[6] while those marked with an X are systematically not quantifiable from the preverbal position. I have marked plain beneficiaries with % because they show mixed results: some plain beneficiaries are quantifiable from the preverbal position, while others are not. Likewise, I have marked subjects with ✓/% because the majority of subjects I tested are quantifiable from the preverbal position, but there are certain exceptions, discussed above. Preverbal quantification overlaps with verbal head marking in the types of dependents that can be quantified over. However, we see that preverbal quantification also makes divisions among types of beneficiaries and subjects that cannot be quantified over, but which are not differentiated by head marking. In contrast, locations, time adverbials, OBJ-*bui* comitative participants and *kɨ'n*-marked instruments are both never head marked and cannot be quantified over from the preverbal position, as I discussed in §4.2.2.1. This suggests that preverbal quantification is not simply sensitive to 'argumenthood' as a syntactic feature. Instead, it is entirely blind to adjuncts and only probes within the set of arguments for the syntactic properties it is sensitive to. In other words, argumenthood is necessary but not sufficient to determine that a particular dependent can be quantified over from the preverbal position.

The roles I have discussed thus far in this section are exponed by XPs that can be considered dependents of the verb. However, as we see in Table 4.2, I found that the verb itself may also be quantified over from the preverbal position, which I will discuss further in §4.2.3. Verbal quantification is particularly notable because quantifiers in O'dam can only target the verb from the preverbal position. Thus, where all other roles in Table 4.2 can be quantified over from the constituent position, regardless of their argument/adjunct status, the Verb is the only element which cannot be quantified over from a distinct constituent position.

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[6]Note that I have not distinguished items listed with a ✓ by their relative preference for preverbal quantification. As I said earlier in this section, objects seem to generally be preferred over subjects but further research is required to disentangle the various discourse and pragmatic factors that are likely at play.

	Quantifiable from preverbal position
Subjects	✓/%
Patients	✓
Themes	✓
Incorporated nouns	✓
Recipients	✓
Deputative beneficiary	✓
Plain beneficiary	%
Recipient beneficiary	X
Locations	X
Time adverbials	X
OBJ-*bui*	
comitative participants	X
-kɨ'n marked instruments	X
Materials (no *-kɨ'n*)	✓
Verb	✓

Table 4.2: Argument functions based on preverbal quantification

4.2.3 The quantification of the verb itself

In this section I will discuss the ability of preverbal quantifiers to syntactically quantify over the V itself. As we will see in this section, the exact semantics of preverbal quantification of the V varies widely depending on the quantifier and verb. What is important for purposes of distinguishing grammatical functions is the ability of the preverbal quantifiers to quantify some aspect of the verb that is not one of the verb's dependents.

Preverbal quantifiers can quantify over the nominal roots of denominal verbs, such as *-ta* creation verbs. In (252a) *mui'* 'many' is interpreted as quantifying over the created object *ba'ak* 'house'. In (252a), the created object is the only element of the sentence quantifiable by preverbal *mui'* 'many': the subject is singular and the material *adobe* is expressed with the *kɨ'n* 'with' postposition, making it not quantifiable from the preverbal position; see §4.2.2. Constituent quantification over the created object is not possible, notice in (252b) where *mui'* is in the constituent quantification position of the DP *gu ba'bhaak* 'houses', which is intended to express the created object. My consultants rejected (252b) because the overt DP created a contradiction whereby the speaker intends to build houses that have already been

built.

(252) a. *Mui'*   *ba'~pki-cha-'-iñ*   *dhi-ñi*   *adobe-kɨ'n*
        many   building-VBLZ-IRR-1SG.SBJ   DEM.PROX-VIZ   adobe-with

        'I am going to build many houses with this adobe'

      b. *#Mui'*   *gu*   *ba'~bhaak*   *ba'~pki-cha-'-iñ*
        many   DET   PL~building   PL~building-VBLZ-IRR-1SG.SBJ

        Intended: I am going to build many houses
        Speaker comment: It sounds like you already built the houses, but you are
        saying that you are going to build them

A paraphrase of (252a) using the verb *duñia'* 'make, do' yields different results. It is possible
to quantify over the created object from the constituent position, in (253a), and the preverbal
position, shown in (253b). For descriptive completeness, we see in (253c) that the subject of
duñia' 'make, do' can also be quantified over from the preverbal position. This suggests that
the problem with constituent quantification in (252b) is the incorporated nominal structure,
rather than the created object meaning of *gu ba'bhak* 'houses' in (252b).

(253) a. *Jup*   *duu*   *dɨlh*   *gu*   *Mike*   *gu*   *baki-'ñ*
        IT   do.PFV   only   DET   Mike   DET   building-3SG.POSS

        'Only Mike built his house' (he was selfish and did not build any other houses)

      b. *Dɨlh*   *jup*   *duu*   *gu*   *Mike*   *gu*   *ba'ki-'ñ*
        only   IT   do.PFV   DET   Mike   DET   building-3SG.POSS

        'Mike only built his house' (he was selfish and did not build any other houses)

      c. *Dɨlh*   *jup*   *ja-duu*   *gu*   *Mike*   *dhi*   *ba'~bhak*
        only   IT   3PL.PO-do.PFV   DET   Mike   DEM.PROX   PL~building

        'Only Mike built these houses' (and no one else helped him)

In §4.2.2, the examples of preverbal quantification could also be expressed through
constituent position. However, here the preverbal quantification of the denominal *-ta* verb
in (252a) lacks a constituent quantification alternative. The same is true of other denominal
-ta creation verbs, shown in (254), where the created object can only be quantified over from
the preverbal position. As we saw for non-denominal verbs, we see in (254b) and (254c) that
derivation does not restrict preverbal quantifiers.

(254) a. *Baik*   *mar-ta-'-ap*
three   offspring-VBLZ-IRR-2SG.SBJ

'You are going to have three children'

b. *Gok*   *mar-tuda-'-iñ*   *gu*   *juana*
two   offspring-APPL- IRR-1SG.SBJ   DET

'I am going to have two children with Juana

c. *Gok*   *jap*   *jiñ-a'~aski-chdha-'*   *na=ñ*   *mi*
two   2SG.SBJ   1SG.SBJ-PL~asaak-APPL-IRR   SUB=1SG.SBJ   DIR

chu-ga~'mu-da'
DUR-PL~put.in.bag-CONT

'Make me two asaaks to carry my things in' [Hágame dos talegas de ixtle para llevar mis cosas en ellas] (Willett & Willett 2015: 8)

The other type of denominal verb construction is the *tu-* possession construction, shown in (255), where *tu-* prefixes onto a nominal (*n*) root to create an intransitive verb wherein the subject is the possessor for the incorporated noun. As with denominal *-ta* verbs, *tu-* verbs disallow their incorporated noun from appearing as a full DP, shown in (255c), therefore, the incorporated noun can only be quantified over from the preverbal position.

(255) a. *Ma'n*   *pɨx*   *tu-sa'ua-iñ*
one   MIR   POSS-blanket-1SG.SBJ

'I only have one blanket' [Nada más tengo una sola cobija] (Willett & Willett 2015: 279)

b. *Baik*   *tu-**puertas**-am*   *gu*   *ba'~bhak*
three   POSS-doors-3PL.SBJ   DET   PL~house

'The houses have three doors'

c. **(Ja)-tu-puerta(s)-am*   *baik*   *gu*   *puertas*
3PL.PO-POSS-door(s)-3PL.SBJ   three   DET   doors

Intended: They have three doors.

Additionally, as with other verbs, the co-referenced subject is quantifiable from the preverbal position for denominal *tu-* verbs.

(256)   *Bɨx*   *tu-**puerta**-am*   *gu*   *ba'∼bhak*
          all   POSS-door-3PL.SBJ   DET   PL∼house

          'All houses have a door'

So far I have only discussed quantification over nominal participants by preverbal quantifiers. One could analyze preverbal quantifiers as floating from a lower nominal position, including cases where that nominal is incorporated into the verb, as Munro (1984) and Smith (2012) do for Pima and Hale & Keyser (1993) do for Tohono O'odham. However, certain preverbal quantifiers can also quantify over verbs with verb bases (i.e. not denominal). We see in (257) that the sentence, wherein *mui'* 'many' appears in the preverbal position of the transitive verb *daabuna'* 'spin', has two interpretations. In the first interpretation, *mui'* is interpreted as quantifying over the amount of dirt, this interpretation follows the observations I made in §4.2.2. However, in the second interpretation, *mui'* quantifies over the amount of times the subject was spun. Thus, rather than quantifying a participant of the event, preverbal *mui'* quantifies an aspect of the event itself, in this case the number of iterations.

(257)   *Mui'*   *daabuna-'-ap*   *gu*   *dɨbɨr*
          many   spin-IRR-2SG.SBJ   DET   dirt

          'You spin a lot of dirt'
          'You spin (the) dirt a lot'

We see again in the copular construction in (258) that *bɨx* 'all' in the preverbal position can be interpreted as quantifying over the subject, in which it is translated as 'all', or the state, in which *bɨx* is translated as 'completely'.

(258)   *Añ*   *bɨx*   *jix=dha'*   *gu=ñ*   *pamil*
          1SG.SBJ   all   COP=want   DET=1SG.POSS   family

          'I love all of my family'
          'I completely love my family'

Likewise, in (259a), *bɨx* 'all' can quantify over the number of teachers, or the amount of each teacher the subject sees. We see in (259b) that constituent quantification only allows *bɨx* 'all' to quantify over the number of teachers seen, not the amount of each teacher the speaker can see.

(259) a.   *Bɨx   ja-nɨi'-iñ*   *gu*   *ma∼mtu-xi-'ñ-dham*
           all   3PL.PO-see-1SG.SBJ   DET   PL∼learn-BEN-APPL-NMLZ

           'I see all of the teachers'
           'I see all of each teacher' (i.e. if they are trying to hide)

       b.   *Ja-nɨi'-iñ*   *bɨx*   *gu*   *ma∼mtu-xi-'ñ-dham*
           3PL.PO-see-1SG.SBJ   all   DET   PL∼learn-BEN-APPL-NMLZ

           'I see all of the teachers'
           *'I see all of each teacher' (i.e. if they are trying to hide)

We see in (260a) that preverbal *dɨlh* has three possible interpretations, one where it targets the verb and is interpreted as quantifying over the event, another where it quantifies over the subject and a final one where it quantifies over the object. However, in (260b) we see that only the object can be quantified over through constituent quantification. The subject is pronominal and, therefore, lacks a co-referring XP, while the verb itself cannot be quantified over from a distinct constituent position.[7]

(260) a.   *Dɨlh   Ja-ɨk-'iñ*   *dhi*   *u'∼uux*
           only   3PL.PO-cut-1SG.SBJ   DEM.PROX   PL∼stick

           'I only cut these sticks' (as opposed to doing anything else to the sticks)
           'Only I cut these sticks' (as opposed to anyone else)
           'I only cut these sticks' (as opposed to other sticks)

       b.   *Ja-ɨk-'iñ*   *dɨlh*   *dhi*   *u'∼uux*
           3PL.PO-cut-1SG.SBJ   only   DEM.PROX   PL∼stick

           *I only cut these sticks (as opposed to doing anything else to the sticks)
           *Only I cut these sticks (as opposed to anyone else)
           'I only cut these sticks' (as opposed to other sticks)

The syntax of preverbal quantifiers is different from what I call degree modifiers like *palhɨɨp* 'a little bit'. We see in (262) that *palhɨɨp* 'a little bit' has a similar quantificational effect on the verb as *bɨx* in (261). However, comparing (262a), where *palhɨɨp* appears preverbally to (262b), where *palhɨɨp* appears postverbally, we see that degree modifiers quantify

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[7]My analysis is that constituent and preverbal quantification do not involve different processes: in both, the quantifier simply quantifies over what it c-commands. Therefore, the verb lacks a distinct constituent quantification position likely because the preverbal position is the constituent quantification position of the verb.

over the same thing regardless of their position in the clause. In contrast, in (263) we see that *bɨx* must appear preverbally to quantify some aspect of the verb and must appear in the constituent position postverbally.

(261)   *Bɨx*   *jix=bɨ~pɨɨ-'am*   *gu*   *u'jɨɨ*
         all   COP=PL~red-3PL.SBJ   DET   bird.PL

         'All (of the) birds are red'
         'The birds are completely red'

(262)   'The birds are a little bit red'

     a.   *Palhɨɨp*   *jix=bɨ~pɨɨ-'am*   *gu*   *u'jɨɨ*
           little.bit   COP=PL~red-3PL.SBJ   DET   bird.PL

     b.   *Jix=bɨ~pɨɨ-'am*   **palhɨɨp**   *(gu*   *u'jɨɨ)*
           COP=PL~red-3PL.SBJ   little.bit   DET   bird.PL

(263)   *Jix=bɨ~pɨɨ-'am*   **bɨx**   **(gu*   *u'jɨɨ)*
         COP=PL~red-3PL.SBJ   all   DET   bird.PL

         'All (of the) birds are red'
         #The birds are completely red

I analyze the above examples as the preverbal quantifier syntactically targeting the verb. This is because the exact meaning of the quantifier + verb combination ranges widely. We saw for denominal verbs that verbal quantification is essentially equivalent to nominal quantification where some aspect of the incorporated object is quantified over. In stative constructions such as the copular constructions, the quantifier quantifies over some aspect of the state such as its degree, shown in (258), or its coverage, shown in (264). However, unlike denominal verbs, stative and eventive verbs cannot be quantified over through numerals. Notice in (265a) that the numeral *gok* 'two, several' can quantify over the subject, but not over the state. I believe this is due to the interpretation of the numeral and not evidence for a typical Q-float restriction (for examples, see Al Khalaf 2019).

      In order to quantify over the state, it seems that the state must be packaged into some countable unit, for example, in (265b) the *-kap* suffix allows *gok* to quantify over the number of red areas, however, we see that now the *gok-kap* unit does not obligatorily appear in the

preverbal position. In (265c) we see that the *-kim* suffix is required in order for the numeral *baik* 'three' to quantify over the number of times the event occurred. One explanation for this need to package the event or state in order to count it is that an event or state as a whole is analogous to a mass noun (Grimshaw 1990, see also Alexiadou 2009; Bach 1986; Bennett & Partee 1972; Krifka 1992; Mourelatos 1978). Under this view, the *-kap* 'places' and *-kim* 'times' modifiers are the equivalent of 'bottling' the event or state and then counting the bottles.

(264) *Mui'* *jix=bɨ~pɨɨ-'am*   *gu*   *u'jii*
       all   COP=PL~red-3PL.SBJ   DET   bird.PL

       'Many birds are red'
       'The birds are very red'

(265) a. *Gok* *jix=bɨ~pɨɨ-'am*   *gu*   *u'jii*
           two   COP=PL~red-3PL.SBJ   DET   bird.PL

           'Two/several birds are red'
           *The birds are two red/have two red areas

       b. *Jix=bɨ~pɨɨ-'am*   *gu*   *u'jii*   **gok-kap**
           COP=PL~red-3PL.SBJ   DET   bird.PL   two-places

           'The birds are red in two places'

       c. *Añ*   *xib*   *baik*   **(-kim)*   *mɨɨ*
           1SG.SBJ   now   three   -times   run.SG.PFV

           'I ran three times today'

Evidence for this mass analogy for event quantification comes from numeral quantification over mass nouns in O'dam. Mass nouns are characterized by their lack of a reduplicated form, two examples are shown in (266) where the singular form can be interpreted as plural and reduplication is not allowed.

(266) a. *juun* 'corn, ears of corn' ≯ **jujuun*

       b. *suudai'* 'water' ≯ **susdai'*

Mass nouns can additionally be split into two groups, granular and non-granular (Grimm 2018; Grimm & Levin 2017; Sutton & Filip 2021). Granular nouns are those which are

generally made up of distinguishable pieces, such as ears of corn.[8] Granular nouns can be quantified over by both numeral and non-numeral quantifiers ; as in (267a) and (267b), respectively. Granular nouns can be analogized to the denominal *-ta* and *tu-* verbs discussed earlier in this chapter. The morphosyntactic number of the granular noun and incorporated nouns are singular (i.e. they are not reduplicated). Their pieces are easily distinguished and, therefore can be counted like standard countable nouns.

(267) a. *Jixchamaam   gu   juun   dhu   bia'*
           five   DET   corn   EVID.DIR   have

           'He has five ears of corn (I saw).'

       b. *bɨ   gu   juun   dhu   bia'*
           all   EVID.DIR   DET   corn   have

           'He has all of the corn (I saw).'

In contrast, non-granular nouns like *suudai'* 'water', or *atuulh* 'atole' can be quantified over by non-numeral quantifiers, as in (268a), but not numeral quantifiers, as in (268b). If a speaker wants to quantify over a non-granular mass noun, they must package it into a countable noun, such as *balde* 'bucket' in (269).[9]

(268) a. *Bɨx   gu   suudai'   dhu   bia'*
           all   DET   water   EVID.DIR   have

           'He has all of the water (I saw).'

       b. **Jixchamaam   gu   suudai'   dhu   bia'*
           five   DET   water   EVID.DIR   have

           Intended: He owns five bodies of water (I saw)

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[8]Most food terms seem to fit into ththe granular mass category.

[9]Nouns borrowed from Spanish are sometimes inflected for plural using Spanish *-s* rather than reduplication, which is native to O'dam. I have not found evidence that the *-s* inflection makes the plural act any differently. Spanish loan nouns are also categorized into countable, granular mass, and non-granular mass nouns. As an example, the food term *mansaan* 'apple', from Spanish *manzana* cannot be inflected for plural in O'dam, **mansaans*, even though it can in Spanish, *manzana-s*.

(269)   *Jixchamaam*   *gu*   *baldes*   *suudai'=kɨ'n* *dhu*   *bia'*
         five   DET   buckets   water=with   EVID.DIR have

     'He has five buckets of water (I saw).'

Non-granular mass nouns pattern like event and states with regards to quantifier restrictions, both can only be quantified by non-numeral quantifiers unless packaged. The restriction of event and state quantification to only certain quantifiers, simply suggests that events and states are mass-like, rather than suggesting asymmetries similar to Q-float.

     We have seen in this section that the verb itself is systematically quantifiable from the preverbal position. What is particularly notable is that unlike subjects and certain objects only licensed by applicatives, see Table 4.2, I find no examples of verbs that themselves cannot be targeted by a compatible preverbal quantifier. At least from a quantificational perspective, the verb and its arguments, at least most of them, are always within the scope of quantification, while adjuncts are never within the scope of quantification. One problem in proposing how it is that adjuncts fall outside of the scope of preverbal quantification is that the constituent relations underneath the S node are unclear. In §2.3, I noted that the particles in the PreV position, shown in (270), seem to be clause-level modifiers (e.g. evidentiality and clausal negation). Because the meaning of the preverbal quantifiers seems to be at the clause-level, it is not clear that they must be at the highest level in the syntax (unless we assume that the syntax and semantics must co-construct).

(270)
                                         S
                       PreV   V   XP
                       Quant

The *late adjunction* proposal of Lebeaux (1988) and Lebeaux (1991) allows us to maintain a flat structure underneath the S node (see also López 2009 and Stepanov 2001). Late adjunction proposes that adjuncts enter the syntax after syntactic processes pertaining to arguments have finished, or right before phasal Spell-Out in Minimalist terms (Zyman 2021). Essentially, preverbal quantification occurs before the appearance of adjuncts, yielding the argument-hood diagnosing properties for free (Branan & Erlewine to appear), although the distinction

among different classes of benefactives would need to explained through some other means. Outside of late adjunction, the preverbal quantifier position may only c-command the V and its arguments. Then, argument XPs raise to a higher position, where the adjuncts are introduced, above the c-command of the preverbal quantifier.

A final possibility is that argumenthood is saturated within the V, following the weaker version of the Pronominal Argument Hypothesis I mentioned in §3.2.8. Under this view, a preverbal quantifier quantifies over the V. Because argumenthood is saturated within the V, a V^0 has multiple participants that can be quantified over: the predicate formed by the V^0 as well as the participants it selects for. The ambiguity in what a preverbal quantifier quantifies over is based on the number of compatible participants within its quantificational scope. Adjuncts are not saturated (i.e. introduced) within the V, therefore, they are outside of the scope of a preverbal quantifier.

4.3   Secondary objects are objects

This chapter followed from an open question left by the Pronominal Argument Hypothesis, discussed in Chapter 3. Namely, whether O'dam has full agreement paradigms. We have seen in this Chapter that the answer to that question in no. Secondary objects are, by definition, objects that lack verbal co-reference in a given clause. Recall that reliance on head-marking as the sole argumenthood diagnostic predicts that secondary objects are adjuncts. However, we saw that preverbal quantification distinguished head-marked subjects and objects from expected adjuncts (i.e. dependents that are not entailed). We also saw that preverbal quantification treated secondary objects as subjects and primary objects, in that it could quantify over them. I contrasted secondary objects with locatives, because locatives are never head-marked but are sometimes entailed. Preverbal quantification treated locatives as adjuncts regardless of their semantic relation to the verb (i.e. they could never be quantified over). In Chapter 5 we will see further evidence that secondary objects are true objects, while locatives are adjuncts. Recall that locatives are obligatory for certain motion verbs. However, their obligatoriness does not seem to indicate argumenthood. Instead, we saw in §3.1 that obligatoriness overall does not distinguish grammatical functions. This suggests that

the obligatoriness of O'dam locatives has a pragmatic cause, rather than a syntactic one.

Chapter 5

Applicativization

O'dam has two applicatives, shown in (271) and (272) for the verb *miiya'* 'burn/light'. These applicatives are the primary way of augmenting a verb's valency.[1] As we will see in this chapter, each applicative suffix is specific about which verbs it combines with and the function it has. Notice that the verb *miiya'* can mean either 'light a fire', as in (271a), or 'burn', as in (272a). However, *-tuda* and *-dha* only combine with one use: the former combines with the 'light a fire' meaning, as in (271b) while the latter only combines with the 'burn' meaning, as in (272b). Moreover, the function of both applicatives when combined with *miiya'* is to introduce an external agent as the subject. Neither of the forms in (271b) or (272b) can be used to alter the non-applied verb meaning in any other way, e.g. by introducing a beneficiary.

(271)   a.   *miiya'* 'ignite'

Cham	*ji'xkat*	*ob*	*miiy-a'*	*gu*	*tai*	*no'=x*	*baa'*	*gu*
NEG	never	quickly	ignite-IRR	DET	fire	COND=COP	wet	DET

ku'aa'
firewood

'The fire will never light quickly if the firewood is green' [Nunca prende rápido el fuego si la leña está verde.] (Willett & Willett 2015: 126)

b.   *-tuda* 'make ignite'

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[1]Here I will be ignoring the putatively *-tu-lhi* bimorphemic causative suffix which consistently contributes an indirect causative meaning, see García Salido (2012: §3.2.3). Its consistent function makes it unhelpful in diagnosing argumenthood.

Tu'=ñ	*kɨ'n*	*Ø-mɨi-chdha-'*	*dhi=ñ*
what=1SG.SBJ	with	3SG.PO-ignite-APPL-IRR	DEM.PROX=1SG.POSS

dhuiñkar
pipe

'What am I going to light my pipe with?' [Con qué voy a encender mi pipa?]
(Willett & Willett 2015: 126)

(272) a. *mɨiya'* 'burn'

Mi'	*dhɨr*	*jap*	*bargi-dha-'*	*gu=ñ*	*mataima'n*	*no'=t*
DIR	from	2SG.SBJ	liquid-APPL-IRR	DET=1SG.POSS	nixtamal	COND=PFV

ba-gaa	*na*	*cham*	*mi'*	*mɨiy-a'*	*piam*	*jap*	*bhia'*
CMP-dry.PFV	SUB	NEG	DIR	burn-IRR	DISJ	2SG.SBJ	put.out.fire

no'=t	*ba-bhai*
COND=PFV	CMP-cook.PFV

'Wet my nixtamal[2] if it's dried so it doesn't burn or put out the fire if it's cooked.'
[Si mi nixtamal ya se secó, échale agua para que no se queme, o quítalo del fuego
si ya está cocido.] (Willett & Willett 2015: 126)

b. *-dha* 'make burn'

Tɨ-Ø-mɨi-dha-'-ap	*dhi*	*u'uan*	*na*	*ji'k*	*chamtu'*	*bhai'*
DUR-3SG.PO-burn-APPL-IRR-2SG	DEM	paper	SUB	some	NEG	good

'Burn papers that aren't good anymore' [Quema los papeles que ya no sirven]
(Willett & Willett 2015: 126)

I argue that the typology of functions the applicatives have are predictable based on
a) the transitivity of the non-applied verb and b) the semantic arguments of the non-applied
verb. This allows applicativization to be used to probe the syntactic argument structure of
the non-applied verb. As we will see in this chapter, the predictable function of the applicatives
follows other argumenthood tests in treating locative expressions and instruments as
syntactic adjuncts, regardless of any relationship they might have to the eventuality denoted
by the verb. We will see that O'dam applicativization must always introduce a new syntactic
argument. In all cases, the valency of the applied form is one greater than the valency
of the non-applied form. We will see that this will explain why ditransitives can never be
applicativized in O'dam: hypertransitivity is disallowed in O'dam grammar.

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[2]Nixtamal is a sort of dough made from ground corn kernels soaked in lyme used to make tortillas.

We will also see a thematic hierarchy in the thematic role of the applied argument. The thematic hierarchy, shown in (273), means that an applied argument can only assign the benefactive thematic role if there is no promotable object to license, which can only be promoted if an agent cannot be introduced. Rather than benefaction being a core part of applicativization, as is often assumed (e.g. Peterson 2007), my proposal is that benefaction is the elsewhere function of applicatives.

(273)   Agent < Promoted object [+ANIM] < Beneficiary

The hierarchy in (273) will especially come into play once we consider the verbs in §5.2 and §5.4, where the thematic hierarchy correctly predicts which verbs combine with which functions of the applicatives. Object promotion and benefactive licensing differ in that promoted objects always receive a thematic role that can be an argument of a non-applied verb, whereas beneficiaries must be licensed by an applicative (not counting analytic strategies for expressing benefaction). Their differing positions on the thematic hierarchy is consistent with the distinction made in preverbal quantification between *recipients* and *benefactive recipients* (see §4.2.1). They differ on their relationship to syntactic arguments of non-applied verbs, while the former can be arguments of non-applied verbs, the latter cannot. The former is a promoted object, while the latter is a thematic role assigned as an elsewhere case.

We will see that a crucial property of O'dam applicatives is that they are unambiguous in their function. If an applicative introduces an agent to a verb form, it cannot promote or introduce a benefactive in a different context with the same verb, as I mentioned for (271). Likewise, a promotative function of an applicative with a given verb disallows a benefactive interpretation for the applied object. This contrasts with languages like Kinyarwanda, which have applicatives with an ambiguous function. The *-ish* morpheme in Kinyarwanda is ambiguous in whether it introduces an instrument object, as in (274a), or an agent subject, as in (274b). The ambiguity is constrained in certain cases based on the lexical semantics of the verb (Jerro 2017). The ambiguity of *-ish* is not true for the O'dam applicatives.

(274)   a.   *Umw-arimu*   *y-a-ndik-ish-ije*   *in-kuru*   *i-karamu.*
              1-teacher   1SBJ-PAST-write-ISH-PERF   9-story   5-pen

         'The teacher wrote the story with a pen.'

b. *Umw-arimu*   *y-a-ndik-ish-ije*   *umw-ana*   *in-kuru.*
    1-teacher   1SBJ-PAST-write-ISH-PERF   1-child   9-story

    'The teacher made the child write the story.'   (Jerro 2016: 104)

In §5.1 I show that intransitive verbs and a restricted group of transitive verbs combine with O'dam applicatives to gain external agents. I then use these facts to argue that locative expressions are adjuncts because they permit agent-licensing (i.e. they do not count towards the transitivity of the non-appled verb). In §5.2 I discuss the types of verbs that combine with the promotative function of O'dam applicatives, and use this to further show that locative expressions are syntactic adjuncts, because they are consistently promoted to object. Finally, in §5.4 I discuss the types of verbs that gain beneficiaries when combined with applicatives and argue that beneficiary introduction is the elsewhere function of O'dam applicatives, rather than its core function.

5.1   Agents

In this section I show that the O'dam applicatives must introduce agents to intransitive verbs. I then show that the exceptions to this rule are certain classes of transitive verbs that often pattern with intransitives in other languages, and denominal verbs of creation where the incorporated noun satisfies one of the verb's thematic roles. This will then play into my discussion of the adjunct status of locative participants in §5.3, because verbs which have an ostensibly locative object thematic role (i.e. goal or source) behave like intransitive verbs.

We have already seen a case with the two meanings of *mɨɨya'* 'burn' and 'ignite' in (271) and (272) that the *-dha* and *-tuda* applicatives display causative-applicative syncretism, where an applicative morpheme can act like a causative morpheme to introduce an agent (Jerro 2017; Shibatani & Pardeshi 2002). We see this in (275), where the *nga-l* derivational suffix can act as a causative, as in (275a), or act in a more prototypically applicative way, by introducing a comitative, as in (275b), or an instrument, as in (275c).

181

(275)   Yidiny (Shibatani & Pardeshi 2002: 166, citing Dixon 1977: 293–322)

    a.   *Bimbiːng*   *nganyany*   *wudingalnyu*
          father.ERG   I.ABS   bring_up.*ngal*.PAST

        'Father brought me up' (Causative)

    b.   *Wagudanggu*   *wagal*   *nyinaːngal*
          man.ERG   woman.ABS   sit.*ngal*

        'The man is sitting with [his] wife.' (Comitative)

    c.   *Gini*   *buyal*   *bamaːl*   *dumbaːdingal* *bunya-nda*
          penis.ABS   strong.ABS   person.ERG   swive.*di.ngal*   woman-DAT

        'The man will swive (copulate with) the woman with [his] strong (i.e., erect) penis.' (Instrumental/Applicative)

Shibatani & Pardeshi (2002) combine typological evidence from a range of languages: Australian languages (Austin 1997), Hualapai (Ichihashi-Nakayama 1996), Malay (Yap 1998), Bella Coola (Saunders & Davis 1982), and Kinyarwanda (Kimenyi 1988).[3] They find a broader pattern whereby causatives that have an applicative function also have a sociative causative function, as in Yidiny in (275), which they propose is the linkage between causative and applicative functions. Moreover, Austin (1997) finds that unaccusative verbs (ones with a patient-like subject) generally gain an agent, whereas O-licensing functions (instrument, comitative, etc.) arise more commonly in unergative verbs (ones with an agent-like subject).

The problem with this causative-applicative syncretism analysis is that it presupposes that causatives and applicatives are fundamentally different types of morphemes: the former licenses A arguments, while the latter licenses O arguments. This presupposition is difficult to maintain for O'dam. We see in (276) that the *-tuda* applicative combines with the intransitive base *sø̸'* 'be hanging' to form a causative verb *sai'-chdha'* 'hang something'. The same is true for *ii'mchu'* 'suffocate.INTR' in (277b).[4]

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   [3]Although see Jerro (2017) for reasons to think that the other functions of the Kinyarwanda causative are derived from a single proceess (i.e. the functions are not distinct).

   [4]I analyze *ii'mchu'* as combining with the *-tuda* suffix despite the apparent disappearance of the final [chu] segment of the base form. The surface phonology of the applied form disallows the *-dha* applicative suffix because we would expect the applied form [ii'mchu(i)-dha], wherein crucially the /d/ of the applicative is

(276)   *Sę́’* 'be hanging' > *Sai'-chdha'* 'hang.TR'

    a. *Bha=ñ*   *bhɨi-ñ*   *dhi*   *asaak* *na*   *basɨ'n* **sę́'** *klaabus-ta'm*
        DIR=1SG.PO bring-APPL DEM asaak SUB above hang nail-on

        'Give me that asaak[5] that is hanging on that nail [Dame esa talega que está colgada en ese clavo]' (Willett & Willett 2015: 151)

    b. *Sai'-chdha-'-ap*   *dhi*   *arpuus* *na*   *cham* *mi'* *tu'*
        hang-APPL-IRR-2SG.SBJ DEM.PROX arpuus SUB NEG DIR something

            tooxkalh *kɨi'-ka-'*
            pig   chew.PFV-ST-IRR

        'Hang up the arpuus,[6] you don't want a pig to get it [Cuelga el morral, no sea que algún marrano se lo lleve]' (Willett & Willett 2015: 149)

We see likewise in (278) that the *-dha* applicative also licenses an agent for the intransitive verb *tɨsdha'* 'go up,' which becomes an external causer of the event, as in (278b).

(277)   *ii'mchu'* 'suffocate.INTR' > *ii'm-chuda'* 'suffocate.TR'

    a. *Asaak-cha'm* *jap*   *gaamtu'n-da'*   *dhi* *takaarui'* *na*   *ba'*   *cham*
        Asaak-in   2SG.SBJ put.inside-CONT DEM chicken   SUB SEQ NEG

            ii'mchu-'
            suffocate.INTR-IRR

        'Put the chicken in a bag (to carry it) so that it does not suffocate' [Lleva la gallina metida en una red para que no se asfixie] (Willett & Willett 2015: 70)

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palatalized (see Everdell 2021b; Willett 1981 and Gouskova 2003 for relevant phonological rules). It is likely that the underlying applied form is /iibhitu-tuda/ yielding the citation forms *ii'mch-chuda'* or *ii'm-chuda'*, after accounting for vowel and syllable effects. However, to my knowledge there is no surface difference between /chch/, and /ch/ so that the two morphophonological glosses would yield homophonous surface forms. I leave it to future researchers to improve my admittedly basic morphophonology.

[6]An *asaak* is a type of handmade bag made of mesh ixtle fiber typically used to carry things other than corn. They are generally decorated with simple designs, especially as compared to the elaborate *bhai'mkar* bags.

[6]An *arpuus* is a type of handmade bag made of cotton used to carry corn.

b.   *Na=p*   *jax*   *dhui*   *ii'm-chu'n-da'*   *dho*   *jia*
     SUB=2SG.SBJ   how   EVID.DIR   breathe-APPL-CONT   EVID.DIR   RET

       dhi   *Liino*   *ku=p*   *ba'*   *baidh-im*   *na=p*   *biim*
       DEM.PROX   Lino   SUB=2SG.SBJ   SEQ   invite-PROG   SUB=2SG.SBJ   with

       koox-mɨra'   *jax*   *dhui*   *na=p-gu'*   *giilhim*   *tu-boppo*
       sleep-MOV   how   EVID.DIR   SUB=2SG.SBJ-ADVR   a.lot   DUR-lie.PL

       Iliiyas   *jup*   *tɨtda*   *gu*   *di'ɨɨ'n*
       Eliás   IT   say   DET   mother.POSSD

     ' "You almost suffocate Lino when you invite him to sleep with you, Elias, because you move so much in your sleep", her mother said.' ["Cuando invitas a Lino a dormir contigo, casi lo afixias, Elías, pues tú te mueves mucho cuando duermes", le dijo su mamá.] (Willett & Willett 2015: 69)

(278)   a.   *Tɨsdha-'*   *gu=ñ*   *gagoox*   *na=ñ*   *pai*   *bopoo*
         go.up-IRR   DET=1SG.POSS   dog   SUB=1SG.SBJ   where   bed

         'My dog is going to up onto my bed'

    b.   *Añ*   *tɨsa'ñ-dha-'*   *gu=ñ*   *gagoox*   *na=ñ*   *pai*
         1SG.SBJ   go.up-APPL-IRR   DET=1SG.POSS   dog   SUB=1SG.SBJ   where

           bopoo
           bed

         'I'm going to put my dog up on my bed'

What is common across verbs that gain an external agent from applicativization is that they are intransitive. We see in Table 5.1 that the intransitive bases which combine with the applicative suffixes gain an external agent, which is co-referenced by the subject. Importantly, the verbs in Table 5.1 span a variety of semantic verb classes, including unaccusatives (e.g. *tuklhia'* 'blacken.INTR')[7] and unergatives (e.g. *koxia'* 'sleep'). This suggests that agent-introduction is the only function of O'dam applicatives when combined with an intransitive base.

Intransitive Base	Applied
baigɨkia' 'swell'	*baigɨk-chuda'* 'make swell'
bamgia' 'wake up.INTR'	*bamii'ñ-dha'* 'wake someone up'

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[7]Unaccusatives cross-linguistically undergo the causative-inchoative alternations that the O'dam applicative suffixes give rise to; see Haspelmath (1993) and Levin & Rappaport Hovav (2005)

batbia' 'bathe'	*batbi-chdha'* 'bathe someone'
ba'nnia' 'get wet'	*ba'nni-dha'* 'make wet'
bhai'mu'∼*bhai'ku'* 'drown.SG/PL'	*bhai'm-tuda'* ∼ *bhai'k-tuda'* 'drown.SG/PL someone'
bhaya' 'cook.INTR'	*bhai-dha'* 'cook.TR'
bhiikchia' 'hang oneself'	*bhiik-chuda'* 'hang someone'
da'ya' 'fly'	*dai-chdha'* 'make fly'
dodhia' 'recover (from illness)'	*dua'ñ-dha'* 'cure, heal someone'
gakia' 'dry.INTR'	*gakii'ñ-dha'* 'dry.TR'
gisaru' 'cook stew.INTR'	*gisalh-dha'* 'cook stew.TR'
gɨ'lhia' 'grow, develop'	*gɨ'lh-dha'* 'raise, make grow (animate object)'
gɨ'mda' 'calm down'	*gɨ'm-chuda'* 'calm someone down'
i'mu' 'sunbathe, get sun'	*i'mu-tda'* 'let something get too much sun'
jibua' 'drop'	*jibai-dha'* 'knock over'
jidhoora' 'cook in water.INTR'	*jidhoolh-dha'* 'cook in water.TR'
jɨkgia' 'become content, become happy'	*jɨkgɨ-tda'* 'encourage, cheer up'
jɨlhbia' 'make air.INTR'	*jɨlhbi-dha'* 'shake, blow (air)'
jɨɨmia' 'laugh'	*jɨm-chuda'* 'make laugh
jɨplhia' 'become cool'	*jɨp-dha'* 'cool something down'
joñia' 'move.INTR'	*joiñ-dha'* 'move.TR (inanimate patient)'
juukgia' 'heat up.INTR'	*jukañ-dha'* 'heat up.TR
kɨkbo' 'stand up'	*kɨkbui-chdha'* 'help someone stand up'
kokda' 'fight.INTR'	*kokdhi-chdha'* 'make fight (plural object)'
koxia' 'sleep'	*kox-chuda'* 'put to sleep'
kubha'bñia' 'tarnish.INTR'	*kubha'bi-dha'* 'tarnish.TR'
maimu' 'get drunk, get poisoned'	*maim-tuda* 'make drunk, poison'
mɨɨya' 'burn.INTR'	*mɨi-dha'* 'burn.TR'
mɨɨya' 'ignite.INTR	*mɨi-chdha'* 'ignite.TR'
mɨlhia' 'run'	*mɨlh-chuda'* 'make run
sasbak 'gurgle'	*sasbak-chuda'* 'make gurgle'
ñiñia' 'wake up.INTR'	*ñiñii-chdha'* 'wake up.TR'
oilhia' 'walk'	*oilhi-chdha'* 'make walk'
suuduya' 'fill.INTR'	*suudui-dha'* 'fill.TR'
tɨbiapu' 'stay (the night)'	*tɨbaip-tuda'* 'give hospitality (for short time)'
tɨsdia' 'climb'	*tɨsaa'ñ-dha'* 'raise, make climb'
toiñdhia' 'have a fever'	*tonii'ñ-chuda'* 'give fever'
toksolhia' 'foam'	*toksolh-dha'* 'make foam'
torkia' 'bark'	*torki-dha'* 'make bark'
totpokia' 'boil.INTR'	*totpox-dha'* 'boil.TR'
tuklhia' 'blacken, darken.INTR	*tuk-chuda'* 'blacken, darken.TR'
ya'aa' 'urinate'	*ya'-tda'* 'make urinate'

Table 5.1: Intransitive verbs that gain an agent from an applicative (not exhaustive)

Moreover, verbs in similar semantic classes as those in Table 5.1, for example cooking verbs, do not receive an external agent from the applicative when they have a transitive base. Most cooking verbs have intransitive bases, as shown in (279), however, *junmada'* 'make mole (out of something)' has a transitive base, evidenced in (280a), where the base form is compatible with the *-xim* resultative suffix, which is only compatible with verbs with both agent and patient arguments (Willett 1991: 69–72).[8] As such, *junmada'* 'make mole (out of something)' does not gain an external agent when combined with the *-dha* applicative, as shown in (280b). Instead, the *-dha* applicative introduces a recipient beneficiary, which as we will see in §5.4 is common for transitive bases. Thus, the agent-licensing function of the O'dam applicatives is primarily conditioned based on the transitivity of the base, rather than its semantic class.

(279) a. *totpokia'* 'boil.INTR' > *totpox-dha* 'boil.TR'

  b. *guisaru'* 'cook stew.INTR' > *guisalh-dha'* 'cook stew.TR'

  c. *bhaya'* 'cook.INTR' > *bhai-dha'* 'cook.TR'

  d. *jidhoora'* 'cook in water.INTR' > *jidhoolh-dha'* 'cook in water.TR'

(280) *junmada'* 'make mole (out of something)' > *junmax-dha'* 'make mole (out of something) for someone else'

  a. | *Gu* | *bho'mkox* | *joidham* | *jix=i'ob* | *gu* | *gai'-xim* | *piam* |
      |------|-----------|-----------|-----------|------|-----------|--------|
      | DET | squirrel | enjoy | COP=tasty | DET | roast-RES | or |

     junma-xim
     stew.with.mole-RES

     'Squirrel (meat) is delicious roasted or made into a mole' [La carne del techalote es sabrosa asada o guisada con mole] (Willett & Willett 2015: 94)

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[8]Willett (1991) focuses on the *-ix* resultative suffix, which to my knowledge is not compatible with *junmada'*. To my knowledge, *-xim* and *-ix* are lexically conditioned allomorphs (i.e. likely diachronically distinct but synchronically indistinct), although there may be an aspectual differences in the types of results they express. I leave this question to future researchers.

b.

Añ	*ya'*	*t<del></del>ii*	*junmaxi-'ñ*	*gu=m*	*taat*
1SG.SBJ	DIR.PROX	INT.NR	stew.with.mole-APPL	DET=2SG.POSS	father

dhi	*bho'mkox*	*na=t*	*jiñ-chia*
DEM	squirrel	SUB=PFV	1SG.PO-send

*I am making your father make the squirrel mole that he asked me to make
'I am trying to make the squirrel mole for your father that he asked me to make' [Aquí estoy tratando de hacer mole de techalote como me lo pidió tu papá] (Willett & Willett 2015: 94)

I would like to make a stronger statement, namely that the O'dam applicatives *must* license an agent for intransitive verbs. This stronger statement will enable me to examine motion verbs, which only co-reference a subject, but which ostensibly could have a locative object, such as for *aaya'* 'arrive' in (281). I will argue that verbs like *aaya'* 'arrive' combine with the applicatives, in this case *-tuda*, to license an external agent, shown in (281b), because their entailed locative participant is a syntactic adjunct (i.e. they are intransitive verbs).

(281) a.

Na	*pai'dhuk*	*ya'*	*a'j<del></del>i*	*tu-mak*	*gu*	*t<del></del>itbi-chuk*
SUB	when	DIR	arrive.PRES	DUR-give	DET	play-POSSD

'Every time he comes, he gives out toys.'

b.

Ja-ai-chdha-'-iñ	*gu=ñ*	*a'∼mi'*	*na*	*pai'*
3PL.PO-arrive-APPL-IRR-1SG.SBJ	DET=1SG.POSS	PL∼friend	SUB	where

kio	*gu*	*yami*
live	DET	Yami

'I am going to bring my friends back to where Yami lives'

Before arguing this, I must discuss some exceptions to the rule that all and only intransitive verbs gain an external agent when combined with the applicatives in §5.1.1. Specifically, we will see that transitive verbs that are high on Krejci's (2012) hierarchy of causativizability also gain external agents, whereas denominal verbs of creation gain beneficiaries. We will see that motion verbs do not fall into these narrow set of exceptional verbs and therefore support other argumenthood tests to suggest that locative expressions in O'dam are systematically adjuncts.

5.1.1 Exceptional Transitives

The first class of exceptions are syntactically transitive bases which gain an agent when combined with the applicatives, like intransitives. We see in (282a) and (283a) that the base form of the verbs are transitive in taking a primary object. In the applicativized forms in (282b) and (283b) the subject is now the agent of the event.

(282) a. *Maa'n* **ap** *mui'* *xi-Ø-bha'y-a'* *gu* *mo'* *ko'k* *bhaigɨm*
one 2SG.SBJ many IMP-3SG.PO-swallow-IRR DET head pain liquid

    no'=x *ko'k* *gu=m* *mo'*
COND=COP pain DET=2SG.POSS head

    'Drink headache medicine if your head hurts' [Si te duele la cabeza, tómate un remedio para el dolor de cabeza] (Willett & Willett 2015: 34)

   b. ***Jum-bhai'-chdha-'-iñ*** *gu* *kiis*
2SG.PO-swallow-APPL-IRR-1SG.SBJ DET cheese

    'I am going to forcefeed you cheese'

(283) a. *Cham* *pai'=ñ* *ñanmɨk* *ka'* *ba'* *gu'* *mi'* *pai'* ***xi-m-o'ñcho***
NEG where=1SG find.PRES or SEQ why DIR where IMP-MID-hide.ANIM

    tua-sanoop *na=ñ* *nɨi-'ñ* *na=ñ* *bhai'* *bajɨm*
oak-at.feet.of SUB=1SG.PO see-APPL SUB=1SG.SBJ DIR come

    'We have not found [Piliip] anywhere; he might have hidden under an oak tree when he saw that I was coming.' [No nos encontramos en ninguna parte, probablemente se escondió debajo de un encino cuando vio que yo ya venía] (Willett & Willett 2015: 142)

   b. ***Añ*** *ma=ñ* ***o'ñxi*** ***gu=ñ*** *bhu'ru'xi-'*
1SG.SBJ odd=1SG.PO hide.ANIM.APPL.PFV DET=1SG.POSS donkey-IAL

    cham *pai'* *tɨi=ñi-ch* *takaab* *na=ñ* *tɨi*
NEG where speak.PFV-1SG.SBJ-PFV yesterday SUB=1SG.SBJ INT.NR

    tu-ga'ngai-mɨk
DUR-search-PNCT

    'I've lost my donkey (lit. hid my donkey) I couldn't hail it yesterday while I was looking.' [Se me perdió un burro. No lo hallé ayer cuando lo estuve buscando] (Willett & Willett 2015: 142)

At the beginning of §5.1, I proposed that the agent licensing function of applicatives

can be used as an argumenthood test because of its restriction to intransitive verbs. I will also argue in §5.2 and §5.4 that the promotative and benefactive licensing functions of the O'dam applicatives require a transitive verb base. Therefore, the applicative behavior in (282b) and (283b) appears to be a worrying counter-example. However, when we look at the full list of exceptional transitive verbs in Table 5.2 we see that the agent-licensing function does not target a random assortment of transitive bases. The exceptional transitive verbs are verbs of perception ('see', 'hear'), verbs of ingestion ('swallow', 'drink') and lexical middle verbs. Lexical middles fall into two categories: the first is verbs like *saabu'* 'fast,' which must be reflexively marked, the second is verbs like *namkia'* 'meet,' where the subject and object participants can be switched without affecting the asserted event.

Transitive Bases	
bha'ya' 'swallow'	*bhai'-chdha'* 'forcefeed'
i'ya' 'drink'	*ii-chdha'* 'make drink'
kaaya' 'hear'	*kai-dha'* 'make hear'
namkia' 'meet'	*namki-chdha'* 'join'
o'ñcho' 'hide (animate subject)'	*o'ñxi-dha'* 'hide (animate object)'
saabu' 'fast'	*saab-tuda'* 'make fast (as punishment)'
tɨgia' 'see'	*tɨiñxi-dha'* 'show'
tulhiiña' 'suffer'	*tulhiiñ-chuda'* 'make suffer'

Table 5.2: Transitive bases which gain an agent when combined with an applicative

What unites these verbs against typical transitive verbs is that the transitive subject is not maximally distinct from the object (Grimm 2011; Inglese 2022). For all of these verbs, the event affects the subject as well as the object (Jackendoff 1990). Næss (2007) finds that such a property essentially makes these verbs atypical transitive verbs in that they pattern more like intransitive verbs rather than prototypical transitive verbs, as we see here. For example, the Lak language (Nakh-Dagestanian > Daghestanian) uses a double absolutive construction to convey that the action relates to the current state of the subject. Here, the verb *bax* 'sell',

shown in (284), can be used in the double absolute construction, as in (284b), to express that the agent is now homeless or much wealthier as a result of the selling.

(284)   Lak (Kazenin 1998: 112)

    a.   *Ga-nal*   *q̄at̄a*   *bax-l-ej*   *bu-r*
        he-ERG   house.ABS   3CL.sell-DUR-CVB.PRES   3CL.AUX-3SG

        'He has sold the house'

    b.   *Ga*   *q̄at̄a*   *bax-l-ej*   *u-r*
        he.ABS   house.ABS   3CL.sell-DUR-CVB.PRES   1CL.AUX-3SG

        'He has sold the house (and is therefore homeless, very rich, etc.)'

Cross-linguistically ingestive verbs allow object deletion and the formation of active resultative participles, giving them properties of both transitives and intransitives (Haspelmath 1994; Masica 1976, see also Alsina 1992; Jackendoff 1990 and Amberber 2002). Thus, while certain languages have strategies for minimizing the distinction between subjects and objects, certain semantic classes of verbs seem to lend themselves to minimally distinguished affector-affectee relationships. Telic transitive verbs are typically analyzed as having endpoints based on their patients (Kemmer 1993; Tenny 1994), yet verbs of eating pattern with inherently reflexive verbs in that their agent/subject can define the endpoint. In (285) the *in* PP generates an entailment that Vlad has reached some point of cleanliness acceptable to him. The sentence is still acceptable in a context where Vlad still has therapeutic mud (i.e. a mud bath) or body paint, so long as Vlad is satisfied.

(285)   a.   Vlad bathed **in forty-five minutes** #and still considered himself disgusting.

    b.   Vlad bathed **for forty-five minutes** and still considered himself disgusting.

Likewise, in (286) the endpoint of Courtney's eating is defined by her sense of fullness, the judgements in (286) are not altered by the amount of food left on her plate (Næss 2007: 77ff; cf Tenny 1994)

(286) a. Courtney ate **in forty-five minutes** #and still considered herself hungry

      b. Courtney ate **for forty-five minutes** and still considered herself hungry

In contrast, the completive *in* PP in (287a) is determined by the number of papers Gaby graded (i.e. there are no papers left ungraded), rather than her sense of the quality of their grading.

(287) a. Gaby graded the papers **in forty-five minutes** #and still did not consider them evaluated

      b. Gaby graded the papers **for forty-five minutes** and still did not consider them graded

Thus, Næss (2007) argues the agent subject is not maximally distinct from the patient/object and, therefore, they are not prototypical transitives. Linking verbs of ingestion to both unergatives and perception verbs, Nash (2020) examines the properties of the causee of causativized unergatives, ingestion verbs, perception verbs, achievements, and accomplishments in Georgian (Kartvelian>Georgic). Her findings, summarized in Table 5.3, show that verbs of ingestion and perception pattern with unergatives in their causativizing properties.

Agentive Predicate Type	Causative Marking	Locus of Causee	Embedded Predicate
Accomplishments	*a-...-in-*	Spec,ApplP - optional	Voice$_{Middle}$P
Achievements	*a-...-in-*	Spec,ApplP - obligatory	Voice$_{Middle}$P
Perception/Ingestion	*a-*	Spec,Voice$_{State}$P - obligatory	Voice$_{State}$P
Unergatives	*a-*	Spec,Voice$_{State}$P - obligatory	Voice$_{State}$P

Table 5.3: Summary of findings of causee properties of causativized agentive verbs in Georgian (Nash 2020: 392)

Notably, unergatives are the only intransitive verb class she examines, although she does find that unergatives are one of the only intransitive verb classes that shows a variable argument structure (see Nash 2018). Specifically, she finds that unergatives and verbs of ingestion and perception are causativized with the direct causative *a-*, whereas accomplishments and achievements must be causativized with the indirect causative *-in-* suffix. Additionally,

Nash (2020) argues that verbs of perception and ingestion are structurally analogous to unergatives, because they both require the same mediopassive Voice-Applicative Marker i-prefix in perfective tense-aspects. She attributes this fact to the interpretation of the subject of ingestive and perception verbs as both the initiator of the event and the recipient of the theme object (see also Jerro 2019 and Viberg 1983), again minimizing the distinction between the agent and patient of ingestive and perception events.

Krejci (2012), following Shibatani (2002), provides argumentation for the causativizability hierarchy shown in (288). This hierarchy captures the typological fact that single causativization strategies that affect middles and ingestive verbs also affect the intransitive verbal categories unergative and/or unaccusative verbs.[9] In contrast, simple transitive verbs are only grouped with middle and ingestive verbs by causativizing strategies that also affect unergatives.

(288)   **Hierarchy of causativizability (Krejci 2012: 21):** unaccusatives > **middles/ingestives** > unergatives > simple transitives

Krejci (2012) argues that the causativizability hierarchy in (288) arises from similar processes involved in forming the causative. Unergatives are intransitive, but they are similar to simple transitives in that causativization involves adding a second agent. While middles and ingestives appear transitive, Krejci (2012: 41ff) shows that two of their arguments are co-identified, namely the affector (initiator) and affectee (endpoint) (see also Krejci 2012: §5 for discussion of Marathi, which seems to antireflexivize like O'dam). The co-identified participants in lexical middles and ingestives act as a single internally complex participant, much like intransitives. This complex participant contrasts with true reflexives which are not necessarily always marked reflexively and have two separate participants (intiator and endpoint) which certain morphology may happen to co-reference. When marking a lexical middle

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[9]Nash's (2020) findings suggest that perhaps perception verbs should pattern with middles and ingestives.

or an ingestive with causative morphology, an antireflexivization process occurs, wherein the single internally complex participant is divided into two participants: one intiator and one endpoint. Krejci (2012) proposes that unaccusatives undergo the same process, an inchoative unaccusative is lexically reflexive with a single internally complex causer/patient participant, although not necessarily morphologically marked as such. The causative form of an unaccusative verb is formed by decoupling the causer and patient, to be identified with separate participants.[10]

We see in Table 5.4 Krejci's (2012) cross-linguistic findings, see Krejci (2012: 24-5) for relevant references.

Language	Causativizer	Unaccusative	Middles/Ingestive	Unergative	Simple Transitive
Slave	*-h-*	✓			
Mapudungun	*-ʼim*	✓			
Classical Nahuatl	*-tia*	✓			
Cora	*-te*	✓	✓		
Marathi	*-aw*	✓	✓		
Amharic	*a-*	✓	✓		
Ahtna	*-ł-*	✓	✓	✓	
Tariana	*-i-ta*	✓	✓	✓	
Malayalam	*-icc*	✓	✓	✓	
Basque	*-arazi*	✓	✓	✓	✓
Dulong/Rawang	*-shv*	✓	✓	✓	✓
Koyukon	*-ł-*	✓	✓	✓	✓

Table 5.4: Crosslinguistic application of causative processes by verb type (Krejci 2012: 24)

Something notable about the morphemes cited by Krejci (2012) for Cora and Classical Nahuatl, both Uto-Aztecan, is that causativization is their sole function.[11] As I will discuss in

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[10]Importantly for Krejci (2012), when a causative of an unaccusative verb is reflexivized it is a true reflexive, the causer and patient are linked to distinct co-referenced participants. They do not (re)form a single internally complex participant.

[11]See Vásquez Soto (2002) for discussion of causativization in Cora and Andrews (1988) and Launey (2002)

§5.2, the applicatives in these languages seem to cross-over to causation where other synthetic causativization strategies fail. If we were to place the O'dam applicatives into Krejci's (2012) table, they would fit perfectly with the Ahtna, Tariana, Malayalam group. As we will see, the verbs in Table 5.2 are lexical middles, verbs of ingestion, and verbs of perception. The major difference between what we see in O'dam and what Næss (2004), Nash (2020) and Krejci (2012) discuss is that the *-dha* and *-tuda* suffixes in O'dam are not only causatives, they also show canonical applicative functions, as we will see in §5.2 and §5.4.

Middle marking in O'dam is marked through a primary object prefix, shown in Table 5.5, and is syncretic with reflexive and reciprocal marking. The form of the middle marker depends on the person and number of the subject. When the subject is first person, the middle marker matches the 1SG and 1PL non-middle primary object marker. When the subject is non-first person, the middle marker is always homophonous with the 2SG primary object marker *(ju)m-*.

Person	Singular	Plural
1st	*(ji)ñ-*	*(ji)ch-*
Non-1st	*(ju)m-*	*(ju)m-*

Table 5.5: Middle markers in O'dam

We see examples of middle constructions in (289). The sentence in (289a) shows a use of the middle where the object is existentially interpreted. Note that the verb is still transitive in its head-marking, but the teachee has been suppressed (i.e. it cannot occur in the clause). In (289b), the reciprocal construction expresses a complex event wherein the members of the plural subject take on both teacher and teachee roles across multiple events (Givón 2001). Finally, (289c) shows a reflexive construction, whereby the thematic roles of the subject and object are assigned to the same referent.

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for discussion of causativization and applicativization in Classical Nahuatl.

(289) a. Middle
Dhi'　　*na-p-pai'*　　　*jum-mamtuxdha-'*
DEM.PROX　SUB=2SG.SBJ-where　MID-teach-IRR

'This is where you teach'

b. Reciprocal
Dhi'　　*na-pim-pai'*　　*jum-mamtuxdha-'*
DEM.PROX　SUB=2PL.SBJ-where　MID-teach-IRR

'This is where you.PL teach each other'

c. Reflexive
Gu　*espejo-ta'm*　*jiñ-nɨ~nɨi'ñ-iñ*
DET　mirror-in　1SG.PO-PL~see-1SG.SBJ

'I see myself in the mirror'

The verbs *saabu'* 'fast', *tulhiiña'* 'suffer', and *namkia* 'meet' appear to be lexical middle verbs. For O'dam, this means that they either a) always appear with middle marking, or b) only have a topicality distinction for middle versus non-middle marking. All instances I find of *saabu'* 'fast' and *tulhiiña'* 'suffer' involve middle marking. We see in (290) that the non-first person middle marker *(ju)m-* is prefixed on the perfective form *saab* 'fast.PFV'. Likewise, in (291) middle marking is evidenced by the 1PL subject marking in the second position, cliticized to the *ja'p* directional, and the 1PL primary object marking, which is cliticized to the *moo* preverbal dubitative marker.[12]

(290) *Cham*　*tu-kua-'*　　　*gu=ñ*　　　*chaat*　*na=ñ*　　　*tɨi*　　*chian*
NEG　DUR-eat.PRES　DET=1SG.POSS　father　SUB=1SG.SBJ　INT.NR　send.PFV

na　*tu-jugi-a'*　　*bɨi~pɨ'*　***jum-saab***　*sap*
SUB　DUR-eat-IRR　before　MID-fast.PFV　REP.UI

'My father did not want to eat a little while ago when I tried to get him to eat, he said he was fasting.' [No quería comer mi papá hace ratito cuando le ofrecí de comer, pues dice que está ayunando.] (Willett & Willett 2015: 148)

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[12]Syntactically, the primary object marker in (291) is part of the *tulhiiña'* 'suffer' verb. However, here it appears as a clitic because the dubitative *moo* is vowel final, which leads to certain prefixes containing V_{high} (i.e. /i/ or /u/) to cliticize in fast speech, see Willett (1991: §2.37).

(291) *Ja'p=**añi-ch***   *moo=**ch***   ***tulhii***   *bhɨjɨ* *bɨɨx* *boi*   *na=**ch***
  DIR=1PL.SBJ-PFV   doubt=1PL.PO   suffer.PFV   DIR   all   road   SUB=1PL.SBJ

  tɨi   *jim* *na=x*   *chukgam*
  INT.NR   go   SUB=COP   dark

'How I suffered going the whole way on the road because it was so dark' [Cómo sufrí por todo el camino porque estaba oscuro!] (Willett & Willett 2015: 173)

While *saabu'* 'fast' and *tulhiiña'* 'suffer' consistently appear with middle marking, the verb *namkia'* 'meet' allows middle or non-middle marking in its base form, shown in (292a) and (292b), respectively. Crucially, though, the middle marked form in (292a) and the non-middle marked form in (292b) do not differ in the event expressed. The middle marked form in (292a) expresses that the big rivers meet at some point, with no entailment that one river is the primary locus of the meeting event denoted by *namkia'*. Likewise, the sentence in (292b) does not entail that the subject or the object is the locus of the meeting event. It is felicitous in a case where the speaker intends to move towards Mike (e.g. at Mike's house), Mike intends to move towards the speaker (e.g. at the speaker's house), or in some equidistant location (e.g. between Mike and the speaker).

(292) a. *Giilhim*   *jix=io'm*   *gɇ'*   *ba-mɨr*   *gu*   *suudai'*   *mi'*   *dhɨr*
       a.lot   COP=very   large   CMP-run.PFV   DET   water   DIR   DIR

       na=pai'   *maap*   ***ba-m-naanak***   *gu*   *gɇ'~gɇr*   *a'~ak*
       SUB=where   together   CMP-MID-join   DET   PL~large   PL~river

'A lot of water flows from there, where the big rivers meet' [Ya corre mucha aqua de allá de donde se juntan los ríos grandes] (Willett & Willett 2015: 134)

   b. *Ø-namki-a'-iñ*   *gu*   *mike*
       3SG.PO-meet-IRR-1SG.SBJ   DET   Mike

'I am going to meet up with Mike'

All three verbs combine with the *-tuda* applicative to introduce an external agent, shown in (293), (294), and (295), respectively. We see in each case that the subject expresses the external agent that is introduced by the *-tuda* applicative.

(293) **Añ**   ya'   tɨi   saab-**tuda**-im   dhi   maachu'   na   giilhim
       1SG.SBJ   DIR.PROX   INT.NR   fast-APPL-PROG   DEM   stallion   SUB   a.lot

       jum-bua   na=ch   tɨi   ulhiis   kabuimuk   dɨr   jach   tɨi
       MID-do   SUB=1PL.SBJ   INT.NR   saddle   morning   DIR   1PL.SBJ   INT.NR

       ya'   ba-bur   na-pai'=x   chu-daapa-k
       DIR.PROX   CMP-tie.up.IMP   SUB-where=COP   DUR-~pluck-PNCT

'I am making this stallion fast because he does not like me to put the saddle on him so from the morning I tie him here where there is no grass (lit. it has been plucked)' [Estoy haciendo ayunar a este macho porque no le gusta que le ponga la silla de montar pues desde la mañana lo amarré aquí donde no hay pasto] (Willett & Willett 2015: 148)

(294) Gɘ́'~gɘ́r   jap   jup   tu-ja-maakai   dhi   tu~tuur   ap   jix=joi'ñdh-a'
       PL~large   2SG.SBJ   IT   DUR-3PL.PO-give   DEM   PL~bull   2SG.SBJ   COP=enjoy

       na=**p**   ba   ji   ja-tulhiiñ-**chuda**-'
       SUB=2SG.SBJ   already   FOC   3PL.PO-suffer-APPL-IRR

'Feed the bulls more, it is better if you do not make them suffer.' [Dales más de comer a los toros, pues no debes hacerlos sufrir.] (Willett & Willett 2015: 173)

(295) Kabuimuk   **jap**   dho   bhammɨ   ja'p   ba-Ø-namki-**chdha**-'
       tomorrow   2SG.SBJ   EVID.DIR   DIR   DIR   CMP-3SG.PO-join-APPL-IRR

       dhi=m   moika'n   na-pai'   dhɨr   mui'=p   ji   chu-moikdh-ix
       DEM.PROX=MID   plow   SUB-where   DIR   DIR=IT   FOC   DUR-plow-RES

       ka'   cham=aa   chi?
       or   NEG=Q   possible

'Maybe tomorrow when you arrive you can join the land you've been plowing to the other part that was already plowed, or is that not possible?' [Posiblemente mañana llegarás a juntar la tierra que estás preparando ahora con el otro pedazo que ya tienes preparado allá arriba, o no será posible?] (Willett & Willett 2015: 134)

We have seen in this section that the small set of transitive verbs which appear to counter my proposal that O'dam applicatives must introduce agents for intransitives do not. The exceptional transitive verbs in O'dam are exactly those verbs which cross-linguistically pattern with intransitive verbs in terms of argument expansion. I now turn to a set of exceptional intransitive verbs which appear to have an argument structure more similar to transitive verbs.

5.1.2 Denominal *-ta* verbs of creation

Denominal *-ta* verbs are another class of exceptions to my generalization that the applicatives add agents to intransitive verbs. These verbs are built from a nominal root which combines with the *-ta* verbalizer to form a creation verb. We see an exemplar paradigm in (296). The nominal root *ba'ak* 'house, building', shown in (296a), becomes 'build house(s), build building(s)' when combined with *-ta*, as in (296b). Finally, the *-ta* suffix is replaced by the *-tuda* applicative in (296c) to introduce a beneficiary to the creation event denoted by the verb in (296b). What we also see when comparing the *-ta* and *-tuda* forms in (296b) and (296c), respectively, is that only the latter form has a primary object prefix, which is co-referenced with the beneficiary. Despite the *mui'* 'many' quantifier forcing a plural meaning on the number of created houses, there is no *ja-* 3PL primary object prefix, which suggests that the creation verb in (296b) is intransitive.

(296)   a.   *ba'ak* 'house, building'

   b.   *Mui'*   *(*ja-)ba'k-cha-'-iñ*   *dhi-ñi*   *adobe-kɨ'n*
        many   (3PL.PO-)house-VBLZ-IRR-1SG.SBJ   DEM.PROX-VIZ   adobe-with

        'I'm going to build a lot of houses with this adobe.

   c.   *Makob*   *ja-ba'k-chuda-'-am*   *gu=r*   *gɇ'~gɇ'r*
        four   3PL.PO-house-APPL-IRR-3PL.SBJ   DET=COP   PL~big

        'They are going to build four houses **for the big ones**'

Most denominal *-ta* verbs pattern with *ba'kcha'* 'build houses', where the *-tuda* applicative replaces the *-ta* suffix and introduces a recipient beneficiary, as in (297), (298), and (299).

(297) a. *boik* 'chual, toasted elote'

b. | *Tu-gé̵~gé̵'* | *gu* | *junbaa'* | *gu=ñ* | *xiix* | *sap* | *na* |
|---|---|---|---|---|---|---|
| DUR-PL~roast | DET | elote | DET=1SG.POSS | older.sister | REP.UI | SUB |

tu-boik-ta-'	*na*	*junmadai*	*jugi-a'*	*pai'dhuuk*
DUR-chual-VBLZ-IRR	SUB	mole	finish-IRR	when

'My older sister is roasting elotes to make chuales for when we want to make a mole' [Mi hermana está asando elotes para hacer chuales, para cuando queria hacer mole.] (Willett & Willett 2015: 25)

c. | *Gok* | *ap* | *jiñ-boik-dha-'* | *Juana* | *kabuimuk* | *ka=t* | *añ* |
|---|---|---|---|---|---|---|
| two | 2SG.SBJ | 1SG.PO-chual-APPL-IRR | Juana | tomorrow | SUB=PFV | 1SG.SBJ |

chi	*junmadai-kɨ'n*	*ba-tu-jugi-a'*	*no'*	*xi'*	*cham*
possible	mole-with	CMP-DUR-finish-IRR	COND	too.little	NEG

ka-jai'ch	*na=ch*	*tu'-kɨ'n*	*tu-jugi-a'*	*pai'dhuuk*
PERF-EXIST	SUB=1PL.SBJ	something-with	DUR-finish-IRR	when

'Make me some chuales Juana so that if people finish the food, we can make more mole to eat' [Por favor, haz unos chuales mañana, Juana, por si algún día se acaba la comida, pueda tomarlos y hacerme mole para comer] (Willett & Willett 2015: 25)

(298) a. *asak* 'asak'[13]

b. *Tu-asak-ta-'-am*
DUR-asak-VBLZ-IRR-3PL.SBJ

'They are making asaks'

c. | *Tu-ja-aski-chdha-'-iñ* | *gui'* | *na=mɨ-t* |
|---|---|---|
| DUR-3PL.PO-asak-APPL-IRR-1SG.SBJ | DEM.DIST | SUB=3PL.SBJ-PFV |

jiñ-palhbui
1SG.PO-help.PFV

'I'm going to make asaks for those who helped me.'

(299) a. *tɨmaich* 'tamale'

b. *tɨmaich-cha-'*
tamale-VBLZ-IRR

'She's going to make tamales'

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[13]An *asak* is a type of bag made with ixtle fiber.

c. *tɨmaich-chuda-'*
tamale-APPL-IRR

'She's going to make tamales for him'

I find that certain denominal verbs have a nominal base that is not appropriate for a transfer of possession event and, therefore, the applied object is not a recipient beneficiary.[14] An example of this is shown in (300) where the introduced object is the other parent involved in "creating" and raising the child, which could be the mother *Juana* or the father *Juan.*

(300) a. *Baik   mar-ta-'-ap*
three offspring-VBLZ-IRR-2SG.SBJ

'You're going to have three kids.'

b. *Gok   Ø-mar-tuda-'-iñ*   *gu   juana/juan*
two   3SG.PO-offspring-APPL-IRR-1SG.SBJ   DET   Juana/Juan

'You're going to have two children with Juana/Juan.'

The applied denominal forms we saw in (296), (297), (298), and (299) involve the created object transferring possession from the creator (the subject) to the recipient (the applied object). My consultants report that all four applied forms would be odd if the creator maintained some ownership over the created object (e.g. if the built house was co-owned by the agent). A possible exception to this is the food items where the applied forms do not entail that the agent does not participate whatsoever in their eating, only that the purpose of their cooking is to give to the recipient. In contrast, the applied form in (300b) does not entail, or even imply, that the subject intends to leave the children with the other parent after they are born. Thus, rather than a recipient beneficiary, the applied object of *mar-tuda'* seems to be sociative causative, wherein the applied object is a co-agent of the creating event.

It is intuitively possible that the applied object is an instrument in (300b). However,

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[14]Recall in §4.2.1 that pure recipients are distinguished from recipient beneficiaries in that the latter cannot be quantified from the preverbal position, I maintain this distinction here.

the grammar of O'dam suggests that the applied object is a sociative causative. For other created object verbs, the non-applied form of the verb can appear with an instrument PP marked with *-kɨ'n*, shown in (301), which can refer to the material, *adobe*, or implement used to create the object, *jiñ-ño∼nob* 'my hands'. However, with the base form *marta'* 'have children', shown in (302), a *-kɨ'n* 'with' marked person is interpreted as either some kind of doctor/midwife/etc., who will aid with the birth, or someone who is being forced to create the children for the subject but would not be involved with the children afterwards (e.g. a forced breeding case).

(301)   *Ba'k-cha-'-iñ*   *adobe-kɨ'n/jiñ-ño∼nob-kɨ'n*
        building-VBLZ-IRR-1SG.SBJ   adobe-with/1SG.SBJ-PL∼hand-with

        'I'm going to build a house **with this adobe/with my hands**'

(302)   *Mar-ta-'-iñ*   *juana-kɨ'n*
        3SG.PO-offspring-APPL-IRR-1SG.SBJ   Juana-with

        'You're going to have children using Juana.'

Crucially, neither of these interpretations are similar to the interpretation of the applied object in (300b), which implies, although does not entail, that the person has volition and cares for the children after their birth.

In (303), we see that the applied form of *ak-cha* [river-VBLZ] 'make a river' does not introduce a beneficiary: compare (303a) to (303b) where neither expresses a beneficiary. Instead my consultants report that *akxi-dha'* expresses that the canal is being made to divert water flow for some reason. In (303b), the nominal *dhi' suudai'* 'this water' is the object of *akxi-dha'*. Thus, the applied object of *akxi-dha'* 'divert river' is the thing being diverted. Thus, this is a another instance of a *-ta* verb of creation combining with an applicative to license something other than a recipient beneficiary.

(303) a. *Gɇ'* *ba-tu-m-ak-cha-im* *mi=ñ* *ga'bhar-am* *na*
large CMP-DUR-MID-river-VBLZ-PROG DIR=1SG.SBJ milpa-through SUB

mi *mɨmra-da'* *gu* *suudai'*
DIR run.PRES.SG-CONT DET water

'A big river was made through my milpa because the water ran through it' [El agua corrió por mi milpa e hizo una gran zanja en ella] (Willett & Willett 2015: 7)

b. *Gai* *dhɨr* *jach* *ka-xi-Ø$_i$-akxi-dhai* *alhio* *[dhi* *suudai']$_i$*
hillside from 1PL.SBJ PERF-IMP-3SG.PO-river-APPL quickly DEM water

na=ch *jɨ'x* *pɨx* *i'chu* *na-gu'* *mi'* *pɨk* *mɨr*
SUB=1PL.SBJ some MIR drink SUB-ADVR DIR PART run.SG

na=ch *pai'* *o'lhiachi-a'*
SUB=1PL.SBJ where kneel-IRR

'Let's make a canal to divert this water from the hillside to a place where we can drink so it runs where we are kneeling.' [Vamos a hacer un canal para que el agua corra a un lado mientras tomamos, pues llega aquí donde nos vamos a arrondillar] (Willett & Willett 2015: 6)

Similarly to children, my consultants report that natural resources (rivers, mountains, forests, etc.) are typically not *owned* in O'dam communities. Instead the types of possession relations are more general associative ones, for example, 'this is the river of La Cofradía' meaning that this is the river that runs through La Cofradía. Because this is not a true ownership relation, my consultants report that it would be odd to involve a river in a transfer of possession event. While *mar-tuda'* 'have children with someone' and *akxi-dha'* 'make a canal to divert water' differ from other *-ta* verbs of creation, crucially, neither gains a new agent-subject from the applicative, so that they still differ from other intransitives

Additionally, in (303a) we see that these denominal *-ta* verbs have a unique property of permitting middle marking, despite their typical lack of object co-reference. Intransitives in O'dam typically do not permit middle marking, we see in (304) that the verb *ɨɨkaya'* 'be shady' cannot take a middle, even when the sentence is a generic statement. Likewise, when the sentence in (305a) expresses a property of the subject, which is a common use of middles (Ackema & Schoorlemmer 2017), the intransitive form can be used, but not with middle

morphology. Instead, if the speaker chooses to use middle morphology, they must use the transitive form *jaiña'~jaisa'* 'break.SG/PL', shown in (305b).

(304) *Chɨ-(*(ju)m)-ɨɨkaya-'*   *na=pai'dhuuk*   *bhai'*   *chɨbgilhi-a'*
       DUR-MID-be.shady-IRR   SUB-when   DIR   become.cloudy-IRR

     'There are shadows whenever it gets cloudy'

(305) a. *Dhi'-ñi*   *dhi*   *taa~tas*   *jix=bhai*   *na=m*
           DEM.PROX-VIZ   DEM.PROX   PL~cup   COP=easy   SUB=3PL.SBJ

        (*jum)-jaiki-a'
        MID-break.INTR-IRR

     'These glasses here break easily'

    b. *Dhi'-ñi*   *dhi*   *taa~tas*   *jix=bhai*   *na=m*
           DEM.PROX-VIZ   DEM.PROX   PL~cup   COP=easy   SUB=3PL.SBJ

        jum-jaisa-'
        MID-break.TR.PL-IRR

     'These glasses here break easily'

Here the middle prefix creates a passive like reading, where the agent is suppressed in the creation event. What is notable is that the incorporated nominal *ak* appears to be the promoted argument. This middle-marking suggests that these are not typical intransitive verbs, just as the transitive verbs discussed earlier were not typical transitives.

    Denominal *-ta* verbs also differ from other creation verbs in O'dam, which appear to have transitive bases, as in *uana'* 'write' in (306). For non-denominal creation verbs in O'dam, the theme must be co-referenced by a primary object prefix, such as 3PL *ja-* in (306), and can always receive a DP exponent, as in *gu libros*.

(306) ***(*Ja)**-u'~uan-'iñ*   *[gu   libros]$_{DP}$*
       3PL.PO-PL~write-1SG.SBJ   DET   books

     'I am writing books.'

In contrast, we see in (307) that the 3PL primary object prefix is ungrammatical with the

denominal *-ta* verb *ba'k-cha'* 'build houses'. While normally the created object of denominal *-ta* verbs can be interpreted as singular or plural, the preverbal quantifier *baik* 'three' in (307) is only compatible with the incorporated noun *ba'ak* 'house, building'. Therefore the created object is unambiguously plural. We also see in (308a) versus (308b) that the theme can only receive a DP exponent if that DP does not match the incorporated nominal.

(307) *Baik*   *(ja-)ba'∼pki-cha-'-iñ*
       three   3PL.PO-PL∼house-VBLZ-IRR-1SG.SBJ

       'I am going to build three houses'

(308) a.   **Baik*   *tu-aski-cha-'-iñ*   *gu*   *a'∼sak*
            three   DUR-asaak-VBLZ-IRR-1SG.SBJ   DET   PL∼asaak

            Intended: I am going to make three asaaks.

       b.   *Baik*   *tu-aski-cha-'-iñ*   *gu*   *bhai'mkar*
            three   DUR-asaak-VBLZ-IRR-1SG.SBJ   DET   bhai'mkar

            'I am going to make three bhai'mkar'[15]

This all suggests that the incorporated noun in denominal *-ta* verbs grammatically functions as a syntactic argument, even if its incorporation disallows primary object co-reference. This property of incorporated nominals is not particularly surprising: Baker (1988) argues that noun incorporation (at least incorporation of argument nouns) involves theta role assignment before the noun incorporates. Essentially, the denominal verb is transitive even if it only permits a subject, at least external to the verb; see also more recent work like McKenzie (2022), including discussion of non-argument incorporation.

The related language Tohono O'odham has a cognate suffix *-t* in which the incorporated noun patterns with transitive objects in all ways, except that it surfaces within the verb. A list of some denominal *-t* verbs in Tohono O'odham are shown in (309).

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[15]A *bhai'mkar* is a type of decorated bag, a *morral*, that is designed with complex colorful patterns.

[15]The 'make a bow' form is underlyingly /gaːt-t/ but the suffix does not produce any surface phonetic

(309) *ki:* 'house' > *ki:t* 'make a house'
       hoa 'basket' > *hoat* 'make a basket'
       ga:t 'bow' > *ga:t* 'make a bow'[16]

For example, the incorporated objects of these verbs can only be quantified by what Hale & Keyser (1997) call a "floating quantifier", *hema* 'one' in (310). Non-floating quantification is not possible for the incorporated nouns of these verbs, see also Zepeda (2016).

(310) *'A:ñi*   *'ant*   *o*   **hema**   *ha-ki:-t.*
       I   AUX1   FUT   one   3PL-house-MAKE

       'I am going to build a house'. (Hale & Keyser 1997: 217)

Hale & Keyser (1997) argue that denominal *-t* verbs in Tohono O'odham arise from the phonologically incomplete structure of the *-t* suffix. Because *-t* is not a phonologically well-formed verb in Tohono O'odham, it requires a complex V^0, which causes its object to incorporate to rescue the form. This leads to a morphosyntactic shift from the structure in (311a), where the created object sits in the complement position of the verb, to the structure in (311b), where the created object is incorporated. Crucially for Hale & Keyser (1997), because this process occurs through head movement, the created object can still function as a syntactic object.

(311) Derivation of Tohono O'odham *ki:-t* 'make a house' (Hale & Keyser 1997: 220)

a.

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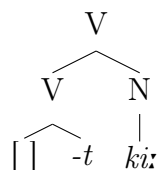
change because there is no phonological difference in Tohono O'odham between /t/ and /tt/.

b.

$$\begin{array}{c}
\text{V} \\
\diagup \diagdown \\
\text{V} \quad t_i \\
\diagup \diagdown \\
\text{N}_i \quad \text{V} \\
| \qquad | \\
ki\text{:} \quad \text{-}t
\end{array}$$
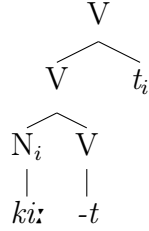
It is not clear if incorporation through head hovement would be appropriate for O'dam. As I showed in §2.3, it would be essentially a stipulation to say that the created object is generated in object position, because there is no evidence of a VP constituent. Moreover, to my knowledge nothing I have or will discuss in this dissertation depends on the DP that can optionally expone an object, or any other argument, being generated within the verbal word. In fact, as I discussed in §4.2.1, this would lead to some problems in accounting for the properties of preverbal quantifiers. For now it will suffice to say that O'dam *-ta* verbs have base intransitive forms, in the sense that they only permit a co-referenced subject. However, the *-dha* and *-tuda* applicatives treat them as transitive verbs, which is naturally explained if the incorporated noun is itself a second argument akin to an object, which triggers the applicatives' other functions.

So far, in this section I have argued that the O'dam *-dha* and *-tuda* applicatives must introduce external agents for intransitive verbs. We saw in Table 5.1 that the types of intransitive verbs that gain an external agent when combined with an O'dam applicative have a wide range of intransitive meanings. I then discussed two exceptions to my proposal that O'dam must license agents for intransitive verbs, a class of transitive verbs that gain an agent and a class of intransitive verbs that do not. In contrast to the normal intransitive bases, these exceptional classes are syntactically and semantically quite narrow, and I argued that essentially the co-referencing ability of the object miscategorizes these verbs. The exceptional transitives are lexical middles, ingestives, and verbs of perception, while the exceptional intransitive verbs are denominal *-ta* verbs. Cross-linguistically both of these

categories behave as non-standard members of their apparent valency class, transitive and intransitive respectively (see Næss 2007 and Krejci 2012 on lexical middles and ingestives and Johns 2017 on denominal verbs). The exceptions to my generalization of O'dam applicatives and intransitives essentially boils down to instances where applicatives and subject-object co-reference diagnose a different number of arguments. However, in §5.1.3 we will see that the subject-object co-reference and applicative behavior align on the same number of arguments. In §4.1 I pointed out that locative expressions are never co-referenced on the verb, and we will see that the behavior of applicatives treats locative expressions as separate from the verb's transitivity.

5.1.3 Intransitive Motion Verbs

Here I will concern myself with intransitive motion verbs, which only overtly co-reference a subject. I will return to transitive motion verbs in §5.2. Such verbs consistently combine with the *-dha* and *-tuda* applicatives to gain a new external agent. This is even true in cases where a location is a salient enough part of the verb's meaning that it could be seen as a strong candidate for a syntactic object. We see this in *bhɨɨya'* 'pass by' in (312), *aaya'* 'arrive' in (313), repeated from (281). In all of my examples of the base forms of both verbs (and other similar such motion verbs in this section) they co-occur with a locative expression in the same clause. We see in (312a) and (313a) that the proximate directional *ya'* appears in the preverbal position. Similarly, my consultants report that both sentences would be odd without the directional, even if that location was strongly established in the discourse (e.g. the location was the topic of the previous sentence).

(312) a. **Ya** *ja'p sap bhɨɨy-a' gu=ñ xiix kabuimuk na*
DIR DIR REP.UI pass-IRR DET=1SG.POSS older.brother tomorrow SUB

xi-m-namki-dha-' na jɨ'k pui'=m ua'tu'n
IMP-2SG.PO-cost-APPL-IRR SUB some SENS=2SG.PO owe

'My older brother supposedly is going to pass through here tomorrow to pay you what he owes you.' [Dice mi hermano que va a pasar por aquí mañana para pagarte lo que te debe.] (Willett & Willett 2015: 37-8)

b. *Paa=ch ja'k bhɨi-chdha-' dhi kabai? Na-gu' giilhim*
where=1PL.SBJ DIR pass-APPL-IRR DEM.PROX horse SUB-ADVR very

jix=babaa' bhai' dhi bɨɨxgai
COP=steep DIR DEM on.hillside

'Where are we going to make the horse pass through? The whole hillside is really steep [Por dondé vamos a hacer pasar al caballo? Pues toda la ladera está muy inclinada.] (Willett & Willett 2015: 37)

(313) a. *Na pai'dhuk **ya'** a'jɨ tu-mak gu tɨtbi-chuk*
SUB when DIR arrive.PRES DUR-give DET play-POSSD

'Every time he comes, he gives out toys.'

b. *Ja-ai-chdha-'-iñ gu=ñ a'~mi' na pai'*
3PL.PO-arrive-APPL-IRR-1SG.SBJ DET=1SG.POSS PL~friend SUB where

kio gu yami
live DET Yami

'I am going to bring my friends back to where Yami lives'

Likewise, manner of motion verbs, such as *mɨlhia'~bapooya'* 'run.SG/PL' in (314) and *jimia'* 'go, walk' in (315) gain a causer under applicativization, as do translational motion verbs, such as *tɨɨmi'* 'lower.INTR', in (316), and *tɨsdhia'* 'climb' in (317). In each case, we see that the relationships between the base form (the (a) examples) and the applied forms (the (b) examples) is one where the subject of the applied form causes the object to perform the event, whereas the subject of the base form performs the event. We additionally see in these verbs two different types of causation, discussed further in Everdell & García Salido (2022b). In (314b) and (315b) the patient maintains its volitionality, meaning that the horses

208

in (314b) and the donkey in (315b) are also doing the running and walking themselves. In contrast, the patients (316b) and (317b) do not have volition, in both cases the agent is interpreted as acting on the patient without the patient's volition (i.e. the patient is carrying the patient up or down).

(314) a. Mi   ja'p   giotɨr   pɨx   gan   bapo'-am
       DIR   DIR   on.plain   MIR   no.reason   run.PL-3PL.SBJ

   '[The horses] run over there [happily] on the plain'

   b. Ja-bapoi'-**chdha**-'-iñ   gu   ka∼kbai
      3PL.PO-run.PL-APPL-IRR-1SG.SBJ   DET   PL∼horse

   'I am going to run/ride (the) horses'

(315) a. Jimi-a'-ap   mu   tienda   na=p   tu-tañ-mɨra   gu   koka
       go-IRR-2SG.SBJ   DIR   store   SUB=2SG.SBJ   DUR-buy-MOV   DET   Coke

   'Go to the store and buy Cokes'

   b. Añ   Ø-jiim-**chudha**-'   gu   bhuru'x
      1SG.SBJ   3SG.PO-go-APPL-IRR   DET   donkey

   'I'm going to walk the donkey (around)'

(316) a. Bɨɨpɨ'=ch   bhai'   ka-xi-bhiiñor-a'   dhi   juun   ka-xi-chɨɨtmi'
       first=1PL.SBJ   DIR   PERF-IMP-carry-IRR   DEM   corn   PERF-IMP-lower

       gor   serrat
       HORT   for.a.moment

   'First we are going to carry this corn. Come down for a minute' [Bájense ustedes un rato, por favor. Primero vamos a cargar este maíz] (Willett & Willett 2015: 166)

   b. Xi-ja-tɨbañi-**'ñ**-apim   bɨx   gu   ta∼tkarui   mi-dhɨr
      IMP-3PL.PO-lower-APPL-2PL.SBJ   all   DET   PL∼chicken   DIR-on

   'Unload all the chickens from there!' (lit. lower all of the chickens from on there)

(317) a. Xib   kabuimuk   tɨsdhi-a'-iñ   dhi   oidhia'-ta'm
       now   tomorrow   climb-IRR-1SG.SBJ   DEM.PROX   mountain-on

   'Tomorrow I am going to climb up that mountain'

b. *Ø-tɨsa'ñ-**dha**-'-iñ*   *gu*   *oidha*
3SG.PO-climb-APPL-IRR-1SG.SBJ   DET   mountain

'I'm going to carry it up the mountain'

I must admit that I have no strict diagnostic for which verbs I have considered to have a putative locative argument here. The motion verbs I discuss here and in §5.2 are grouped based on my own intuitions that they might be good candidates for verbs with locative objects. Certain verbs, like *bhɨia'* 'pass by' and *aaya'* 'arrive', seem to require an overt locative expression, as noted in Chapter 3. However, I do find attestations of the verbs in (314)-(317) without locative expressions. We see this in (316a), where there is nothing in the clause expressing from where or to where the subject is descending. Because both of these verbs act the same with regards to applicatives, the apparent obligatoriness of the locative expression does not necessarily indicate syntactic argumenthood.

I have only found one motion verb that only co-references the subject (i.e. does not have an object it can co-reference), which does not gain an agent when combined with one of the applicatives. The intransitive verb *oilhia'* 'walk, move', shown in (318a), becomes 'follow' where the object is the leader, as in (318b). I would like to take a short side track to propose that *oilhia'* 'walk, move' is exceptional because posture verbs in O'dam are exceptional.

(318) a. *Chakui* ***tu-oirɨ*** *dhi*   *alhii* *sia* *ku* *tɨi*   *gook* *oidha'*
            still.no DUR-move DEM.PROX child EXPS SUB INT.NR two   year
            ba-bia'
            CMP-have

      'This child still can't walk even though he's already two years old' [Todavia no camina este nino, aunque ya tiene dos anos] (Willett & Willett 2015: 139)

  b. *Gu*   *ja-gagoox*   *ja-oi-dha-'*   *bɨx* *gu*   *a'~alh*
            DET   3PL.POSS-dog   3PL.PO-move-APPL-IRR all DET PL~child

      'Their dog will follow all of the children.'

Something peculiar about the verb *oilhia'* 'walk, move' that makes it differ from other motion

verbs is its involvement in the positional system, where O'dam follows many other Uto-Aztecan languages (see Langacker 1977: 39-43, Bascom 1965, and O'Meara & Guerrero 2015). This verb is also used as part of the posture verb system that is used for locative descriptions (see also García Salido 2017 and Everdell & García Salido 2022a). This is shown in (319), where the verb *kɨɨk* 'stand' relates to the shape of a tree.

(319) *Mi'*   **kɨɨk**   *ma'n* *gu*   *tua*   *bhai'=ñi-ch*   *ji*   *dhaibu*
       DIR   stand.SG   one   DET   tree   DIR=1SG.SBJ-PFV   FOC   sit

       'There was a tree (there stands a tree), and I climbed and sat there.' (Everdell & García Salido 2022a: 499)

In other cases, posture verbs seem to relate to default social status, rather than their true shape, as in (320), where the verb *daa* 'sit' is used for the locative description of the two women. My consultants report that the women are not necessarily sitting in the story (i.e. the verb just describes their location).

(320) *Dai* *sap* *ja'm-ni*   *gok* *am*   *bha* **daraa** *gu* *u'~ub*   *tɨ~tɨya*
       only REP.UI DIR-VIZ   two   3PL.SBJ DIR   sit.PL   DET PL~woman   PL~young

       'But that there were only two there (sitting), two girls' (García Salido et al. 2021a: S164)

Within the postural system, the verb *oilhia'* 'walk, move' and the existential *jai'ch* are somewhat unique, the latter seem unable to combine with the applicatives at all. First, *oilhia* and *jai'ch* seem to be used in cases where other posturals would be inappropriate. *oilhia'* is used in locative expressions of groups with mixed postures. This is shown in (321a) where the people at the party are of mixed ages and genders, which makes *guguuk-am* 'they stand' inappropriate, even if that is the most likely posture of the party attendees. We see the contrast in (321b), where the location of a group of domesticated animals, *sasoi'*, is expressed using *guguuk* 'stand.PL.ANIM' despite the probability that the addressee's animals are likely in a variety of actual postures (standing, laying down, walking around). The difference is that the group in (321b) are all of equivalent social status and can thus be described with a

single postural verb.

(321) a. *Mi* **oipo-'am** *quince gu ja'tkam mi piesta*
DIR move.PL-3PL.SBJ fifteen DET people DIR party

'Are there fifteen people at the party?' (Everdell & García Salido 2022a: 499)

b. *Bhammɨ=m* *pu=p* *guguuk* *gu=m*
DIR.DIST=3PL.SBJ SENS=IT stand.PL.ANIM DET=2SG.POSS

sa~soi' *cham bha ja-saada-k-añi-ch*
PL~domesticated.animal NEG DIR 3PL-spur.on-PNCT-1SG-PFV

'Your animals were left there, I did not bring them' [Allá se quedaron tus animales, pues no los traje] (Willett & Willett 2015: 66)

In contrast, *jai'ch* seems to be used for subjects whose cultural status is undefined. For example, while *curanderos*[17] tend to be located with standing posture, doctors are simply located with the *jai'ch* existential predicate, shown in (322), which is the same predicate used for inanimates of unclear posture, as with lime in (323), where the existential *jai'ch* expresses the possible location of the lime used to nixtamalize corn.

(322) *Mia'n* **jaich-am** *gui'* *na=m* *jaroi' jich-rebisar-ka-'*
PROX EXIST-3PL.SBJ DEM.DIST SUB=3PL.SBJ who 1PL.PO-check-ST-IRR

'They [meztizo doctors] are close, the ones that check us.' (Everdell & García Salido 2022a: 499)

(323) **Jai'ch**=aa **gu** **jabook** **matai** *mi'-ñi bibiatam jup-kai'ch gu Juan*
EXIST=Q DET light lime DIR-VIZ spring IT-say DET Juan

pui'=ñ *dho* *tɇ-kɇɇ-ka-'* *na sap jai'ch jup-kai'ch*
SENS=1SG.SBJ EVID.DIR DUR-hear-ST-IRR SUB REP.UI EXIST IT-say

gu Peegro
DET Pedro

' "Is there lime in the spring?" Juan asked "I have heard that there is" said Pedro.' (Willett & Willett 2015: 76)

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[17]*Curanderos* are Indigenous medicine men. This term is used across Mexico to refer to practitioners of good/healing magic. They contrast with *bruja/os* who are practitioners of evil magic. For O'dam, *curanderos* and doctors play complementary roles in medicine. The former tend to spiritual ills (the envy of others, misfortune, mental health, curses, etc.), while the latter tend to physical ills (broken arms, viruses, etc.).

What all of this shows is that *oilhia'* 'walk, move' and other postural verbs are unusual in that they are ontologically classed as existential predicates rather than true verbs of sitting and standing one might find in a language like English (see also Everdell & García Salido 2022a). While *oilhia'* can be used to express motion, it also expresses the location of groups of mixed statuses, regardless of whether or not they are actually moving around. Other posture verbs have an exceptional relation to the O'dam applicatives, as we will see in §5.4, the base forms of other postural verbs do not combine with applicatives because they have suppletive inchoative and causative forms (i.e. the applicatives are blocked). In contrast, the existential *jai'ch* does not combine with any applicative. This all suggests that the applicatives in O'dam essentially cannot diagnose the argument structure of the postural verbs.

5.1.4   A summary of intransitives and pseudo-transitives under applicativization

We have seen in this section that external agents are introduced by applicatives only for intransitive verbs, and a select group of transitive verbs that are verbs of ingestion or perception, falling below unergatives on Krejci's (2012) causativizability hierarchy, or are lexically middle. I then used these facts to argue that motion verbs which only co-reference the subject are intransitive because they gain an external agent when combined with the applicatives but do not show any middle-like behavior. Finally, I showed evidence that verb class is highly relevant to the behavior of the O'dam applicatives. The motion verbs in this section gain external agents when combined with applicatives. This is compatible with my proposal in Chapter 4 that the locatives of these verbs are adjuncts. However, given only the facts shown so far, one could argue that O'dam does permit locative arguments, and that motion verbs are somehow semantically similar to ingestives and perception verbs. I will show that this view does not hold when we consider the promotional behavior of applicatives in §5.2.

5.2   Promotion

Transitive verbs in O'dam combine with one of two functions of the *-tuda* and *-dha* applicatives. The first, which I will discuss in this section, is the promotion function, whereby the applicative licenses an entailed semantic participant of the base form of the verb to be its syntactic object. The second, which I will discuss in §5.4, is the benefactive function, whereby the applicatives introduce a new benefactive object to the verb. In this section, I will argue that the promotion function of applicatives is triggered by verbs with an entailed participant that is not a syntactic object of the verb. A crucial feature of these entailed participants is that they correspond to thematic roles that are arguments of non-applied verbs. This is to say that O'dam applicatives must license a semantically entailed participant that could in principle be an argument as an object before a benefactive can be introduced, which I discuss in §5.4. I will then show that certain motion verbs in O'dam trigger the promotion function of the applicatives to promote an entailed locative to object status, along with an animacy entailment. As with the motion verbs in §5.1.3, I will propose that applicatives would only be able to promote locative participants to object if the locative participants entailed by the base form are syntactic adjuncts of the verb.

The promotion function of applicatives consists of promoting an entailed participant to object status. A common instance of this is for typical three place predicates, which are often base transitive in O'dam. To illustrate this, consider the contrast between *ga'ra'* 'sell' in (324) and *makia'* 'give' in (325).[18] While both verbs express three-participant events, seller-theme-buyer and giver-theme-recipient respectively, *ga'ra'* 'sell' is lexically transitive (seller and theme), while *makia'* 'give' is lexically ditransitive. In (324a) and (325a) we see that both verbs can appear with a DP expressing the theme with an existential recipient.

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[18]Food terms in O'dam are treated as mass nouns (i.e. morphosyntactically singular, but underspecified for number of individual units), I have chosen to use a plural interpretation here, but *gu mansaan* in these sentences could also express a singular apple.

The sentence in (325a) permits an additional meaning not available in (324a), where the recipient is interpreted pronominally. In (324b) we see that *ga'ra'* 'sell' cannot appear with both a DP referring to its theme and a DP referring to its recipient. In contrast, *makia'* can appear with theme and recipient DPs, as in (325b). Finally, the thematic role of the object of *ga'ra'* is only the theme, as in (324c), where a lone DP *gu Juan* may only refer to the theme, not the recipient. In contrast, a single object-referring DP with *makia'*, in (325c), may refer to either the theme or the recipient.

(324) a. *Añ   ga'ra   gu   mansaan*
          1SG.SBJ   sell   DET   apple

          'I sell apples'

      b. **Añ   ga'ra   gu   mansaan   gu   Juan*
          1SG.SBJ   sell   DET   apple   DET   Juan

          Intended: I sell apples to Juan

      c. *Añ   ga'ra   gu   Juan*
          1SG.SBJ   sell   DET   Juan

          *I sell to Juan
          'I sell Juan'

(325) a. *Añ   maak   gu   mansaan*
          1SG.SBJ   give   DET   apple

          'I give **her/him/out** apples'

      b. *Añ   maak   gu   mansaan   gu   Juan*
          1SG.SBJ   give   DET   apple   DET   Juan

          'I give apples to Juan'

      c. *Añ   maak   gu   Juan*
          1SG.SBJ   give   DET   Juan

          'I give Juan it/things'
          'I give Juan to her/him/them/out'

The differences between *ga'ra'* 'sell' in (324) and *makia'* in (325) suggest that the

recipient of the former is not a syntactic argument of the base verb. Likewise, the sentence in (326) suggests that the recipient of *ga'ra'* 'sell' is at the very least strongly implied. We see two clauses in (326), the first of which contains the transitive *ga'ra'* 'sell' and expresses that the speaker is going to the town of Huejuquilla with the intention of selling goat meat.[19] The second clause then expresses the speaker's hope of earning enough money. Thus, the second clause follows from a recipient established by the first clause.

(326)   *Ii*   *ku=ñ*   *moo*   **tu-ga'ra-ra-'**   *gu*   *ka~karbax*   *I'gokcham*
       RET   SUB=1SG.SBJ   doubt   DUR-sell-MOV-IRR   DET   PL~goat   Huejuquilla

         kat   *jañ*   *chi*   *ji'k*   *mi'=p*   *ba-tɨgi-a'*
         lay.down.INAN   1SG.SBJ   possible   some   DIR=IT   CMP-see-IRR

        'I'm going to go to Huejuquilla to sell goats, I hope I get enough (money) there.' [Voy a ir a Huejuquilla a vender chivas. Ojalá que obtenga suficiente dinero] (Willett & Willett 2015: 62)

In (327) we see a syntactically well-formed sentence again using the transitive from of *ga'ra'*. Outside of the elicitation context the sentence expresses that the speaker intends to sell *bɨx* 'all' of their mezcal in a location that is precise (i.e. an exact location rather than a general area), far off, and higher than the speaker, all communicated by the directional *bhammɨñi*. In the given elicitation context, *bhammɨñi* refers to a nearly inaccessible mountain peak where there is no reasonable prospect of potential customers. My consultants reported that the sentence in (327) is extremely odd and offered verbs meaning 'bring, carry' in place of *ga'ra'* 'sell' in the given context. One commented "Well, you say you want to sell all your mezcal but who will buy it? Do you mean that you are going to bring your mezcal to that mountain? Or carry the mezcal up the mountain?"[20] My consultants consistently rejected any use of *ga'ra'* 'sell' in any context where the subject knew there was no possiblity of a potential

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[19]The use of the verb *kat* 'lay down (inanimate subject)' expresses that the goats being sold are, or will be, dead.

[20]"Pues, dices que quieres vender toda tu vino pero quien va comprarlo, quieres decir que llevas el vino a aquella montaña, o lo subes?"

buyer. Thus, while only the agent and theme of *ga'ra'* 'sell' are syntactic arguments of the verb, the subject and object respectively, the recipient is still a semantic argument (i.e. it is entailed).

(327)   *Bhammɨ-ñi*   *ga'ra-'-iñ*   *bɨ*   *dhi*   *biiñ*
           DIST.HIGHER-VIZ   sell-IRR-1SG.SBJ   all   DEM.PROX   mezcal

           #I am going to sell all this mezcal up over there.
           Context: You point to a mountain peak where there is no road to and difficult to access (i.e. there is no chance of someone coming to buy your mezcal)

If we combine *ga'ra'* 'sell' with the *-dha* applicative, as in (328), the applied form *ga'lhi-dha'* now mirrors the behavior of *makia'* in (325). The recipient in (328a) can be referenced as 3SG, both the recipient and theme can receive a DP exponent, as in (328b), and a single DP can be interpreted as referring to the recipient, rather than the theme, as in (328c).

(328)   a.   *Añ*   *ga'lhi-dha-'*   *gu*   *mansaan*
               1SG.SBJ   sell-APPL-IRR   DET   apple

               'I sell her/him apples'

     b.   *Añ*   *ga'lhi-dha-'*   *gu*   *mansaan*   *gu*   *Juan*
               1SG.SBJ   sell-APPL-IRR   DET   apple   DET   Juan

               'I sell apples to Juan'

     c.   *Añ*   *ga'lhi-dha-'*   *gu*   *Juan*
               1SG.SBJ   sell-APPL-IRR   DET   Juan

               'I sell apples/things to Juan'

Rather than adding a new participant to the event denoted by *ga'ra'* 'sell', the *-dha* applicative promotes the implicit recipient to syntactic object. Another verb of selling is *abiaru'* 'sell on credit', borrowed from Spanish *fiar* 'sell on credit'. We see that the base form of the *abiaru'* in (329) shares the same properties as *ga'ra'* 'sell' in (324) and (327). In (329a) we see that the base form of the verb permits a single object-referring DP and, in (329b), that

the single object must be interpreted as the theme, not the recipient.[21] Finally, in (329c) we see that the non-applied form of *abiaru'* 'sell on credit' is unacceptable in a context where there is no potential recipient (i.e. the recipient is entailed).

(329) a. *Añ*   *abiaru-'*   *gu*   *mansaan*   *gu*   *paola*
       1SG.SBJ   sell.on.credit-IRR   DET   apple   DET   Paola

       Intended:I am going to sell apples to Paola on credit

    b. *Añ*   *abiaru-'*   *dhi*   *mansaan/gu*   *paola*
       1SG.SBJ   sell.on.credit-IRR   DEM.PROX   apple/DET   Paola

       'I am going to sell these apples/Paola on credit'

    c. *Gamɨjɨ*   *bhammɨ-ñi*   *tu-abiaru-'-iñ*   *gu*   *mansaan*
       1SG.SBJ   DIST.HIGHER-VIZ   sell.on.credit-IRR   DET   apple

       #I always sell apples on credit up over there
       Context: Pointing to a mountain peak where there is no road to and difficult to access (i.e. there is no chance of people coming to buy your apples)

As with *ga'lhi-dha'* in (328), we see in (330) that the *-dha* applicative licenses the recipient as an object so that the applied verb *abialh-dha'* 'sell to someone on credit' acts as a ditransitive. The recipient must be interpreted pronominally in (330a) rather than existentially, in other words, the recipient must be interpreted as 3SG in (330a), rather than via a discourse setting up a recipient with any φ-feature combination, as we saw for *ga'ra'* 'sell' in (326). Likewise, *gu mauro* in (330b) is interpreted as the buyer rather than the sold item, as in (329b).

(330) a. *Gamɨjɨ*   *Ø-abialh-dha-'-iñ*   *gu*   *mansaan*
       always   3SG.PO-sell.on.credit-APPL-IRR-1SG.SBJ   DET   apple

       'I always sell my apples to her on credit'

    b. *Gamɨjɨ*   *Ø-abialh-dha-'-iñ*   *gu*   *mauro*
       always   3SG.PO-sell.on.credit-APPL-IRR-1SG.SBJ   DET   Mauro

       'I always sell (apples/things) to Mauro on credit'

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[21]This makes the *gu paola* option in (329b) quite rude.

Promotion is not restricted to verbs of selling: we see a similar process across verbs of speaking. Notice that both sentences in (331) have hearers. In (331a), the hearers are implied by the context, the *nabat*[22] is the subject of *sopkia'* and the discourse implies that he is telling stories to the speaker and others, which is why they did not sleep well that night. The hearers here are inferred because the form *tu-sapook* simply means someone is telling stories. However, note in (331b) that the hearer cannot be expressed through either a primary object marker, or a DP.[23] My consultant notes that out of the context in (331a), it could refer to someone simply saying stories to themselves, although the verb is odd in a context where she is telling stories to no one (not even herself).

(331) a. *Maa'n-nim   ya'   tɨbia   maa'n gu   naabat   ja'p   mo*
       one-time   DIR.PROX   pass.night.PFV   one   DET   mestizo   DIR   doubt

       cham   bhai'=ch   koo∼kx-ich   na-gu'   bɨx   chukaa'
       NEG   good=1PL.PO   PL∼sleep-1PL.SBJ   SUB-why   all   night

       tu-sapook
       DUR-tell.story.PRES

       'One time here in the night, there was a mestizo, and we did not sleep well because he was telling stories all night.'[Una vez pasó la noche aquí un mestizo, pero no dormimos bien porque estuvo contando cuentos toda la noche] (Williams 2015: 155)

    b. **Ja'p   mo   cham   bhai'=ch   koo∼kx-ich   na-gu'   bɨx*
       DIR   doubt   NEG   good=1PL.PO   PL∼sleep-1PL.SBJ   SUB-why   all

       *chukaa'   tu-{**ch-**}sapook   {**gu   maara-'n**}*
       night   DUR-1PL.PO-tell.story.PRES   DET   offspring-IAL

       Intended: And we did not sleep well because he was telling stories all night **to us/to his daughter**

Conversely, the *-dha* applicative in (332a) licenses the hearer as the primary object. Rather

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[22]This is the O'dam term form someone who is not Tepehuan, or often, not indigenous. It is most commonly used to refer to *mestizos*, Mexican people of mixed indigenous and European ancestry, although it can also be used for non-Mexicans.

[23]I have only shown the DP here in the postverbal position, however, my consultants report that *gu maara'n* 'his child' is also unacceptable in the preverbal position.

than the hearer being inferred through discourse, the hearer must be the primary object. In (332b) we see that the applicative improves the unacceptable sentence in (331b).

(332) a. *Ea   na=ñ   maa'n **jum-**sopki-dha-'   na=ch*
         RET   SUB=1SG.SBJ one   2SG.PO-tell.story-APPL-IRR   SUB=1PL.SBJ

         kapbhai' ya'   pɨx   ka-daraa
         while   DIR   MIR   PERF-sit.PL

   'I'm going to tell you a story while we sit here with nothing to do.' [Voy a contarte un cuento mientras estamos aquí sin nada que hacer] (Willett & Willett 2015: 155)

   b. *Ja'p mo   cham bhai'=ch   koo∼kx-ich   na-gu'   bɨx   chukaa'*
      DIR   doubt NEG   good=1PL.PO PL∼sleep-1PL.SBJ SUB-why   all   night

      *tu-{**ch-**}sopki-'ñ*   *{**gu**   **maraa-'n**}*
      DUR-1PL.PO-tell.story.PRES-APPL   DET   offspring-IAL

   'And we did not sleep well because he was telling stories all night **to us/to his daughter.**'

The sole object of non-applied speaking verbs appears to be the theme. We see in (333) for the verb *iata'* that the thing talked about is a DP embedded in a *na* subordinate clause.

(333) *Ap   mi'   Ø-iat   na   gu   virus*
      2SG.SBJ   DIR   3SG.PO-lie SUB   DET   virus

   'You're lying about the virus'

The syntactic structure of the theme appears to be a small clause, which appears to be unique to speaking verbs. Typically embedded clauses require a verb (i.e. they are a full clause), however none of my consultants could identify a verb that would be appropriate following the subordinator in (333). It is possible that there is an elided verb within the *na* clause; this would be unique, though, for subordinated clauses which otherwise do not permit verb elision (recall from §2.3 that O'dam clauses generally do not allow verb elision).

As I discussed in §5.3, PPs and CPs are always co-referenced on the verb by 3SG, so the subordinate *na* construction embedding ensures that an overt nominal object will always

appear with 3SG object marking (because the subject marker is co-referencing a CP). Notice in (334a) that the pluralized noun *kakbai* 'horses' still does not permit the 3PL *ja-* primary object prefix. The exception to the 3SG marking is when the theme is a pronominal person, as in (334b),[24] where 1PL object marking is permitted on the verb, although notably it must refer to the theme of the lie, not the hearer. If the *ja-* prefix appears on the verb, as in (334b) it must refer to a person (i.e. my consultants found it odd for *ja-* in (334b) to refer to 'horses' or 'plates').

(334) a. *Ap*   *mi'*   *(*ja)-iat*   *na*   *gu=ñ*   *ka~kbai*
           2SG.SBJ   DIR   3PL.PO-lie   SUB   DET   PL~horse

       'You're lying about my horses'

       b. *Ap*   *mi'{=ch}*   *{ja-}iat*
           2SG.SBJ   DIR=1PL.PO   3PL.PO-lie

       'You're lying about us/them!'

The non-applied form *iata'* 'lie' is commonly used in cases where the hearer (in this case the speaker) is inferred. We see this in (335) where the clauses surrounding *ka' ba' gu' iat* 'or did he lie' generate an inference that the speaker was the recipient of Piliip's potential lie.

(335) *Jup*   *kai'ch*   *gu*   *Piliip*   *na*   *sap*   *kabuimuk*   *jimi-a'*   *mu*   *ja'k*   *pai'*
       IT   say   DET   Piliip   SUB   REP.UI   tomorrow   go-IRR   DIR   DIR   where
       Tuspa   *pu*   *cham*   *sap*   *bhai'*   *ka-jim*   *ka'*   *ba'*   *gu'*   *iat*   *na*
       Tuxpan   SENS   NEG   REP.UI   DIR   PERF-go   or   SEQ   why   lie   SUB
       mi'   *pɨx*   *jiñ-ɨ'nkiat*
       DIR   MIR   1SG-scare

       'Piliip said that tomorrow he's going to Tuxpan and he won't come back. Or did he just lie to scare me?' [Dice Felipe que mañana se va a Tuxpan y que no regresa. O nada más miente así para asustarme?] (Willett & Willett 2015: 68)

To show that the hearer is entailed by the base form *iata'* I contrast two frustrative

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[24]The variability of where the primary object prefix surfaces is morphophonological. As discussed in Willett (1991: §2.37) many morphemes in O'dam, not roots, that contain an initial [jV] segment lose that segment when they immediately follow a vowel and encliticize onto the preceding vowel.

221

particles in (336): *tɨi* and *tɨi=p*. These two particles differ on whether the event expressed by the verb necessarily occurred. The *tɨi* particle is used to express that the event did fully occur, but was somehow done in a poor manner. We see this illustrated in (336a), where the utterance expresses that the speaker did tell a lie (i.e. the event occurred) but she told the lie in a poor manner such that no one believed her. In (336b), we see the particle[25] *tɨi=p*, which expresses that the event did not entirely occur for some reason. For example, the first reading of (336b) expresses that the speaker almost told a lie but changed her mind for some reason and either told the truth or did not speak at all. As for the status of the hearer, *tɨi* can only be used in contexts where there is a potential hearer. In contrast, the *tɨi=p* particle can be used in a context where the speaker spoke a lie but no one was around to hear it, as in the second reading of (336b). This suggests that *iata'* entails at least a potential hearer for the lie (i.e. the recipient is entailed).

(336) a. *Añ*   ***tɨi***   *iata*
           1SG.SBJ   INT.NR   lie.PFV

           'I tried to lie (but no one believed me)
           #I tried to lie (but no one heard me)

       b. *Añ*   ***tɨi=p***   *iata*
           1SG.SBJ   INT.NR=IT   lie.PFV

           'I tried to lie (but I did not speak/told the truth instead)
           'I tried to lie (but no one heard me)'

As with *sopkia* in (332a), the applicativized form *iatgidha'* in (337)[26] the sentence expresses that only the 3SG pronominal referent heard the lie. The applicativized form in (337) thus promotes the hearer to the verb's object.

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[25]I am adopting the morphological analysis of the *tɨip* particle as /tɨi=jup/ /INT.NR=IT/ from previous work Willett (1991) and García Salido (2014). However, the interative particle *(ju)p* is not well understood and it is not clear to me that the meaning follows from the aforementioned combination. I leave it to future work to improve the morphological analysis of *tɨip*.

[26]Because perfective aspect in O'dam involves truncation (Willett 1981), the applicative in (337) is covert. The evidence that the applicative is there is in the form of the truncated verb; see the contrast with the perfective form, i.e. truncated form, of the base verb in (336).

(337) *Añ*   *tɨi*   *Ø-iatgi*   *dai*   *na=ñi-ch*   *ma'a'n*
     1SG.SBJ   INT.NR   3SG.PO-lie-APPL.PFV   but   SUB=1SG.SBJ-PFV   say

        na=r   *sɨlhkam*
        SUB=COP   true

     'I lied **to him** (poorly), but then I told the truth'

The promotion function of applicatives appears to be restricted to transitive verbs. To illustrate this, I would like to contrast two transitive verbs of hiding: *o'ñcho'* 'hide (animante subject)' and *ɨxcho'* 'hide (inanimate object)'. The verb *o'ñcho'*, shown in (338), used for animate subjects hiding themselves, which is a lexical middle (see Table 5.2). In (338) we see that the verb requires the *jum-* middle prefix, and Piliip is hiding himself. The verb *o'ñcho* is unacceptable without middle marking, as we saw for other lexical middles such as *tulhiiña'* 'suffer' and *saabu'* 'fast' in §5.1.1.

(338) *Paa*   *bam*   *na=m*   *gu*   *Piliip* *na=t*   *mɨjɨ* *ji*   *dhu?*
     where   get.up.PFV   SUB=3PL.SBJ   DET   Piliip   SUB=PFV   DIR   FOC   EVID.DIR

        jup   *kai'ch*   *gu*   *Makaario.*   *Cham*   *pai'=ñ*   *ñanmɨk*   *ka'*   *ba'*
        IT   say   DET   Makaario.   NEG   where=1SG.SBJ   encounter   or   SEQ

        gu'   *mi'*   *pai'*   **xi-*(m-)o'ñcho**   *tua=sanoop*   *na=ñ*
        why   DIR   where   IMP-MID-hide.ANIM.PFV   oak=at.foot   SUB=1SG.SBJ

        nɨi-'ñ   *na=ñ*   *bhai'*   *bajim?*   *jup*   *kai'ch*   *ɨp*   *gu*   *Juan*
        see-APPL   SUB=1SG.SBJ   DIR   come   IT   say   PART   DET   Juan

     ' "Where did you find Piliip? He went far," said Makaario. "We could not find him anywhere, probably because he hid under a tree when I was looking so I came back," responded Juan.' [–Dondé te concontró Felipe? Pues, se fue para allá – dijo Macario. – No nos encontramos en ninguna parte, probablemente se encondió debajo de un encino cuando vio que yo ya venía – respondió Juan.] (Willett & Willett 2015: 142)

In contrast, *ɨxcho'* is used for inanimate patients. The verb's (typically) animate subject hides the inanimate object. This is shown in (339a) where the hidden object *dhi kiis* 'this cheese' is inanimate. My consultants report that *gum xiku'* 'your younger brother' in (339b) is odd, they report that it is somewhat improved in a context where the brother is dead or unconscious, although they still strongly prefer *o'ñcho'* 'hide.ANIM'.

(339) a. **Ka-xi-Ø-ɨxcho-'-ap**   *dhi*   *kiis*   *na=m*   *cham*
PERF-IMP-3SG.PO-hide.INAN-IRR-2SG.SBJ   DEM   cheese   SUB=3PL.SBJ   NEG

           jich-jugii'ñ-dha-'   *gu*   *ja'tkam*
           1PL.PO-finish-APPL-IRR   DET   people

           'Hide this cheese so the people won't finish ours!' [Esconde el queso para que no se lo acabe la gente] (Willett & Willett 2015: 92)

     b.   *#Ka-xi-Ø-ɨxcho-'-ap*   *gu=m*   *xiku'*
        PERF-IMP-3SG.PO-hide.INAN-IRR-2SG.SBJ   DET=2SG.POSS   younger.brother

        Intended: Hide your younger brother!

Thus, while both verbs are transitive, they differ on the distinctness of their arguments (following Næss 2009). The subject and object of *o'ñcho'* 'hide.ANIM' are not distinct and, as discussed in §5.1.1, the *-dha* applicative, truncated in (340), introduces an external agent that hides an animate patient. In contrast, *ɨxcho'* 'hide.INAN' is prototyipically transitive because it involves an animate agent acting on an inanimate patient. Its prototypical transitivity means that it cannot gain an external agent from the applicative. The applied form *ɨxchoi-dha'* licenses a second object expressing the person the inanimate patient is hidden from. In (341) we see two DPs following *ɨxchoi-dha-'-iñ* 'I hide X from Y'. The first DP *gu biiñ* '(the) mezcal' expresses the patient and the second DP *gu=ñ jiikulh* 'father's younger brother' expresses who the speaker is hiding the mezcal from.

(340)   *Añ*   *ma=ñ*   *o'ñxi*   *gu=ñ*   *bhuru'xi'*
        1SG.SBJ   odd=1SG.PO   hide.APPL.PFV   DET=1SG.POSS   donkey.POSSD

        cham   *pai'*   *tɨi=ñi-ch*   *takaab*   *na=ñ*   *tɨi*
        NEG   where   speak.PFV-1SG.SBJ-PFV   yesterday   SUB=1SG.SBJ   INT.NR

        tu-ga'nmai-mɨk
        DUR-search-PNCT

        'I lost my donkey (lit. I hid my donkey from myself). He didn't come when I called him yesterday when I was looking for him' [Se me perdió un burro. No lo hallé ayer cuando lo estuve buscando] (Willett & Willett 2015: 142)

(341) *ɨxchoi-dha-'-iñ*   ***gu   biiñ   gu=ñ***
       hide.INAN-APPL-IRR-1SG.SBJ   DET   mezcal   DET=1SG.POSS

       jiikulh   *na=pai'dhuk   koxi-a'   mi'   pɨ   cham*
       father's.younger.brother   SUB=when   sleep-IRR   DIR   MIR   NEG

       ka-jai'ch-ka-'   *na=pai'dhuk   ñiñi-a'*
       PERF-EXIST-ST-IRR   SUB=when   wake.up-IRR

'I am going to hide the mezcal **from my uncle** while he sleeps, so there will not
be any when he wakes up.' [Voy a esconder el mezcal de mi tío cuando se duerma y
cuando se despierte, ya no habrá] (Williams 2015: 73)

As with verbs of selling and speaking, my consultants reject *ɨxcho'* 'hide.INAN', and *o'ñcho'*
'hide.ANIM', in contexts where the implicit object is not present (i.e. no one is looking for
the hidden thing). In contexts where there is no one looking for the hidden patient, my
consultants offer covering verbs like *iiña'* 'cover' or *kuupa'* 'enclose'. The verb *ɨxcho'* 'hide',
then, shows that the promotative function of the O'dam applicatives is not restricted to just
the recipient-like participants. Instead, the promotative function seems to be more generally
applied to verbs whose non-applied form a) is prototypically transitive and b) entails an
implicit participant.

In addition to the verbs with clearer implicit objects, there are three O'dam verbs
which seem to combine with the promotion function of the applicatives through their prop-
erties as speaking verbs. I will first discuss *aga'* 'speak' and *jiñkia'* 'yell', and then I will turn
to *torkia'* 'bark'. It is unclear whether the hearer is an implicit participant of all three. The
verb *torkia'* is also unique in being the only verb I have found to combine with more than
one function of the O'dam applicatives, both with the causative function and promotion
function. I will posit that this ambiguous combination between *torkia'* 'bark' and the *-dha*
applicative lies in the ambiguous status of dogs as creatures capable of speech.

The verb *aga'* 'talk' can be used in a way that focuses on the manner, rather than
a potential hearer, as in (342). In (342a), the speaking event as a whole is negated (i.e. a
potential hearer is not relevant) and in (342b) the utterance refers to the manner of speaking,

jix=gɨ'm 'seriously'. The latter manner use can also have an inferred hearer, as in (342b) where the context implies that the speaker spoke seriously to the person they did not want (i.e. the 3SG object of the subordinate clause).

(342) a.
Cham	*pu*	*kai'ñ-kam*	*up*	*tu-a'∼aga-chi-ch*	*mu*	*pai'*
NEG	SENS	hear-NMLZ	IT	DUR-say-1PL.SBJ-PFV	DIR	where

jich-gɨ∼gɨb-da'
1PL.PO-PL∼hit-CONT

        'We don't talk as we're fighting.' (Text_102010_HMA_GGS_Suesposo, 10:09)

  b.
Añ	*jix=gɨ'm*	*mu*	*tu-a'ga*	*na=ñ-gu'*	*cham*	*Ø-joiñ*
1SG.SBJ	COP=serious	DIR	DUR-say	SUB=1SG.SBJ-ADVR	NEG	3SG.PO-like

jia
RET

        'As for me, I talked very seriously because I did not want him, right?'
(Text_102010_CFC_GGS_Cuandolacuranderaeraniña, 15:01)

Likewise, the verb *jiiñkia'* 'yell' can be used in instances that focus on the manner of speaking. This manner-focused use is shown in (343) where the discourse implies that there are people around *gu maimkam* 'the drunk', but my consultants agree that the sentence could be uttered in a context where the drunk man is alone with just a stereo (i.e. no hearer).

(343)
Jiiñak	*gu*	*maim-kam*	*xi-chu-sab-da-t*	*chi*	*gu'*
yell.PRES	DET	drunk-NMLZ	IMP-DUR-play.music-CONT-IMPF	possible	why

joidham	*tɇ-kɇɇ*	*na*	*ba-x=maim*
enjoy	DUR-listen.PRES	SUB	CMP-COP=drunk

    'The drunk is yelling with the music, he probably likes listening to it, and he is drunk.' [El borracho está gritando con la música, parece que le gusta oírla porque está embrio] (Willett & Willett 2015: 84)

Both *aga'* 'speak' and *jiiñkia'* 'yell' combine with the *-dha* applicative to introduce a hearer as an object, as in (344).

(344) a.
Cham tu'	*agren'*	*mu*	*pai=p*	***ba-tu-ñ-agi-ñ-dha-'***
NEG	ever	DIR	where=2SG.SBJ	CMP-DUR-1SG.PO-talk-APPL-CONT-IRR

        'Don't ever tell **me** where (it is)!'

b. *Gu   chio'ñ   **jumai**   Ø-jiñkui'ñ-dha-'   nabap   tannolh*
   DET   man   other.SG   3SG.PO-yell-APPL-IRR   each   day

   'The man yells **at the other (person)** each day'

As with other verbs of promoted objects (e.g. the verbs of selling in 328a) and (329) we see that a null object marker for the applied form of *aga'* indicates a 3SG hearer, as in (345). Based on the behavior of intransitives, in §5.1, and transitive speaking verbs discussed earlier in this chapter, we would expect this promotion function of applicatives to diagnose an implicit hearer.

(345)   *Eh   ap   mi'   xi-Ø-agi-ñ*
        eh   2SG.SBJ   DIR   IMP-3SG.PO-talk-APPL

        'Don't talk **to her**!'

However, these two verbs are somewhat less clear about the status of the hearer as an implicit object. As with *iata'* 'lie', the object of both *aga'* and *jiiñkia'* 'yell' can either be expressed as a CP,[27] as in (346a), or as an object pronoun referring to a person, as in (346b). Note that as with other speaking verbs, the pronominal primary object marker *jiñ-* 'me' in (346b) must be interpreted as the thing being spoken about; it cannot refer to the hearer.

(346)   a.   *Ap   mi'   aga'/jiiñak   na   gu   virus*
            2SG.SBJ   DIR   talk/yell   SUB   DET   virus

            'You're talking/yelling about the virus'

     b.   *Ap   mi'   jiñ-aga'/jiñ-jiiñak*
            2SG.SBJ   DIR   1SG.PO-talk/1SG.PO-yell

            'You're talking/yelling about me'
            *You're talking/yelling to me

What differentiates *aga'* 'speak' and *jiiñkia'* 'yell' from most of the other speaking verbs in O'dam is that my consultants accept it in contexts without a potential (external)

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[27]See §4.2 for evidence from preverbal quantifiers that this subordination structure has some properties of objects.

hearer. I already mentioned that the use of *jiiñkia'* in (343) is perfectly acceptable in a context where the drunk is by himself with a radio playing the music (i.e. there are no hearers). Likewise, for *aga'* 'speak', the sentence in (346a) can express either that the speaker is talking about the virus to a crowd/multiple listeners, or that the speaker is talking to a wall (i.e. no one). For *aga'* 'speak' and *jiiñkia'* 'yell' it seems that they do not entail a hearer, and instead combine with the promotion function of applicatives due to their class membership as speaking verbs through analogy.

Another instance of class membership affecting applicativization output is the verb *torkia'* 'bark'. In the base form, shown in (347), we see that the subject of the verb must be the sound emitter (the dogs). It is not acceptable to express what is being barked at as a DP, and my consultants do not accept a CP, shown with the optional *na* subordinator, or a DP expressing what is being barked about,[28] nor can the verb take an object prefix. Thus, in its base form *torkia'* 'bark' shows the characteristics of an intransitive with only the sound emitter as the subject.

(347) *(Ja-)tortok-am   gu   go'ngoox *(gu bha'~bhan)/(na)   gu bakax
       3PL.PO-bark.PRES-3PL.SBJ DET dog.PL   DET PL~coyote/PL~man
       'The dogs are barking *at the coyotes/about meat (i.e. it is hungry)'

The verb *torkia'* 'bark' ambiguously combines with the promotative and causative functions of the *-dha* applicative. In (348a) we see that the applicative introduces an external causer, co-referenced by the subject suffix, while the sound emitter, *gu go'ngoox* 'the dogs', is co-referenced by the primary object marker. In (348b) the subject co-references the sound emitter, while the object refers to what is being barked at. This second function mirrors hearer-licensing for speaking verbs. Thus, the *-dha* applicative treats *torkia'* 'bark' ambiguously as an intransitive verb in (348a) and as a speaking verb, in (348b).

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[28]My consultants instead prefer a *na gu'* purposive clause for both of these (i.e. the dogs are barking because of the coyotes/because they want meat).

(348) a. 'bark' > 'make bark'
Ja-torki-dha-'-Ø   *gu*   *go'ngoox*   *gu*   *mauro*
3PL.PO-bark-3SG.SBJ   DET   dog.PL   DET   man

'Mauro is making the dogs bark'

b.   'bark' > 'bark at'
Ø-torki-dha-'am   *gu*   *go'ngoox*   *gu*   *bhan*
3SG.PO-bark-3PL.SBJ   DET   dog.PL   DET   coyote

'The dogs are barking at the coyotes'

While the combination of *torkia'* 'bark' and the *-dha* applicative is ambiguous, a given instance of *torki-dha'* can only instantiate one function. We see in (349) that *torki-dha* is not acceptable with both external agent, *gu mauro* 'Mauro', and a recipient, *gu bhan* 'coyote'. Note that there is no difference in acceptability in whether the sound emitter or the recipient is the primary object.

(349)   **Gu*   *mauro*   *ja-/Ø-torki-dha-Ø*   *gu*   *go'ngoox*   *gu*   *bhan*
       DET   Mauro   3PL.PO-/3SG.PO-bark-3PL.SBJ   DET   dog.PL   DET   coyote

Intended: Mauro is making the dogs bark at the coyotes

Additionally, in (350) we see that both uses of *torki-dha'* can occur in clauses linked by *na* subordinators. In both instances we see the allomorph [-'ñ] of the *-dha* applicative.[29] In the first instance, the applicative *-dha* licenses an external agent *gu chio'ñ* 'the man', who causes the dogs to bark. The second instance of *torki-dha'* is a relative clause of *maat* 'know', which is the purposive of the initial *torki-dha* instance. This second instance *torki-dha* licenses the recipient object, rather than the external agent. The subject/object co-reference on the two uses of *torki-dha'* show the difference in argument structure. In the first instance, the subject suffix is 3SG, matching the number of the agent *gu cho'ñ* 'man', while the primary object prefix is 3PL, matching the number of the patient *gu go'ngoox* 'dogs'. In the second

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[29]The *-'ñ* allomorph of the *-dha* applicative arises through productive phonological processes whereby the final unfooted vowel of /-dha/ is deleted (Gouskova 2003) and /dh/ > ['ñ] in coda position (Willett 1991: §2.22).

use the 3PL marking, which matches the barker, is the subject, while the object realizes 3SG marking for an existential interpretation of the thing being barked at (see my discussion of definiteness in Chapter 3).

(350) *Gu* *chio'ñ* **ja-torki-'ñ-Ø** *gu* *go'ngoox* *dai* *na-gu'* *cham*
DET man 3PL.PO-bark-APPL-3SG.SBJ DET dog.PL but SUB-ADVR NEG

maat *na=m* **tu-Ø-torki-'ñ**
know SUB=3PL.SBJ **DUR-3SG.PO-bark-APPL**

'The man ordered the dogs to bark, but I don't know what they are barking at'

This seems to be a case where *torkia'* 'bark' can be analyzed as falling into two verb classes. As an intransitive verb of sound emission, where it is analogous to *sasbak* 'gurgle' in (351). The subject of the base form is the sound emitter and the applicative in (351b) introduces an external agent who causes the sound emitter, now the object, to emit the sound expressed by the verb. Similarly, the base form of *torkia'* 'bark' expresses that a barking sound was made by the subject and the first use of *torki-dha'* in (350) expresses that the subject causes the object to emit the barking sound.

(351)   a.   *Sasbak* *gu=m* *book*
gurgle DET=2SG.POSS stomach

'My stomach is gurgling

    b.   *Sasbak-chu'n-iñ* *gu* *suudai*
gurgle-APPL-1SG.SBJ DET water

'I make the water gurgle (e.g. by splashing my hands in it)'

However, dogs differ from other animals by barking for communicative purposes (e.g. to express hunger). Thus, speakers can also conceive of "barking" as a format of speech used by dogs, in which case it patterns with the speaking verbs discussed in §5.2, where the hearer is licensed as the primary object. The verb *torkia'* 'bark' is the only verb I have found to have an ambiguous result when combined with an applicative. This is likely because dogs' barks are somewhat unique in terms of being both an emitted sound and a form of communication

by an animal with an extremely close relationship to humans.

5.2.1 A summary of the promotative use of applicatives

In this section we have seen that verbs with implicit objects, ones which cannot receive an exponent in the same clause, combine with the *-dha* applicative to promote their implicit argument to object status. We will see in §5.3 that entailed locations are often promoted by the applicatives to object status, while also gaining an animacy entailment. Based on what I discussed in §5.2, I will show that that locative phrases are not syntactic arguments, in contrast to secondary objects, because they pattern like implicit objects with regards to applicativization.

5.3   Locative participants

Locations of verbs in O'dam can always be expressed in one of three ways: postpositionally, postverbally, or preverbally. Postpositional phrases always appear with a postposition following their dependent, such as *kam* 'origin', *dhɨr* 'from', and *ta'm* 'on' in (352). As discussed in §3.1.1, when PPs are selected as objects of a verb, they trigger 3SG object marking. When locative expressions appear postverbally, as in (353), they are a full phrase. The directional particle occurs in the D position, where the determiner *gu* and the demonstratives *dhi* and *gui* normally appear in DPs. In the postverbal position, the directional particle is always followed by a nominal element, such as the N *Jalisco* in (353). In contrast, perverbal locative expressions appear as only the directional particle, as in (354), without any following nominal element. Preverbal locative expressions essentially consist of a pronominal demonstrative, which refer to any type of location (i.e. source, goal, etc.).

(352) **Postposition:**

a. *Gio*   *jai'*   *mas*   **mi'-kam-dɨr**   *gu*   *ja'tkam*   *mi'=ch*
COORD   other   more   DIR.DIST-origin-from   DET   people   DIR=1PL.SBJ

  jumpa-da'-ich
  meet-CONT-1PL.SBJ

'And other people from far away, we were meeting there.'
(Text_092010_MSM_GGS_Lavidatepehuana, 00:48)

b. *Tu-m-io'-da'*   *no'=mɨ-t*   *tɨi*   *jaroi'*   *na*   *mi'*
DUR-MID-drink-CONT   COND=3PL.SBJ-PFV   see.PFV   someone   SUB   DIR

  ja'p   *tu-io'-da'*   *kupa-'am*   *piam*   *no'=r-biapma*
  DIR   DUR-drink-CONT   lock.up-3PL.SBJ   DISJ   COND=COP-young

  gɨ'bi-a'-am   **kurus-ta'm**   *gɨ'bi-a'*
  hit-IRR-3PL.SBJ   cross-on   hit-IRR

'They took him if they see that someone is drinking there, they lock him up or if he is young, they nail him to the cross, they hit him.'
(Text_102010_EGG_GGS_SemanaSanta, 05:25)

(353) **Postverbal Locative Expression:**
Mu   *ja-jotxi-dha-'-iñ*   **bhammɨ**   **jalisco**
DIR   3PL.PO-send-APPL-IRR-1SG.SBJ   DIR.DIST   Jalisco

'I'm sending them (my kids) to Jalisco)'

(354) **Preverbal Locative Expression:**
Dhu   *sap*   *buimuk*   *mo*   **bhai**=*r-piasta-ka'*   *ji*   *bhai'-ñi*   *dam-dɨr*
EVID.DIR   REP.UI   tomorrow   doubt   DIR=COP-party-ST   FOC   DIR-VIZ   up-from

  na-pai'=r   *iskuel*
  SUB-where=COP   school

'Apparently, tomorrow there is a party up here where there is a school.'
(Text_092011_MMC_GGS_Elborrachoylamuerte, 14:46)

In this section I will focus on locative expressions, which combine the preverbal and postverbal categories. The differences between preverbal and postverbal position seem to hinge largely on topicality and pronominality rather than on grammatical function. For certain verbs, these locative expressions seem to be both obligatory and entailed, which

suggests that they could be analyzed as secondary objects of those verbs. Adding to this, locative expressions seem to have a syntax analogous to DPs, suggesting they could be the right syntactic category to be co-referenced arguments. However, I will show that the behavior of applicatives when combined with motion verbs indicates that locative phrases are not syntactic arguments. In contrast to secondary objects, locative expressions are promoted by applicatives, which makes locative dependents akin to non-arguments (i.e. adjuncts).

I would like to first put aside locative expressions made with postpositions for this section. While preverbal and postverbal locative expressions are never co-referenced on the verb, certain verbs in O'dam do seem to permit PP objects, such as *kɨ'ya'* 'bite', shown in (355a). The indication that the PP *bhai'ram* 'on the tail' is being co-referenced by the primary object marker, rather than the DP *gu bhabho'mkox* 'squirrels', is the 3SG number agreement. If the plural DP was the co-referenced object, we would expect the 3PL primary object prefix *ja-*, as in (355b). Because PP dependents can be co-referenced by primary object markers they are at least considered syntactic arguments by verbal co-reference.

(355) a. *Bha*   *tɨ-Ø-kɨi*   **bhai'-ram**   *gu*   *bha~bho'mkox*
        DIR   DUR-3SG.PO-bite.PFV   tail-on.body.part   DET   PL~squirrel

           'It bit the squirrels on the tail'

      b. *Bha*   *tɨ-ja-kɨi*   *bhai'-ram*   **gu**   **bha~bho'mkox**
        DIR   DUR-3PL.PO-bite.PFV   tail-on.body.part   DET   PL~squirrel

           'It bit the squirrels on the tail'

Motion verbs that co-reference an object consistently combine with the promotion function of the O'dam applicatives. For example, in (356) we see that the base form, shown in (356a) marks the primary object, which co-references the theme, while the subject is the agent. The locative expression *bhammɨ jalisco* refers to the goal of the sending event. In the applied form, shown in (357a), the goal of (356a) is promoted to a recipient, where it is co-referenced by the primary object. We see in (357a) that the applicative does not create a second sepa-

rate location. Rather the goal entailed by the base form now gains an animacy entailment. Notice that the locative expression *bhammɨ jalisco* in (357a) refers to the location of the 3PL recipient, rather than a separate location. We see in the continuations in (356b) and (357b) that an animate recipient can only be cancelled in the non-applied form.

(356)   *jotsa'* 'send (to location)' > *jotxi-dha'* 'send (to person)'

    a.   *Mu   ja-jots-a'-iñ*   **bhammɨ   jalisco**
       DIR   3PL.PO-send-IRR-1SG.SG   DIR.DIST   Jalisco

       'I am sending **them (my children)** to Jalisco.'

    b.   *...na-pai   cham   jaroi'   jai'ch*
       SUB-where   NEG   someone   EXIST

       '...where there is no one.'

(357)   a.   *Mu   ja-jotxi-dha-'-iñ*   *bhammɨ   jalisco*
       DIR   3PL.PO-send-APPL-IRR-1SG.SG   DIR.DIST   Jalisco

       'I'm sending him (my son) **to them** in Jalisco.'

    b.   *#...na-pai   cham   jaroi'   jai'ch*
       SUB-where   NEG   someone   EXIST

       '...where there is no one.'

The recipient of the applicativized form can be expressed pronominally, through the primary object, as in (358a). However, the recipient cannot be marked on the base verb, as in (358b), and must be expressed through a linked purposive clause, as in (358c).

(358)   a.   *Mu=**m**   jotxi-dha-'-iñ*   *gu=ñ*   *ma~maar*
       DIR=2SG.PO   send-APPL-IRR-1SG.SBJ   DET=1SG.POSS   PL~offspring

       'I am going to send my children to you.'

    b.   **Mu=**m**   jotsa-'-iñ*   *gu=ñ*   *ma~maar*
       DIR=2SG.PO   send-IRR-1SG.SBJ   DET=1SG.POSS   PL~offspring

       Intended: I am going to send my children to you.

c.   *Mu*   *ja-jotsa-'-iñ*   *gu=ñ*   *ma~maar*   *na=p*
      DIR   3PL.PO-send-IRR-1SG.SBJ   DET=1SG.POSS   PL~offspring   SUB=2SG.SBJ

      pai'   *daa*
      where   sit

'I am going to send my children to where you are.'

What we see for the verb *jotsa'* 'send' is that the applicative makes an alternation similar to English and Spanish dative alternations, as diagnosed by the so-called London Office effect (see also Beavers 2011a). The London Office effect refers to cases like (359) and (360) where an alternation between a preposition (the a examples) and indirect object (the b examples) expressions of the goal/recipient for verbs of sending corresponds to a strengthening of the entailments associated with the verb. In (359a) and (360a), the PP can be interpreted as either a goal, where the theme is sent to the place London, or a recipient, where the theme is sent to a place that can gain possession of it (i.e. the London Office of some company). In contrast, the indirect object variant requires an interpretation, where the theme must change possession to a recipient; forcing an inanimate recipient to be interpreted as capable of possession (i.e. the London Office).

(359)   English

    a.   Kim mailed a ball to London. (goal or recipient reading)

    b.   #Kim mailed London a ball. (only recipient 'London Office' reading) (Beavers 2010: 854)

(360)   Spanish

    a.   *Juan*   *envió*   *la*   *carta*   *a*   *londres.*
        Juan   sent   the   letter   to   London

        'Juan sent the letter to London' (London or London Office)

    b.   #*Juan*   *le$_i$*   *envió*   *la*   *carta*   *a*   *londres$_i$.*
        Juan   CL   gave   the   letter   to   London.

        #Juan sent London the letter (Only London Office) (Beavers & Nishida 2010: 228)

Beavers (2010) and Beavers & Nishida (2010) argue that different interpretational possibilities of the English and Spanish sentences in (359) and (360) follow from the Morphosyntactic Alignment Principle (MAP), shown in (361), where the more prominently realized argument (i.e. an indirect object or dative) must bear stronger truth conditions than the less prominent alternate (i.e. a PP). In the case of the Dative Alternation, Beavers & Nishida (2010) shows that the stronger truth condition is the change in possession entailed by the (b) examples, which is not entailed by the (a) examples (see also Rappaport Hovav & Levin 2008, cf. Bleam 2001 and Harley 2003).

(361) **Morphosyntactic Alignment Principle**: : When participant x may be realized as either a direct or oblique argument of verb V, it bears L-thematic role R as a direct argument and L-thematic role $Q \subseteq_M R$ as an oblique (Beavers 2010: 848).[30]

Notably, the use of *London/londres* in (359) and (360) shows that the truth conditional strengthening relates to change of possession, not animacy. In contrast to typical dative alternations, the O'dam locative promotion involves the addition of an animacy entailment. We saw this in (357a) where *bhammɨ Jalisco* must refer to the location of some animate recipient, not the Jalisco Office of some company. Likewise, in (362) we see that Jalisco the place cannot be expressed as the DP object of *jotxidha'* 'send to someone'. The utterance in (362) is only acceptable if *Jalisco* is the name of the recipient or the theme, rather than the city or state.[31]

(362) *Mu*   *jotxi-dha-'-iñ*   *gu*   *jalisco*
        DIR   3PL.PO-send-APPL-IRR-1SG.SG   DIR.DIST   Jalisco

I'm sending him (my son) **to Jalisco** (i.e. the Jalisco Office) (OK if Jalisco is the theme or recipient's name)

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[30]$Q \subseteq_M R$ refers to Minimal Contrast, which is defined as: Q is minimally weaker than R ($Q \subseteq_M R$) on a hierarchy of L-thematic roles iff $Q = R$ or $Q \subset R$ and there is no role P on the hierarchy such that $Q \subset P \subset R$. (Beavers 2010: 848)

[31]The primary object in (362) is 3SG, which means that the singular DP *gu jalisco* 'Jalisco' is compatible with either the primary or secondary object.

The same promotion function of the applicative with *jotsa'* 'send' is found for *bua'~iabu'* 'throw.SG/PL'. In (363a) we see that the base form co-references the theme as its primary object, and the locative expression *mu kiicham* 'inside the house' must describe the goal of the ball. The sentence is (363a) is acceptable with or without someone within the house to potentially receive the ball, thus is no entailed recipient. An animate nominal can be used to express the goal, as in (363b), although we see that it must be expressed as a locative phrase, the DP **gu wendy* is unacceptable. However, the interpretation of Wendy is that she is essentially a target of the ball, not an intended recipient (i.e. she is functionally inanimate in the clause).

(363) a. *Añ*   *ja-iabu*   *gu*   *pi~plot*   **mu**   **kiicham**
      1SG.SBJ   throw.PL   DET   PL~ball   DEM.PROX   inside.the.house

      'I throw the ball into the house/#through the house/#from the house.'

   b. *Añ*   *ja-iabu*   *gu*   *pi~plot*   **mu/*gu**   **wendy**
      1SG.SBJ   throw.PL   DET   PL~ball   DEM.PROX/DET   Wendy

      'I throw the ball at Wendy.'

The lack of an entailed recipient is also shown in (364). The sentence expresses where the speaker found a dead animal carcass, thus, the verb *bua'* 'throw.SG' in context has a goal, but no recipient. In contrast, the same locative expression in (365) describes the location of a 3SG individual who is intended to receive the ball. While the goals entailed by verbs such as 'send' and 'throw' are expressible in O'dam, these verbs seem to combine with the promotion function of the applicatives, as we saw with transitive verbs with implicit objects.

(364) *Jai'*   *kɨk*   *gu*   *tak*   *gu*   *jaroi'*   *muua-k*   *sap*   *bhai*
      other   be.standing.SG   DET   INFR   DET   someone   kill.SG-PNCT   REP.UI   DIR
      xi-bua-k
      IMP-throw.SG-PNCT

      'It was stacked, I think someone killed it and must have thrown it there'
      (Text_092010_TSC_GGS_nar ilhich ka', 01:29)

(365) | Añ | tɨi=p | bui-'ñ | gu | pilot | mu | kiicham |
|------|------|--------|------|------|------|--------|
| 1SG.SBJ | INT.NR=IT | throw.SG-APPL | DET | ball | DIR | inside.the.house |

'I threw the ball **to her** inside the house (and she almost caught it).'

This promotional behavior is quite similar to what Jerro (2016) finds in Kinyarwanda for the verb *gu-tera* 'throw' wherein the base form expresses that the verb reaches a goal. Because locatives are arguments in Kinyarwanda the applicative does not license a new syntactic argument (Jerro 2020; Ngoboka 2016; Zeller & Ngoboka 2018). Rather than adding a new argument to the verb's argument structure, the applicative simply adds an entailment that the goal argument is also a recipient.

(366) | Habimana | y-a-tey-e | Karekezi | i-buye. |
|-------|-----------|----------|---------|
| Habimana | 1-PAST-throw-PERF | Karekezi | 5-rock |

'Habimana threw the rock at Karekezi.' (Jerro 2016: 89)

(367) | Habimana | y-a-ter-ey-e | Karekezi | i-buye. |
|-------|--------------|----------|---------|
| Habimana | 1-PAST-throw-APPL-PERF | Karekezi | 5-rock |

'Habimana threw the rock to Karekezi.' (Jerro 2016: 89)

In contrast to Beavers & Nishida's (2010) and Jerro's (2016) findings that object promotion involves the addition of a change of possession entailment in English, Spanish and Kinyarwanda, the promotion function of O'dam applicatives simply adds an animacy entailment to an existing locative participant.[32] The implied change of possession for *jotxi-dha'* 'send to someone' and *buidha'~iabuidha'* 'throw to someone.SG/PL' are difficult to cancel. However, the larger set of promoted objects suggests that the O'dam applicatives add an animacy entailment instead of a transfer-of-possession entailment.

Consider the verb *baabu'* 'take out (from under)', shown in (368). In the base form, shown in (368a), the theme, *gu muñek-ga'n* 'her (the child's) doll', is interpreted as being

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[32]See also work on Japanese ditransitives (Miyagawa & Tsujioka 2004) and Korean ditransitives (Hwang 2005; Jung & Miyagawa 2004; Kim 2015).

taken out horizontally from under something, in this case the speaker's bed. In the applied

form, shown in (368b), the theme is interpreted as being taken away from a possessor, which

is co-referenced with the primary object, in the location that is entailed by the base form.

We see in this case that the transfer-of-possession implicature goes the reverse direction, the

theme comes into the possession of the subject rather than the promoted object. However,

the applied form still entails an animate source of the doll: notice in (369) that the sentence

is unacceptable with *gu bopto'* 'bed' as the possessor, even if the doll is tightly associated

with the bed.

(368)   *baabu'* 'take out (from under)' > *baabui-dha'* 'take away from someone (under something)'

     a.   *Añ*   *baabu-'*   *gu*   *muñek-ga-'n*   *gu*   *alhii*   *bɨta'ndɨr*
         1SG.SBJ   take.out-IRR   DET   doll-AL-3SG.POSS   DET   child   under

           na=ñ-pai'   *bopto'*
           SUB=1SG.POSS-where   bed

     'I'm going to take the child's doll from under the bed'
     Speaker comment: You are taking the doll out to help the girl because she can't reach it.

     b.   *Añ*   *baabui-dha-'*   *gu*   *muñek-ga-'n*   *gu*   *alhii*   *bɨta'ndɨr*
         1SG.SBJ   take.out-APPL-IRR   DET   doll-AL-3SG.POSS   DET   child   under

           na=ñ-pai'   *bopto'*
           SUB=1SG.POSS-where   bed

     'I'm going to take the child's doll from under the bed'
     Speaker comment: The girl is under the bed and you are taking the doll from her because she's been bad.

(369)   **Añ*   *baabui-dha-'*   *gu*   *muñek-ga-'n*   **_gu_**   **_bopto'_**
       1SG.SBJ   take.out-APPL-IRR   DET   doll-AL-3SG.POSS   DET   bed

     Intended: I'm going to take the bed's doll (from under it)'

Looking at the speakers' comments for the sentences (368) we see a switch in the event's

relation to the doll's possessor. In the base form in (368a), my consultants commented that

the action is being done to help the child, who cannot reach her doll, while in the applied

form in (368b), the speaker is interpreted as taking the doll from the child as punishment. I find that this change in the beneficiary inference of the event is quite common in naturalistic speech, as in (370a), where the theme is implied to be a beneficiary, and in (370b), where the owner of the house is a maleficiary of the action.

(370) a. *Baabu-'-ich*   *gu*   *ma'n-kam*   *na*   *mi'*   *kuup*   *ku*   *mu*
           take.out-IRR-1PL.SBJ DET   one-NMLZ   SUB   DIR   be.enclosed   SUB   DIR

           bajimi-a'   *na-gu'*   *pui'*   *cham tu'*   *jax*   *bua*
           come-IRR   SUB-why   SENS   NEG   how   have

           'We will break out the person who is imprisoned because he has not done anything' [Sacaremos a la persona que está presa para que se vaya ya que no ha hecho nada] (Willett & Willett 2015: 11)

       b. *Baabui-dha-'-am*   *mo*   *gu*   *ba'ki-ñ*   *no'=t*   *cham*
           take.out-APPL-IRR-3PL.SBJ doubt   DET   house-3SG.POSS   COND=PFV   NEG

           namki   *na*   *ji'k*   *tu-ua'tu'n*
           pay.APPL.PFV   SUB   QUANT   DUR-owe

           'They will take his house if he does not pay what he owes' [Le quitarán su casa si no paga la cantidad que debe] (Willett & Willett 2015: 10)

If the base-applicative alternation for *baabu'* 'take out (from under)' was always associated with a change from benefactive > malefactive, then we could use Jerro's (2016) account of *gu-tera* + APPL, where the applicative co-references the location with a benefactive entailment. However, neither the base form *baabu'* nor the applied form *baabui-dha'* entail a beneficiary or maleficiary. Instead, the base form entails a source from which the theme is taken, while the applicativized form entails that the source is animate. In (371a) the speaker is simply cleaning up his house, the bed is the source for the toys, but there is no necessary inference that the bed, nor any children are beneficaries of the event. Likewise, in (371b) one consultant commented that the sentence would be acceptable in a case where the subject is simply getting the speaker's clothes back from Elías, not that Elías was hurt by the action. In other words, Elías is the animate source of the clothes.

240

(371)   a.   Context: You are cleaning up your house.

Añ	*ja-baabu-'*	*gu*	*titɨtbi-kar*	*bɨta'ndɨr*
1SG.SBJ	3PL.PO-take.out-IRR	DET	PL~play-NMLZ	under

na=ñ-pai'	*bopto'*
SUB=1SG.POSS-where	bed

'I'm going to take the toys from under the bed'

b.

Xi-babui-dha-'	*gu=ñ*	*ja~jannulh*	*gu*	*Eliiyas*
IMP-take.out-APPL-IRR	DET=1SG.SBJ	PL~cloth	DET	Elías

'Go get my clothes from Elías!'
Speaker comment: Elías could have just been fixing your clothes for you.

Rather than adding a benefactive entailment to the promoted location, the source in the case of *baabu'*, the applicative seems to add an animacy entailment to the source. We see this lack of a benefactive entailment associated with the applied form again for the verb *nui'ña'* 'push', shown in (372). Like *jotsa'* 'send' and *bua'~iabu'* 'throw.SG/PL', 'push' involved movement of a theme by an agent. Additionally, in (372b) we see that the applicative adds an animacy entailment to the promoted argument, the target of the base form becomes an animate target in the applied form. Because the promoted argument is a target, rather than a goal, there is no possession entailment in the applied verb form. We see in (373) that when the non-realized intention particle *tɨi* is used, it cancels the contact part of a *hitting* event, rather than the change of possession part of a *giving/throwing* event.

(372)   *nui'ña'~nu'yasa'* 'push.SG/PL' > *nui'ñ-dha'* 'shove at someone'

a.

Nu'yas-a'-ap	*dhi*	*tɨtnora'*	*ku*	*dusaark-a'*	*na=ch*
push.PL-IRR-2SG.SBJ	DEM.PROX	pitchfork	SUB	loosen-IRR	SUB=1PL.SBJ

jupna-'
pull.out-IRR

'Move that pitchfork so it loosens and we can take it out'

b.

Añ	*bha*	*nui'ñ-dha-'*	*gu*	*Mike*	*gu*	*kape-ga-'n*
1SG.SBJ	DIR	push-APPL-IRR	DET	Mike	DET	coffee-AL-3SG.POSS

'I'm going to shove Mike's coffee **at him**'

(373) | *Añ* | *tɨi* | *bha* | *nui-'ñ* | *gu* | *Mike* | *gu* | *kape-ga-'n* |
|---|---|---|---|---|---|---|---|
| 1SG.SBJ | DIR | INT.NR | push-APPL | DET | Mike | DET | coffee-AL-3SG.POSS |

'I almost hit Mike with the coffee (by shoving it)'

In contrast to Jerro's (2016) analysis of applicatives in Kinyarwanda and Beavers & Nishida's (2010) analysis of the London Office effect in dative alternations, O'dam applicative promotion does not involve the addition of a change-of-possession (or beneficiary) entailment. Instead, the promotional function of O'dam applicatives solely involves the addition of an animacy entailment. From this animacy entailment, the recipient reading of the applied variants of *jotsa'* 'send' and *bua'~iabu'* 'throw.SG/PL' follow from the pragmatic effect of the speaker choosing a form which entails a specifically animate goal (i.e. a goal which can also be a recipient but need not be). Likewise, a source combined with an animacy entailment implies loss of possession, while a target becomes an animate target.

In this section, I have shown that the promotative function of O'dam applicatives is triggered by their combination with a verb stem which entails a participant that is not a syntactic argument of the verb's non-applied form. These promoted objects can be divided into two types based on their ability to co-occur with the non-applied verb. The first type are implicit objects of the non-applied verb, which I discussed in §5.2. Implicit objects cannot receive an exponent in the same clause as their associated non-applied verb and are generally interpreted existentially, although they can be interpreted definitely or specifically based on the larger discourse context. The second type of promoted objects are entailed locations, which I discussed in this section. In contrast to implicit objects, entailed locations appear with their associated non-applied verb. However, their exponent must be a locative phrase, either preverbal or postverbal, rather than a DP or CP. Very often the promoted object has recipient-like properties, although this is not always the case. Instead a consistent feature of applicative promotion is that the applied verb entails that the promoted object is animate. That the promotative function of O'dam applicatives is triggered by implicit objects and

entailed locations suggests that locative phrases in O'dam clauses are always adjuncts. If they were syntactic arguments, it would be difficult to explain why entailed locations are promoted, while other inanimate object roles (e.g. patients) are never promoted. We also saw in §5.1 that the O'dam applicatives introduce agents for syntactically intransitive verbs, except in the few transitive cases where the two arguments are not significantly distinct (Næss 2007). Motion verbs which only co-reference a subject (i.e. are intransitive) also gain an agent, suggesting that, as with applicative promotion, any semantically entailed locations do not affect the number of syntactic arguments a verb has (i.e. they are adjuncts). To round out this description of the O'dam applicatives, I would like to finally turn to the canonical use of applicatives, namely beneficiary introduction.

5.4   Beneficiaries

In this section I would like to explore instances where O'dam applicatives introduce benefactive objects. My goal here is to propose that the benefactive function of applicatives in O'dam is the *elsewhere* case. The O'dam applicative only introduce a beneficiary if a) the base verb is prototypically transitive (i.e. it cannot introduce an external agent) and b) the base verb lacks an implicit object or locative participant to promote. That is to say, beneficiaries are only introduced where the other applicative functions are not possible. Something that appears to be language specific about the behavior of the O'dam applicatives is a limit of three syntactic arguments (Hale & Keyser 1997). As we will see, the beneficiaries licensed here maximally change a transitive verb into a ditransitive verb. In addition, base ditransitive verbs are quite uncommon in O'dam, as Willett (1991) also notes in his reference grammar. The two base ditransitive verbs that I have encountered are *makia'* 'give', shown in (374), and *tïkka'* 'ask', shown in (375). In (374a) and (375a) I have given an example sentence of each with the three arguments annotated and in (374b) and (375b) I have given hypothetical

243

applicativized forms that are unacceptable.

(374) *makia'* 'give'

a. *Añ*_{SBJ} *tu-ja-maa* *[gu ta~toxkolh]*_{OBJrec} *[gu koi']*_{OBJtheme}
    1SG.SBJ DUR-3PL.PO-give.PFV DET PL~pig DET food

'As for me, I gave food to the pigs.' (García Salido 2014: 49)

b. **maki-dha', *maki-chdha',...*

(375) *tɨkka'* 'ask'

a. *Tɨkka-' [-ap]*_{SBJ} *[gu Juan]*_{OBJaskee} *[na-pai'dhuk jir=jim-dam Korian*
    ask-IRR -2SG.SBJ DET Juan SUB-when COP=go-NMLZ Durango

    *ja'k]*_{OBJquestion}
    DIR

'Ask Juan when he is leaving for Durango (lit. When he is a traveler to Durango)'
[Pregúntale a Juan cuándo se va a Durango] (Willett & Willett 2015: 165)

b. **tɨkki-dha', *tɨk-tuda'...*

Both verbs are notable because there are verbs with analogous semantic structures which do combine with the applicatives. We saw in §5.2 that verbs of selling, which involve transfer of possession like *makia'* 'give', have an implicit recipient argument in their base form which is promoted by the *-dha* applicative. In contrast, in (374a) we see that the recipient *gu tatoxkolh* 'the pigs' is the primary object. Likewise, *tɨkka'* 'ask' is a verb of speaking, which patterns with other verbs of speaking, such as *aga'* 'say' and *iata'* 'lie', where the thing being spoken about receives a subordinate CP exponent. While the base forms of other verbs of speaking combine with the *-dha* applicative to promote the hearer to an expressible object, the non-applied form of *tɨkka'* 'ask' already permits the hearer to be expressed in the same clause, in this case *gu Juan* 'Juan'.

In Table 5.6 we see a list of verbs I have found which receive a beneficiary when combined with one of the O'dam applicatives. I have also found that the applicatives are not ambiguous about the type of beneficiary introduced for a given verb, which is not true for

O'dam's sister language Audam (Everdell & García Salido [2022b]). For the sake of descriptive completeness, I also note the type of beneficiary introduced for each verb.

Base verb	Gloss	Applied form	Deputative	Basic	Recipient
baissɨna'	stretch.TR	*baissɨñ-dha'*	X		
bakchia'	soak (hide)	*bakchi-dha'*			X
bakuana'	wash	*bakuañ-dha'*	X		
bakta'	hang up (to dry)	*bakxi-dha'*		X	
bi'aa'	guard, graze on	*bi'-dha'*		X	
bulhia'	tie, fasten	*bulh-dha'*	X		
bulhkada'	shrink.TR (clothes)	*bulhkax-dha'*	X		
bhippio'ka'	untie, untangle.TR	*bhippio'k-dha'*	X		
bhɨika'∼ui'ka'	bring, take.SG/PL	*bhɨix-dha'∼ui'x-dha'*		X	
bhɨiya'∼u'ya'	bring.SG/PL	*bhɨi-dha'∼ui'-dha'*			X
dagia'	grab	*daa'ñ-dha'*	X		
da'biña'	knead, mix with water	*da'biñ-dha'*	X		
da'muna'	knead, mix, shake	*da'mux-dha'*			X
dɨɨ'nnia'	smoke (pipe)	*dɨɨnki-dha'*		X (cure)	
duñia'	do, make	*duiñ-dha'*		X	
echkada'	get ready (reflexive), fix	*echkax-dha'*	X		
gaaga'	search for, find	*gaa'ñ-dha'*			X
gaamu'	put inside (sack or bag)	*gaam-dha'*		X	
ikora'	dirty.TR	*ikorgi-chuda'*		X	
jaiña'∼jaisa'	break, rip, split.SG/PL	*jaiñ-dha'∼jaix-dha'*			X
jikpata'	braid	*jikpax-dha'*		X	
jugia'	eat, finish	*jugii'ñ-dha'*		X	
junmada'	make mole out of something.TR	*junmax-dha*			X
jupna'	take out (from tight space)	*jupñi-dha'*	X		
juulhia'	spread	*juulh-dha'*			X
ki'spa'	squeeze, crush, make taco	*ki'spi-dha'*			X
kɨɨsa'	put (vertically), stand	*kɨɨx-dha'*	X		
kɨɨ'mpiga'	fix, arrange	*kɨɨ'mpix-dha'*	X		
kɨkbo'	stand up, put on feet	*kɨkbui-chdha'*	X		
kuana'	remove (cover), take out/off (clothes)	*kuañ-dha'*	X		
kua'gia'	cut firewood	*kua'ñ-dha'*			X

kupio'ka'	open.TR	*kupio'k-dha'*	X		
kuupa'	close.TR, enclose.TR	*kuup-dha'*	X		
mu'kda'	sharpen.TR	*mu'kxi-dha'*	X		
mu'aa'~kooda'	kill.SG/PL	*mui-dha'~koo'ñ-dha'*	X		
saasbia'	play music	*saasbi-dha'*			X
sai'bhio'ka'	unstick	*sai'bhio'k-dha'*	X		
sarna'	rip, tear	*sarni-dha'*	X		
siissa'	straighten (plant)	*siixi-dha'*		X	
sooma'	sew	*soom-dha'*	X		
suulhga'	make tortillas	*suulhgi-dha'*	X		
tibgata'	start, begin	*tibgax-dha'*	X		
uana'	clean	*uañ-dha'*	X		
ua'na'	write	*ua'ñxi-dha'*	X		
umga'	cut palms	*umgax-dha'*			X
xio'pna'	suck, cure	*xio'pñi-dha'*		X	

Table 5.6: Verbs that gain a beneficiary when combined with an applicative.

The first notable feature of the verbs in Table 5.6 is that all of the bases are transitive. In (376) we see an example where the simple base *mu'kda'* 'sharpen', shown in (376a) contains as its arguments, an agent subject *Tiino*, who is being talked to, and a patient object *gu baiñdhas* '(the) axe'. When combined with the applicative in (376b), the applied form *mu'kxi-dha'* contains a deputative beneficiary which is not present in the base form. Notice that unlike the promotative function of applicatives discussed in §5.2, there is no entailment that Faustino in (376a) is sharpening the axe in place of the speaker. In contrast to verbs like *ga'ra'* 'sell' and *jotsa'* 'send', which entail an implicit object or locative participant, it is not clear that the base form *mu'kda'* 'sharpen' entails any participants which are not treated as syntactic objects. Thus, the beneficiary appears to be introduced because no potentially licensed object blocks it.

(376) *mu'kda'* 'sharpen' > *mu'kxi-dha'*

a. *Ba-Ø-mu'kda-'[-ap]*ₐ   *[gu*   *baiñdhas]*ₚ   *Tiino*   *na=ch*
CMP-3SG.PO-sharpen-IRR-2SG.SBJ   DET   axe   Faustino   SUB=1PL.SBJ

     kɨ'n   *kua'-m-pu'*
     with   firewood-DES-MOV

'Sharpen the axe, Faustino, so we can go collect firewood with it.' [Afila el hacha Faustino, para que vayamos a la leña con ella.] (Willett & Willett 2015: 131)

b. *Dɨɨlh*   *jap*   *jup*   *ba-Ø-mu'ka'n-da'*   *gu=m*   *baiñdhas*
only   2SG.SBJ   IT   CMP-sharpen-CONT   DET=2SG.POSS   axe

     Tooño   *na=p-gu'*   *ba-r=gʉ'*   *moo*   *añ*   *jup*
     Antonio   SUB=2SG.SBJ-why   CMP-COP=large   doubt   1SG.SBJ   IT

     jum-mu'kxi'ñ-dha-'=aa   *gammɨjɨ*
     2SG.PO-sharpen-APPL-IRR=Q   always

'You should sharpen your axe yourself Antonio, because you are grown now and I will not always sharpen it for you' [Debes afilar tu hacha tú mismo, Antonio, porque ya estás grande, pues no siempre voy a estar afilándotela] (Willett & Willett 2015: 131)

As further evidence that beneficiaries are introduced as the elsewhere function of O'dam applicatives, consider cases where non-productive derivations seem to introduce agents that are generally added by the applicatives to intransitive bases. The verbal paradigm shown in (377) shows the verbs *jupañia'∼ jupakia'* and *jupana'* 'get released,SG/PL' ∼ *jupasa'* 'take out (from tight space)SG/PL' in their phonological forms. As is true for verbs across the Uto-Aztecan family, the verbs supplete for the number of the internal object, the patient-subject of the intransitive form and the patient-object of the transitive form (Haugen & Everdell 2015). Where most verbs in O'dam attach an applicative to an inchoative base to produce the causative alternant, we see that 'get released/take out' produces the alternation through a phonological alternation of the root. The inchoative and causative forms, shown in (377a) and (377b) respectively, differ in the last vowel of their singular forms, /i/ versus /a/, and /CV/ segment of their plural forms, /ki/ versus /sa/. Langacker (1977: 127) shows that the *i∼a* alternation between causative/inchoative forms is found across Uto-Aztecan

languages, and reconstructible to Proto Uto-Aztecan, suggesting that the forms in (377) are historically related equipollently, although vowel alternation is not a productive derivational strategy in modern O'dam.

(377) a. /jupañi/∼/jupaki/ 'get released.SG/PL'

    Ampɨx *jupaak*   *dhi*   *baiñdhas* *cham* *bhai'=aa* *na=pim*
    only   release.PRES DEM.PROX axe   NEG   good=Q   SUB=2PL.SBJ

      kɨɨ'mpig-a' *jup* *ja-tɨtda-'*   *gu*   *peegro* *gu*
      arrange-IRR IT   3PL.PO-PL∼say-IRR DET   Pedro   DET

      maa∼mra-'n
      PL∼offspring-3SG.POSS

    'The head just comes off this axe. Wouldn't it be great if you all fixed it?" Pedro said to his children' ["Se zafa luego la cabeza de esta hacha. No estaría bien que la arreglen?" dijo Pedro a sus hijos.] (Willett & Willett 2015: 95)

    b. /jupana/∼/jupasa/ 'take out (from tight space)'

    Jiñ-palhbuidh-a'-ap   *añ*   *juupsa-'*   *dhi*   *pootis*
    1SG.PO-help-IRR-2SG.SBJ 1SG.SBJ take.out.PL-IRR DEM.PROX posts

      jai'=ñ   *mi*   *chuttu-'*
      other.PL=1SG.SBJ DIR stand.INAN-IRR

    'Help me take these posts out. I am going to put in others.' [Ayúdame a sacar estos postes porque voy a meter otros.] (Willett & Willett 2015: 95)

When the applicative combines with 'get released/take out', it may only produce the form and meaning in (378). Meaning-wise, we see that *jupñiha'*∼*jupxidha'* 'take out (from tight space) for someone else' contains as its arguments an agent, the subject, theme, the secondary object, and deputative beneficiary, the primary object. Thus, its argument structure builds upon the transitive base in (377b), which has an agent subject, not the intransitive base in (377a), which has a patient subject. Phonologically, the plural form *jupxidha'* shows that the applied form builds upon the transitive base. Specifically, the [x] of the plural form evidences the underlying /s/ we see in the transitive base. The palatal consonant[33] of the

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[33]The palatal [dh] of the *-dha* applicative strongly suggests an underlying form of /ida/, which is also supported by Langacker's (1977) proposal that the O'dam *-dha* applicative is the reflex of Proto Uto-Aztecan *-iya*. I have never found a case where the putative initial /i/ of the *-dha* applicative surfaces, as opposed to

applicative regularly conditions /a/>[i], which regularly conditions /s/>[x], but not /k/>[x], shown in the intransitive form *jupkia'* 'get released.PL', rather than **jupxia'*, see also Willett (1985) and Willett (1991: §2.3). The phonological processes conditioned by the *-dha* suffix make the morphophonological build of the singular form ambiguous between *jupañi-dha'* and *jupana-dha'*, because both would result in the surface form [jupñidha']. Thus, we must rely on the plural form of the applied verb to illuminate the underlying morphophonological structure.

(378) /jupana-dha'/~/jupasa-dha/ 'take out (from tight space) for someone else'

Mi'	*dhɨr*	*[ap]*_{SBJ}	*[jiñ]*_{PO}-*jupñi-dha-'*		*[gu*	*joi']*_{SO}	*yɨjɨ-ni*
DIR	from	2SG.SBJ	1SG.PO-take.out-APPL-IRR	DET	spine	DIR.PROX-VIZ

pai'	*baax*	*sɨlh*	*jiñ-kom-am*
where	be.inside	direct	1SG.POSS-back-on.body.part

'Can you take out the spine here for me that is here in my back?' [Por favór, ayúdame a sacar la espina que tengo metida en la espalda] (Willett & Willett 2015: 95)

We see in (379) that 'tear, rip.INTR/TR' has the same suppletive/historically equipollent inchoative-causative alternation. In (379a), the intransitive root shows final /i/, while in (379b) the transitive root shows final /a/. The applicative, shown in (380), can only be used with an argument structure of an agent-subject, a patient object, and a deputative beneficiary object. Thus, the applied form builds upon the causative *sarna'*, which has an agent subject and patient object, rather than the intransitive *sarñia'*, which only has a patient subject. Thus the morphosyntactic build of *sarñidha* is clear, however, the morphophonological build of the applied form is ambiguous for the same reason that the singular stem of 'take out/release' was ambiguous as a source for the singular applied form *jupñidha* 'take out (of tight space) for someone else'. The palatal consonant of the applicative applicative conditions adjacent /a/>[i], so that the form [sarñidha] would surface regardless of whether

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being conditioned through productive vowel raising, so it is unclear if the historical initial *i is still part of the modern *-dha* suffix.

the root was /sarna/ or /sarni/.

(379) a. /sarni/ 'tear, rip.INTR'

Tɨi	*cham*	*ka-joi'ñ-iñ*	*dhi=ñ*		*xapaatuix*	*ja'p*
INT.NR	NEG	PERF-enjoy-1SG.SBJ	DEM.PROX=1SG.POSS		shoe	DIR

moo	*cham*	*jup*	*tu-saasak*
doubt	NEG	IT	DUR-tear.INTR.PRES

'I do not like my shoes but they probably will not break soon.' [Ya no me gustan mis zapatos, pero no se rompen pronto] (Willett & Willett 2015: 150)

b. /sarna/ 'tear, rip.TR'

ɨrban	*ji*	*na=p*	*sarna-'*	*gɨt*	*dhi*	*jannulh*
in.the.middle	FOC	SUB=2SG.SBJ	tear.TR-IRR	SBJV	DEM.PROX	cloth

ap	*gu'*	*gai=dhɨr*	*pɨx*	*jup*	*sar*
2SG.SBJ	why	side=from	MIR	IT	tear.TR.PFV

'You should have cut that cloth down the middle, but you cut it along the side.' [Deberías haber rasgado esa tela por en medio, pero tú la rasagaste de un lado] (Willett & Willett 2015: 150)

(380) /sarna-dha/ 'tear, cut.TR for someone else'

Alhi'ch	*bha=ñ*	*sarni-ñ*	*dhi*	*jannulh*	*na-pai'*
small	DIR=1SG.PO	tear.TR-APPL	DEM.PROX	cloth	SUB-where

sę́'	*ku=ñ*	*kɨ'n*	*bulhi-a'*	*gu*	*nob*	*ya'=ñi-ch*
be.hanging	SUB=1SG.SBJ	with	tie-IRR	DET	hand	DIR=1SG.SBJ-PFV

ba-ñ-jikiich
CMP-1SG.PO-cut.PFV

'Cut me a little piece of that cloth hanging there so I can tie my hand with it. I cut my hand [Córtame un pedazo de esa tela que está colgada allí para amarrármela, pues ya me corté la mano.] (Willett & Willett 2015: 150)

Many of the positional verbs in O'dam, which have a stative base, show a similar pattern to 'get released/take out' and 'tear, rip'. The transitive and intransitive bases have a weakly suppletive relation,[34] albeit historically non-suppletive (see Stubbs 2011), and the

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[34]Here I use "suppletive" in a purely descriptive sense of Beavers et al. (2021) meaning that the forms are not related morphophonologically by any productive processes but are semantically related in a relevant way. I make no claims about the validity of derivational suppletion and my use of suppletion here could be switched for an analysis whereby these are all simply different words with overlapping semantics.

applicative consistently attaches to the transitive base, rather than the stative or intransitive form. The paradigm in (381) has an opaque morphological build, similar to (379) because the [x] in the applicative form [baaxdha'] is also expected from palatization of the /s/ of the transitive form *baasa'* (Willett 1985). We see a clearer illustration of the morphological paradigm in (382). The base stative form is suppletively related to the intransitive form *daibu'*, which is suppletively related to the causative form *daasa'*. The phonology of the applied form in (382d) can only be derived from the causative form in (382c) because the /s/ of the causative form is palatalized due to its adjacency to the applicative suffix *-dha*. Neither the *-dha* nor *-tuda* applicative can combine with the intransitive *daibu'* form.

(381) a. *baax* 'be inside (animate)'

     b. *baasa'* 'put inside'

     c. *baax-dha'* 'put inside for someone else'

(382) a. *daa* 'be sitting'

     b. *daibu'* 'sit down'

     c. *daasa'* 'sit someone/thing down'

     d. *daax-dha'* 'leave something for someone else'

In (383) we again see a similar paradigm structure to (382). The stative form *kɨɨk* is suppletively related to the intransitive form *kɨɨka'*. Next, *kɨɨka'* is suppletively related to *kɨɨsa'*. As with *daasa'*, the *-dha* applicative only combines with the causative form in (383d), which shows the palatalization of /s/ we saw in (382d). The [x] of the applied form is not expected if the applicative combined with the intransitive *kɨɨka'* 'stand'

(383) a. *kɨɨk* 'be standing'

Jaroo-ga'n	*dhi*	*karbax*	*na*	*bha'-ñi*	*kɨɨk*	*jodai-cha'm?*
who-POSSPro	DEM	goat	SUB	TOWARDS-VIZ	be.standing	rock-on

'Whose is this goat that's standing on the rock? [De quién es el chivo que está parado allí en la piedra] (Willett & Willett 2015: 106)

251

b. *kɨɨka'* 'stand'

Cha'=p	*mi*	*amuub*	*kɨɨk-a'*	*na=pai'*	*dhi*	*bhuru'x*	*mi'*
NEG=2SG.SBJ	DIR	close	stand.IRR	SUB=where	DEM	donkey	DIR

jotmod-a'	*kuu'*	*kɨ~kbuk*	*bha=m*	*kɨɨyasa*
quickly	turn.around	stand.ANIM	DIR=2SG.PO	kick

'Don't stand too close to that donkey. You don't know when he might suddenly turn around and kick you [No te pares cerca de ese burro, no sea que se voltee y te patee]' (Willett & Willett 2015: 106)

c. *kɨɨsa'* 'stand something'

Jiñ-palhbuidha-'-ap	*na=ñ*	*kɨɨs-a'*	*dhi*	*tɨtnora'*
1SG.PO-help-IRR-2SG.SBJ	SUB=1SG.SBJ	stand.INAN-IRR	DEM	pitchfork

giilhim	*jix=bɨɨt*	*na=x*	*bhai*
very	COP=heavy	SUB=COP	ocote

'Help me stand up this pitchford. It is very heavy since it is pure ocote' [Ayúdame a parar este horcón, por favor, porque está muy pesado, pues es puro ocote] Willett & Willett 2015: 106

d. *kɨɨx-dha'* 'leave something (vertically) for someone else'

Ma'n=apim	*bha*	*ja'k*	*xi-kɨɨx-dha-'*	*gu*	*atoxkor*	*gu=x*
one=2PL	DIR	DIR	IMP-stand.INAN-APPL-IRR	DET	chair	DET=COP

kai'	*na*	*bhaan*	*daibu-'*	*na*	*tu-jugi-a'*
traditional.governor	SUB	on	sit-IRR	SUB	DUR-finish-IRR

'Put a chair here so that the *jix kai'* can sit in it and eat [Ponle una silla al gobernador para que se siente en ella para comer]'(Willett & Willett 2015: 107)

5.4.1 Participants that are not promoted

In Table 5.7 I show verbs from Table 5.6 that have an entailed participant that is not promoted through applicativization. Recall that I stated in §5.2 that applicatives may not introduce a beneficiary if there is an entailed participant that can be promoted to object. In this section I will propose that the verbs in Table 5.7 gain a beneficiary because the non-promoted participant is not promotable.

I have split the verbs in Table 5.7 into two groups based on thematic role of the non-promoted participant: first is the verbs that entail an instrument; second is the verbs that

Base verb	Gloss	Introduced beneficiary	Non-promoted participant
bulhia'	'tie, fasten'	Deputative	Instrument
da'biña'	'knead, mix with water'	Deputative	Instrument
kua'gia'	'cut firewood'	Recipient	Instrument
saasbia'	'play music'	Recipient	Instrument
sooma'	'sew'	Deputative	Instrument
suulhga'	'make tortillas'	Deputative	Instrument
bakta'	'hang up (to dry)'	Basic	Location
gammu'	'put inside (sack or bag)'	Basic	Location
jupna'	'take out (from tight space)'	Deputative	Source
juulhia'	'spread'	Recipient	Location
kɨɨsa'	'put (vertically), stand'	Deputative	Goal
sai'bhio'ka'	'unstick'	Deputative	Source

Table 5.7: Verbs that do not have an entailed participant promoted

entail a location.

Instruments, and materials, are generally expressed using the *-kɨ'n* 'with' postposition. We see in (384a) that the instrument, *baiñdhas* 'axe,' must be suffixed with the *kɨ'n* 'with' postposition. We additionally see in (384b) that the instrument of *kua'gia'* 'cut firewood' cannot be cancelled. Thus, the verb *kua'gia'* 'cut firewood' entails an instrument.

(384) a. *[Baiñdhas*(-kɨ'n)]*_{Instrument} *tu-kua'gia'*   *gu*   *juan*
            axe-with   DUR-cut.firewood   DET   Juan

            'Juan cuts firewood with (his) axe'

       b. *Tu-kua'gi-a'*   *gu*   *juan*   #*dai*   *na*   *cham tu'*   *kɨ'n*   *kua'gi-a'*
            DUR-cut.firewood-IRR   DET   Juan   but   SUB   NEG   with   cut-IRR

            'Juan cuts firewood cut he does not cut it with anything'

However, dependents suffixed with *-kɨ'n* fail all argumenthood tests. We have already seen that they are never promoted, although I will be discussing that further here. Additionally, we see in (385) that the preverbal quantifier *bɨx* 'all' can quantify the agent and patient but not the instrument. Likewise, the primary object marker in (385) must be 3PL. Therefore it must co-reference the patient (the pants) because PPs are always co-referenced with 3SG

object marking.

(385)　*Bɨx*　**(ja-)soom-am*　　　*dhi'*　　　*jiil-kɨ'n*
　　　all　3PL.PO-sew-3PL.SBJ　DEM.DIST　thread-with

'**All of them** are sewing (pants) with this thread'
'They are sewing **all of the pants** with this thread'
*They are sewing pants **with all of this thread**

As further evidence that instruments are always adjuncts, let us contrast them with materials. In (386) the material, *ta'mlas* 'wood,' may optionally be suffixed with the *kɨ'n* 'with' postposition.

(386)　*Añ*　　　*tu-ba'k-cha-'*　　　　　*[ta'mlas(-kɨ'n)]*_{Material}
　　　1SG.SBJ　DUR-house-VBLZ-IRR　wood-with

'I am going to build houses out of wood'

The difference in postposition marking seems to affect the argument status of the material participant. When the material is marked with *kɨ'n* 'with' it cannot be quantified over from the preverbal position, as shown in (387a). However, when the material is not suffixed with *kɨ'n* 'with' it can be quantified over from the preverbal position, as in (387b). For both sentences in (387) I have bolded the material in the transcription line and the participant quantified over by *bɨx* in the translation lines.

(387)　a.　*Bɨx*　*tu-ba'k-cha-'-iñ*　　　　　　**ta'mlas-kɨ'n**
　　　　　all　DUR-house-VBLZ-IRR-1SG.SBJ　wood-with

'I am going to build **every house** out of wood'
*I am going to build houses out of **all of the wood**

　　　b.　*Bɨx*　*tu-ba'k-cha-'-iñ*　　　　　　**gu ta'mlas**
　　　　　all　DUR-house-VBLZ-IRR-1SG.SBJ　wood

'I am going to build **every house** out of wood'
'I am going to build houses out of **all of the wood**'

Instruments then seem to be systematic adjuncts. This adjunct status seems to be linked to their obligatory *kɨ'n* 'with' suffixation. However, one property of promotion is that it

consistently entails that the promoted participant is animate. Recall that promoted locatives, discussed in §5.3, gain a gain/loss of possession implicature because of the animacy entailment added by their promotion. A notable difference between the locatives that are promoted in §5.3 is that the locative participant is compatible with an animate referent in the base form of the verb. Recall in §5.3 that the locative expression could contain an animate referent so long as that referent is interpreted as a goal. In (388) we see that *kɨlhii* 'father's older brother' is acceptable in a locative expression. When expressed as a locative expression, as opposed to an applied object, *bhammu kɨlhii* expresses that the interlocutor's children are going to where his uncle is, but they are not necessarily staying with the uncle (e.g. they may just be going to the same town).

(388)   *Dho*   *ja-joot-api-ch*   *[bhammu   kɨlhii]*
        EVID.DIR   3PL.PO-send.PFV-2SG.SBJ-PFV   DIR.DIST   father's.older.brother

   'I saw that you sent (your children) to where (your) uncle is.'

In contrast, my consultants consistently reject an animate referent as a *kɨ'n*-marked instrument. For example, the sentence in (389) is intended to express that I built the house using my workers (i.e. I ordered them to do it) and expresses 'my workers' in a *kɨ'n* PP. My consultants reacted that the sentence in (389) sounds, grotesquely, like I am using my workers as the building material for the house.

(389)   **Tu-ba'k-ch-im-iñ*   *[jiñ-tujuan-dam-kɨ'n]$_{PP}$*
        DUR-house-VBLZ-PROG-1SG.SBJ   1SG.POSS-work-NMLZ-with

   Intended: I am using my workers to build the house
   Speaker comment: it sounds like you are using your workers as the adobe

This suggests that an instrument in O'dam must lack any animacy, at least if it is expressed through a *kɨ'n* PP. In order to express the intended meaning of (389), my consultants instead offered alternatives where the workers are expressed as the agent/subject, or through a control construction, as in (390a) and (390b), respectively. In both alternatives, the workers

255

are expressed as agents, rather than instruments.

(390) a. *Tu-ba'k-ch-im-am*   *gu=ñ*   *tujuan-dam*
           DUR-house-VBLZ-PROG-3PL.SBJ   DET=1SG.SBJ   work-NMLZ

           'My workers are building the house'

       b. *Tu-ja-chia'-iñ*   *na=m*   *ba'k-cha-'*   *gu=ñ*
           DUR-3PL.PO-send-1SG.SBJ   SUB=3PL.SBJ   house-VBLZ-IRR   DET=1SG.SBJ

               tujuan-dam
               work-NMLZ

           'I am having my workers build the house'

Likewise, verbs that do not necessarily entail an instrument, as in *bua'* 'make, do,' are
not acceptable with an animate instrument. In (391a), the phrase *gringos-kɨ'n* [gringos-
with] is extremely odd under any interpretation. Likewise, an animate instrument is not
acceptable if they are controlled by a wizard like a puppet, as was intended for in (391b),
where the controllee is expressed as a *kɨ'n* PP. In such cases, my consultant prefered a control
contruction using the analytical causative *chia'*, as in (390b).

(391) a. **Jix=xijai*   *jum-bua*   *dhi*   *iipur*   *gringos-kɨ'n*
           COP=difficult   MID-make   DEM.PROX   dress   gringos-with

           Intended: This (type of) dress is difficult for gringos to make/to make alongside
           gringos

       b. **Gu*   *magu*   *u'uan*   *gu*   *libro*   *chio'ñ-kɨ'n*
           DET   wizard   write.PRES   DET   book   man-with

           Intended: The wizard makes the man write the book (by controlling him)

It seems that instruments run into two problems in their interaction with applicativization.
They must be expressed through a *kɨ'n* PP, which appears to always function as an adjunct
(they fail head-marking an preverbal quantification), so that they cannot be counted towards
the valency of the base verb. Moreover, the instrument thematic role in O'dam seems to be
generally incompatible with an animate referent. This make instruments different from the
promoted locatives discussed in §5.3, which are compatible with an animate referent. Because

promotion under applicativization in O'dam seems to require an animacy entailment, it seems impossible to promote an instrument participant because the animacy entailment of promotion clashes with the inanimacy restriction of instruments in O'dam.

The inanimacy restriction on instruments can also help explain the types of locatives in Table 5.7 that are not promoted under applicativization. Specifically, the locative participants of these verbs resist an animate interpretation. For example, the verb *bakta'* 'hang up (to dry)' expresses that an agent hangs a patient on some location. The intention of a *bakta'* event is always to dry the hung thing, which makes an animate location extremely odd. My speakers commented that sentence in (392a), where the location is an animate referent 'Michael,' is extremely odd if the speaker is interpreted as commanding the blanket be hung to dry on Michael. My consultants commented that 'Michael' would have to stand with the blanket on him for awhile and the situation sounds entirely ridiculous. My consultants commented that the sentence in (392a) was better if the locative expression *mi' maikol* is interpreted as 'where Michael is.' However, my consultants much preferred the utterance in (392b) to say that the blanket should be hung 'where Michael is.'

(392)   a.   *Mi'*   *maikol*   *xi-baktai*   *gu*   *sa'ua'*
             PROX.HIGHER   Michael   IMP-hang.up   DET   blanket

             #Hang up the blanket (to dry) on Michael
             %Hang up the blanket where Michael is

        b.   *Mi'*   *xi-baktai*   *gu*   *sa'ua'*   *na-pai'*   *gu*   *Maikol*
             PROX.HIGHER   IMP-hang.up   DET   blanket   SUB-where   DET   Michael
                 kiik
                 stand.SG.ANIM

             'Hang up the blanket where Michael is'

The verb *kiisa'* 'put (vertically), stand' seems to be similar to *bakta'* 'hang up (to dry),' where an animate locative referent sounds ridiculous. My consultants reported that the sentence in (393) does express that the pitchfork was stood on the cow, but they could not imagine

any instance in which such a statement would be uttered.

(393) *%Dho*   *kɨɨ*   *gu*   *tɨtnora'*   *mu*   *baak*
      EVID.DIR   put.inside   DET   pitchfork   DIR   cow

     Intended: He stood the pitchfork on the cow (I saw it!)

The other verbs in Table 5.7 with locative participants are even less compatible with animate locations. The verb *gammu'* 'put inside (sack or bag)' is typically used to express filling a bag or sack and takes on a grotesque reading if the location is an animate referent. My consultants commented that the sentence in (394), which has an animate participant marked with the *-ta'm* 'in' postposition, sounds somewhat acceptable, where the corn is being stuffed into a crow or a person. However, they could not imagine anyone saying anything like it. They note that the sentence in (394) does not express that a crow or human was a material used to make a bag, instead they comment that the sentence just sounds like the speaker saw someone violently stuffing corn into a crow or person.

(394) *Dho*   *gaam*   *gu*   *juun*   *kakoon-ta'm/ma'nkam-ta'm*
      EVID.DIR   put.inside   DET   corn   crow-in/person-in

     'He put the corn inside a crow/person (I saw it!)'

    The verbs in Table 5.7 which entail locative participants pragmatically resist an animate interpretation. The pragmatic absurdity of an animate referent as a locative participant for such verbs seems to be strong enough to prohibit that participant being promoted, because such promotion would entail an animate locative. I stated in §5.2 that benefactives are introduced when promotion is not possible, this seems to hold for two cases. The first case, discussed in the initial part of §5.4, is where a verb simply lacks any semantic participant that is not a syntactic object. The second case, discussed in this section, is where promoting a semantic participant would result in a pragmatically useless verb. The locatives that are not promoted are not seen as compatible with an animate interpretation and it is not clear

what a promoted instrument would be in O'dam.[35]

5.5   Applicativization is a valency test

I find two reasons to believe that beneficiaries are introduced as the elsewhere function of O'dam applicatives. First, benefactives may only be introduced by an applicative if a) the verb base is a basic transitive, and b) the verb base lacks any implicit objects or entailed locative participants which are compatible with an animate interpretation. Intransitive verb bases and transitive verb bases with non-distinct subjects and objects always gain an external agent when combined with an applicative, as we saw in §5.1. Transitive verb bases either with an implicit object or which entail a locative participant must combine with the promotative function of applicatives, as discussed in §5.2. Second, we saw in this section, §5.4, that suppletive verb forms block the applicative, which may only combine with the verb form with the largest valency. In §5.4.1, I discussed cases where an entailed participant expressed as an adjunct is not promoted under applicativization. Such cases evidence the requirement that promotion under applicativization in O'dam involves adding an animacy entailment to the promoted object. Drawing this section to a close, we see that the function of O'dam applicatives can be used to probe argument structure because their function with a given verb base depends on the number of (distinct) arguments in the syntactic argument structure of the verb. The promotative versus benefactive use of applicative additionally shows that locative participants are always syntactic adjuncts, in contrast to secondary objects, which are syntactic arguments.

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[35]Although see Jerro (2017) for discussion of animate instruments in Kinyarwanda.

Chapter 6

House rules of a cross-linguistic game: The argument-adjunct distinction in O'dam

Linguists have long intuited that the universal distinction between grammatical functions should cache out in a common set of syntactic properties to distinguish those functions. I examined the distinction between the two overarching categories, arguments and adjuncts, within the O'dam language. Arguments typically express core, necessary participants of a verb, while adjuncts typically express optional or less privileged participants of a verb. My dissertation focused on the ways that O'dam distinguished these two functions and the extent to which the distinguishing features aligned with properties of arguments and adjuncts in other languages. I found that the functional distinction between arguments and adjuncts in O'dam is cross-linguistically typical, namely it is rooted in thematic roles which seem to be assigned by verbs. Where O'dam differs from other languages is in the extent to which the syntactic properties distinguishing grammatical functions are specific to O'dam.

From the outset, I followed Koenig et al.'s (2003) Semantic Obligatoriness Criterion in assuming that only expressions of participants entailed by the predicate headed by the verb could bear syntactic argument status. Expressions of non-entailed participants were assumed to categorically instantiate adjunct functions, as are those of some entailed participants. In §2.3 and Chapter 3 I showed that properties assumed to universally distinguish grammatical functions largely did not distinguish arguments from adjuncts in O'dam. The constituency facts of an O'dam clause do not clearly show head-complement relations among the verb and its dependents (i.e. a TP with an XP subject in a constituent with a VP containing a verb and its XP object). Instead, I identified three positions in a clause (PreV, V, PostV),

each of which containing its own set of freely or scopally ordered dependents. The lack of informative phrase structure was extended more broadly across XP dependents. I only found three cross-linguistically common properties that distinguished argument from adjunct dependents in O'dam: head-marking, Principle C effects, and adjunct island effects. Head-marking was particularly notable, though, because it underpredicts the number of arguments ditransitives and denominal verbs have.

I found that O'dam looks very much like a Pronominal Argument Language (Jelinek 1984) due to the weak distinction between arguments and adjuncts, as instantiated by the language's dependents. However, I also found that definiteness in O'dam is entirely pragmatic, although verb forms could impose a default definite interpretation on their arguments based on their assertive relationship to structural alternatives. This lack of definiteness in the language suggests that whatever anaphoric element within the verb is bound by the XP dependents is not analogous to lexical pronouns, because it lacks the key semantic impositions of lexical pronouns. Thus if the Pronominal Argument Hypothesis is assumed to involve argument saturation by something equivalent to a lexical pronoun (Evans 1999), then it is not clear that O'dam is a Pronominal Argument Language, though this is not the only interpretation of the PAH

In Chapters 4 and 5 I proposed two language-specific argumenthood tests that distinguished non-head marked objects from adjuncts. In Chapter 4, I proposed preverbal quantification to distinguish non-head marked secondary objects from locative expressions. Preverbal quantification occurs in the preverbal position and can quantify over most arguments of a verb, as well as the verb itself. Preverbal quantifiers categorically cannot quantify over adjuncts. In the case of instruments and locatives, preverbal quantification showed that these thematic roles systematically bear adjunct roles. The constraints on preverbal quantification over verbal arguments was largely based on the specific argument function of the dependent and semantic locality between the core event expressed by the verb and the participant expressed by the argument. I found that some subjects could not be quantified over, although it is not clear what unites such subjects. Recipient benefactives and some plain benefactives differed from other types of objects in that they could not be quantified over either. What differentiates recipient benefactives from recipients, and deputative benefactives, is that they

are associated with a transfer of possession event separate from the core event asserted by the verb. This suggests that argumenthood is tied to event locality, in addition to the typically assumed syntactic locality.

In Chapter 5 I showed that applicativization in O'dam was a useful test for probing the valency and argument structure of the non-applied verb. Verbs that only had one argument (i.e. intransitives) gain a subject-agent through applicativization. Lexical middles, verbs of ingestion, and verbs of perception acted like intransitives under applicativization (i.e. they gain an agent-subject). Such verbs are a cross-linguistically typically class of pseudotransitives due to their semantically reflexive nature. Transitive verbs gain a beneficiary through applicativization unless there is an entailed participant of the base verb that can be promoted to object. While incorporated nouns are not associated with head-marking, they are treated as objects under applicativization, as well as preverbal quantification, and cause their verb to gain a beneficiary. Finally, O'dam does not allow applicativization of ditransitive verbs, which seems to follow from a categorical prohibition on hypertransitive verbs. As evidence that applicativization in O'dam is a test for the argument structure and valency of the base verb, I showed that the entailed locative participants of motion verbs did not count towards the transitivity of the base verb: motion verbs that entail one non-locative participant are intransitive, motion verbs with two non-locative participants are transitive, etc. Summarizing broadly over these results, the thematic role assigned to the applied argument in O'dam is hierarchically determined. The applied argument added to an intransitive base must be an agent. If a verb already has an agent (i.e. it is transitive), and an entailed adjunct of a non-applied verb is compatible with an animate interpretation, applicativization must promote that participant to object status and cannot license a beneficiary. Failing all of this, a benefactive is added. This suggests that benefactive introduction is the elsewhere function of applicativization in O'dam, due to the semantic particularities of beneficiaries, rather than one of its core functions.

Head-marking, preverbal quantification, and applicativization characterize overlapping sets of arguments. Most head-marked objects (i.e. primary objects) and subjects could also be quantified over from the preverbal position and count toward their verb's valency under applicativization. However, preverbal quantification and applicativization both treat

non-head-marked secondary objects as objects, as well as incorporated nouns. Lexical middles, verbs of ingestion, and verbs of perception have two arguments for the purposes of head-marking and preverbal quantification, but only one for the purposes of applicativization. No single test, then, can be used to fully define argumenthood in O'dam. It is not clear how to interpret the results of these argumenthood tests taken together. It is not clear that secondary objects are any less of an argument simply because they lack head-marking, nor are benefactive recipients lesser arguments simply because they cannot be quantified over from the preverbal position. Unlike languages like Hebrew, it is not clear that the argumenthood tests can be stacked to rank arguments along a gradient of argumenthood. Each argumenthood test probes for a certain set of features and only looks among the arguments, but the presence of features relevant to more than one test does not necessarily entail that that dependent is more of an argument. Instead, an argument in O'dam seems to be characterized as a dependent which passes any single argumenthood test.

In contrast, the argumenthood tests stack quite nicely to form a clean, clear definition of adjuncts. Adjuncts are dependents which fail every argumenthood test. This definition is especially helpful in accounting for the behavior of instruments and locatives in O'dam. Dependents bearing these thematic roles can express participants that are entailed to exist by certain verbs, but they fail every argumenthood test because O'dam syntax stipulates they must be assigned adjunct roles. The messy definition of arguments versus the clean definition of adjuncts turns standard intuitions about arguments for adjuncts on their heads. Rather than arguments being special and looking for those special properties, perhaps it is best to begin with adjuncts as dependents utterly lacking any syntactic status and consider 'arguments' as dependents that are not adjuncts (i.e. have some amount of syntactic status). We can then look within the set of arguments, or non-adjuncts, for further distinctions. For example, subjects are cleanly distinguished from objects in O'dam in that they are co-referenced by a verbal suffix, which can raise out of the verb to be a preverbal free form. While the intuitive importance of arguments is enticing as a focus of study, perhaps focusing on the lowly, downtrodden adjunct will offer a better understanding how languages divvy up dependents by grammatical function.

6.1 The importance of the verb

One of the most striking takeaways of my exploration of the argument/adjunct distinction in O'dam is the centrality of the verb. I have mainly referred to O'dam's dependents throughout this dissertation, however, I only identified two properties that truly relied on the XP dependents themselves: Principle C effects and adjunct island effects. All other argumenthood tests in O'dam have the verb as their central component. Head-marking involves affixation of subject and primary object markers onto the verb itself, as does applicativization. Preverbal quantification occurs in the preverbal position of the clause, along with other clause-level modifiers, such as evidentials. This contrasts with constituent quantification, in which a quantifier quantified over whatever XP it forms a constituent with, regardless of the grammatical function of the XP. Quantifiers can only quantify over the verb from the preverbal position, which suggests that perhaps "preverbal quantifiers" are simply in the constituent quantification position of the verb. This combines with work on control constructions in O'dam, which finds that controlled complement clauses differ from all other subordinate clauses in their argumenthood relationship to the matrix verb (Everdell & Melchin 2021; Everdell et al. 2021). Preverbal quantifiers can quantify arguments of a controlled verb from the preverbal position of the controller verb. This is to say, the control verb treats its controlled complement as an extension of its own argument structure. In contrast, putative CP arguments of non-control verbs are nominal-like in that their argument structure is not stitched to the control verb's, and matrix preverbal quantifiers cannot quantify over dependents of non-controlled subordinate clauses.

The centrality of the verb in argumenthood tests suggests that the verb contains all of the information about grammatical functions. Following Jelinek's (1984) Pronominal Argument Hypothesis, the O'dam verb seems to have everything needed for a functionally complete clause. XP dependents largely lack grammatical function distinctions, seemingly because that information is entirely contained within the verb. Formally, the lack of clear constituent relations among O'dam's dependents lends itself especially to a lexicalist analysis where the verb has its own functional structure (drawing from LFG) that only requires the verb for its phrase structural exponence. XP dependents can refer to different grammatical functions in the verb's functional structure, but their f-structures only contain referential

information, not grammatical functional information (see also Donohue & Sag 1999 and Bender 2008). The mapping between the subject and object functions and the verbal head-marking is a well-formedness condition on the phrase structural realization of the verb; it is not itself an indicator of grammatical function.

Alternatively, the agglutinating structure of the O'dam verb lends itself to a non-lexicalist analysis where the various functional heads both introduce and license their argument. Like with the lexicalist analysis, argumenthood tests are essentially syntactic processes that occur before the level of the XP dependents. I find no evidence that the XP dependents raise out from the verb, however. In principle, the verb structure could contain a trace t for each argument, when that dependent is realized as an XP. More likely in my estimation is that the XP dependents are simply generated outside of the V in A′-position and anaphorically bind *pro*s, which sit within the substructure of the V. As with the lexicalist analysis, the subject and object markers are not themselves spell outs of functional heads that introduce or license grammatical functions. There was no evidence, for example, that the appearance of the subject as a verbal suffix or a preverbal free form affected the results of any argumenthood test. This suggests that the subject and primary object markers are AgrS/O heads, which Agree with the *pro*s that sit in the relevant argument positions of the verb's substructure, were one to adopt a configurational analysis.

The centrality of the verb in testing grammatical functions in O'dam suggests that Jelinek's (1984) Pronominal Argument Hypothesis correctly accounts for the behavior of O'dam, assuming that the relevant type of pronominal is not necessarily a personal pronoun. However, this creates a rather troubling issue for characterizing word order in the language. Previous work on O'dam characterizes the language as a verb-initial language, including work I have co-written (Everdell & García Salido 2022a,b; García Salido et al. 2021a; García Salido & Everdell 2019). This characterization comes from the order of the verb plus its XP dependents. We see in the tree structure in (396) that the verb does indeed precede its XP dependents. This characterization does not permit the relative ordering of S and O, because those are freely ordered after the verb.

(396)

```
                    S
                   / \
                  S   XP*
                 / \
             PreV*   V
```
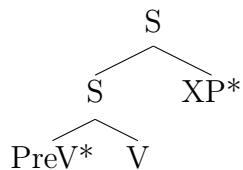
However, given that the XP dependents seem adjunct-like, it is perhaps worth contesting this verb-initial categorization. We saw in Chapters 2 and 4 that many of the core parts of an O'dam clause are in the preverbal position, for example, particles linking a clause to another clause or the discourse more broadly occur in the preverbal position (García Salido 2014). Likewise, when the subject raises out of the verb, it raises to the preverbal position, not the postverbal position. In contrast, the postverbal position is unordered an almost exclusively consists of XP dependents. This suggests that the word order of O'dam should not be determined based on the order of the verb and its XP dependents, because word order is almost never considered based on adjunct orderings (e.g. Dryer 2007).

Instead, this suggests that O'dam is a verb-final language, because the verb follows all of the core functional elements of the clause's phrase structure. A verb-final analysis brings O'dam in line with other Uto-Aztecan languages, which are typically anything but verb initial (Langacker 1977), see for example Campbell et al.'s (1986) discussion of areal influences on Classical Nahuatl. A verb-final analysis also aligns with Hale's (1959) analysis of Tohono O'odham, which is another Tepiman language and shows many of the same word order facts as O'dam, see Payne (1987) and Hale (1992). The verb final position is a common position for adjunct dependents across Tepiman languages.[1] This suggests that some ancestor of O'dam simply reanalyzed all XPs as adjunct dependents and moved them to the postverbal adjunct position. Rather than O'dam altering its basic word order, as occurred in Nahuatl (Campbell et al. 1986), the XP dependents were simply reanalyzed as a different grammatical function, leaving behind everything else in its original order.

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[1]For language specific discussions of word order in Tepiman see Shaul (1982) for Névome, Bascom (1982) for Northern Tepehuan, Estrada Fernández (2014) for Pima Bajo, and Saxton (1982) and Zepeda (2016) for further discussion of Tohono O'odham.

6.2 Looking to the future

Looking to the future, a reasonable next step is examining the factors that caused O'dam to have such a weak functional distinction between its XP dependents. Some surface facts point to clues for the answer: O'dam dependents lack case-marking and are not positionally distinguished based on grammatical function. This means that there is nothing to diachronically maintain the special relation between the verb and its argument XPs. Verbal dependents can lose properties distinguishing grammatical functions over time and speakers can place further reliance on the structure of the verb for necessary grammatical functional information. Previous work has additionally noted that it is quite rare for a given clause to have more than one XP referring to an argument in each clause (García Salido 2014; Willett 1991), and my own experience supports this. All sentences used in this dissertation that contain more than one XP referring to an argument were elicited and are not typical of naturalistic speech. This suggests that discourse norms may restrict the function of argument XPs. Mithun (2001) points out that discourse norms for speakers of Tuscarora (Iroquoian) involve no more than one introduced participant per predicate. Thus, grammatical functional information is perhaps not necessary for XP dependents, if at most one argument-referring XP surfaces per clause, then the function of that XP will likely be made clear through the structure of the discourse. Payne's (1992) investigation of word order in Tohono O'odham discourse also found that the number of overt dependents was at most one less than the transitivity of the verb. This suggests that O'dam's avoidance of multiple overt argument XPs may be a feature of Tepiman languages as a group.

The function of argument XP expression ties to the factors involved in primary object marking for ditransitive verbs. Recall that secondary objects are notable because they are the only arguments that lack and overt exponence in the clause. In fact, if a secondary object is pronominal, it is simply disallowed from having an overt exponent in the clause, because XPs in O'dam cannot be pronouns. While previous work on O'dam noted that primary objects tend to be animate and plural (García Salido 2014), a better explanation perhaps lies in the likelihood for primary and secondary objects to be pronominal, topical, or focused. These properties more closely relate to the symmetrical behavior of primary and secondary objects with regards to argumenthood tests other than head-marking. Likewise, one major feature

that distinguishes head-marking from the other argumenthood tests in O'dam is that it is the only one that entails obligatory exponence in the clause. A head-marked argument will be exponed by the verbal head-marking, even if it lacks a co-referring XP. This suggests that the place to look for the factors governing primary/secondary objecthood lies in the discourse structural factors determining overt XP expression, rather than animacy and number.

Finally, I have noted throughout this dissertation that the properties I have identified of the argument/adjunct distinction in O'dam seem to be reflected in other Tepiman languages. Unfortunately, Tepiman languages as a group are understudied and there is little work on the types of properties that distinguish grammatical functions, aside from head-marking. Thus, a lasting question from this dissertation is whether O'dam is unique in the Tepiman subgroup of Uto-Aztecan in having such a non-canonical instantiation of grammatical functional distinctions. Alternatively, further investigation of grammatical functional divisions across the Tepiman subgroup may suggest that O'dam is not particularly notable and simply inherited the argument/adjunct distinction, and its associated instantiation, from Proto-Tepiman. My hope here is that my exploration of the argument/adjunct distinction in O'dam sets a strong foundation from which to build from for any question related to the synchronic properties of argumenthood or its diachronic development.

Abbreviations

1	first person	COND	conditional	EXHORT	exhortative
2	second person	CONT	continuative	EXIST	existential
3	third person	COORD	coordinator	EXPS	expository
A	agent	COP	copula	F	feminine
ABS	absolutive	DAT	dative	FACT	factive
ACC	accusative	DC	dependent clause marker	FOC	focus
ADVR	adverbializer			FUT	future
AGT	agent	DEM	demonstrative	GEN	genitive
AL	alienable	DES	desiderative	HAB	habitual
ANIM	animate	DET	determiner	HORT	hortative
APPL	applicative	DIR	directional	IAL	irregular alienable
ART	article	DISJ	disjunction	IMP	imperative
ASP	aspect	DIST	distal	IMPF	imperfective
AUG	augmentative	DP	dual-plual or non-singular	INAN	inanimate
AUX	auxiliary			INC	inceptive
AV	agent voice	DU	dual	IND	indicative
BEN	benefactive	DUP	duplicative	INDF	indefinite
CL	classifier	DUR	durative	INFR	inferential
CMP	completive	ERG	ergative	INT.NR	non-realized intention
COM	comitative	EST	stative		
COMP	complementizer	EVID.DIR	direct evidential	INTER	interrogative
		EXCL	exclusive	INTERJ	interjection

269

INTR	intransitive	PERF	perfect	REP.UI	reportative unknown information
IRR	irrealis	PFV	perfective		
IT	iterative	PL	plural	RES	resultative
JN	joiner vowel	PNCT	punctual	RET	rhetorical
LOC	locative	PO	primary object	SBJ	subject
M	masculine	POSS	possessive	SBJV	subjunctive
MID	middle	POSSD	possessed	SENS	sensorial
MIR	mirative	PRES	present	SEQ	sequential
MOV	movement	PRF	perfect	SG	singular
N	neuter	PROG	progressive	ST	stative
NEG	negative	PROX	proximal	SUB	subordinator
NMLZ	nominalizer	PRS	present	TEMP	temporal
NOM	nominative	PST	past	TERM	terminative
NPAST	non-past	PV	patient voice	TOP	topic
OBJ	object	Q	question particle	TR	transitive
OPT	optative	QUANT	quantifier	VBLZ	verbalizer
P	patient	QUOT	quotative	VIZ	visual
PART	particle	REFL	reflexive	Z	zoic
PAST	past	REL	relative		
PAT	patient	REP	repetitive		

References

Abbott, Barbara. 2004. Definiteness and Indefiniteness. In: *The Handbook of Pragmatics*. Ed. by L. R. Horn & G. Ward. Blackwell Publishing, pp. 122–149.

Abbott, Clifford, Amos Christjohn & Maria Hinton. 1996. *An Oneida dictionary*. Oneida: Oneida Nation of Wisconsin.

Ackema, Peter. 2015. Arguments and adjuncts. In: *Syntax: Theory and Analysis*. Ed. by T. Kiss & A. Alexiadou. Berlin: De Gruyter Mouton, pp. 246–274.

Ackema, Peter & Maaike Schoorlemmer. 2017. Middles. In: *The Wiley Blackwell Companion to Syntax*. Ed. by M. Everaert & H. C. van Riemsdijk. 2nd ed. John Wiley & Sons, Inc.

Aguilar-Guevara, Ana & Joost Zwarts. 2010. Weak definites and reference to kinds. In: *Proceedings of SALT 20*. Ed. by N. Li & D. Lutz, pp. 179–196.

Aguilar-Guevara, Ana & Joost Zwarts. 2014. Weak definites refer to kinds. *Recherches linguistiques de Vincennes* 42, pp. 33–60.

Al Khalaf, Eman. 2019. Floating quantifiers are autonomous phrases: A movement analysis. *Glossa: a journal of general linguistics* 4.1, pp. 1–23.

Aldridge, Edith. 2007. Minimalist Analysis of Ergativity. *Sophia Linguistica* 55, pp. 123–142.

Alexiadou, Artemis. 2009. On the Role of Syntactic Locality in Morphological Processes: The Case of (Greek) Derived Nominals. In: *Quantification, Definiteness, and Nominalization*. Ed. by A. Giannakidou & M. Rathert. Oxford University Press, pp. 253–280.

Alsina, Alex. 1992. On the Argument Structure of Causatives. *Linguistic Inquiry* 23.4, pp. 517–555.

Amberber, Mengistu. 2002. Quirky alternations of transitivity: The case of ingestive predicates. In: *Language universals and variation*. Ed. by M. Amberber & P. Collins. Westport, CT: Praeger, pp. 1–19.

Anagnostopoulou, Elena. 2017. Clitic Doubling. In: *The Wiley Blackwell Companion to Syntax, Second Edition*. Ed. by M. Everaert & H. C. van Riemsdijk. Wiley Blackwell.

Anderbois, Scott & Robert Henderson. 2015. Linguistically establishing discourse conext: two case studies from Mayan languages. In: *Methodologies in Semantic Fieldwork*.

Ed. by M. R. Bochnak & L. Matthewson. Oxford: Oxford University Press, pp. 207–232.

Andrews, James Richard. 1988. Remarks on causatives and applicatives in Classical Nahuatl. In: *Smoke and Mist: Mesoamerican Studies in Memory of Thelma D. Sullivan.* Ed. by J. K. Josserand & K. Dakin. BAR International Series 402(ii), pp. 423–447.

Apresjan, Yuri D. 1992. *Lexical semantics: User's guide to contemporary Russian vocabulary.* Karoma Publishing.

Ariel, Mira, Elitzur Dattner, John W Du Bois & Tal Linzen. 2015. Pronominal datives: The royal road to argument status. *Studies in Language* 39.2, pp. 257–321.

Arka, I Wayan. 2014. Locative-related roles and the argument-adjunct distinction in Balinese. *Linguistic Discovery* 12.2, pp. 56–84.

Austin, Peter. 1997. Causatives and applicatives in Australian Aboriginal languages. In: *The Dative and Related Phenomena.* Ed. by K. Matsumura & T. Hayasi. Tokyo: Hitsuji Shobo, pp. 165–225.

Austin, Peter. 2001. Word order in a free word order language: the case of Jiwarli. In: *Forty years on: Ken Hale and Australian languages.* Ed. by J. Simpson, D. Nash, M. Laughren, P. Austin & B. Alpher. Pacific Linguistics Canberra, Australia.

Austin, Peter & Joan Bresnan. 1996. Non-configurationality in Australian Aboriginal languages. *Natural Language & Linguistic Theory* 14.2, pp. 215–268.

Bach, Emmon. 1986. The algebra of events. *Linguistics and philosophy* 9.1, pp. 5–16.

Baker, Mark C. 1988. *Incorporation: A theory of grammatical function changing.* University of Chicago Press.

Baker, Mark C. 1991. On some subject/object non-asymmetries in Mohawk. *Natural Language & Linguistic Theory* 9.4, pp. 537–576.

Baker, Mark C. 1996. *The polysynthesis parameter.* Oxford University Press.

Baker, Mark C. 2001. Phrase Structure as Representation of "Primitive" Grammatical Relations. In: *Objects and other Subjects: Grammatical Functions, Functional Categories and Configurationality.* Ed. by W. D. Davies & S. Dubinsky. Dordrecht/Boston/Londen: Kluwer Academic Publishers, pp. 21–52.

Baker, Mark C. 2003. Agreement, dislocation, and partial configurationality. In: *Formal Approaches to Function in Grammar: In honor of Eloise Jelinek.* Ed. by A. Carnie, H. Harley & M. A. Willie. John Benjamins Publishing.

Barbu, Roxana-Maria. 2015. Verbs and Participants: Nonlinguists' Intuitions. MA thesis. Carleton University.

Barbu, Roxana-Maria. 2020. On the psycholinguistics of argumenthood. PhD thesis. Carleton University.

Barbu, Roxana-Maria & Ida Toivonen. 2016a. Arguments and Adjuncts: at the Syntax-Semantics Interface. In: *Proceedings of the Florida Linguistics Yearly Meeting (FLYM) 3*. Ed. by E. Thompson.

Barbu, Roxana-Maria & Ida Toivonen. 2016b. Event participants and linguistic arguments. In: *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Ed. by A. Papafragou, D. Grodner, D. Mirman & J. Trueswell. Austin, TX: Cognitive Science Society, pp. 1961–1966.

Bascom, Burton. 1965. Proto-Tepiman (Tepehuan-Piman). PhD thesis. University of Washington.

Bascom, Burton. 1982. Northern Tepehuan. In: *Studies in Uto-Aztecan Grammar Volume 3: Uto-Aztecan grammatical sketches*. Ed. by R. W. Langacker. Dallas, TX: Summer Institute of Linguistics and The University of Texas at Arlington, pp. 267–393.

Basilico, David. 2008. Particle verbs and benefactive double objects in English: high and low attachments. *Natural Language & Linguistic Theory* 26, pp. 731–773.

Beavers, John. 2010. The structure of lexical meaning: Why semantics really matters. *Language*, pp. 821–864.

Beavers, John. 2011a. An aspectual analysis of ditransitive verbs of caused possession in English. *Journal of semantics* 28.1, pp. 1–54.

Beavers, John. 2011b. On affectedness. *Natural Language & Linguistic Theory* 29.2, pp. 335–370.

Beavers, John, Michael Everdell, Kyle Jerro, Henri Kauhanen, Andrew Koontz-Garboden, Elise LeBovidge & Stephen Nichols. 2021. States and changes-of-state: A crosslinguistic study of the roots of verbal meaning. *Language* 97.3.

Beavers, John & Andrew Koontz-Garboden. 2013a. Complications in diagnosing lexical meaning: A rejoinder to Horvath & Siloni (2013). *Lingua* 134, pp. 210–218.

Beavers, John & Andrew Koontz-Garboden. 2013b. In defense of the reflexivization analysis of anticausativization. *Lingua* 131, pp. 199–216.

Beavers, John & Chiyo Nishida. 2010. The Spanish dative alternation revisited. In: *Romance Linguistics 2009: Selected Papers from the 39th Linguistic Symposium on Romance Languages*. Ed. by S. Colina, A. Olarrea & A. Carvalho. Amsterdam: John Benjamins, pp. 217–30.

Beavers, John & Ivan A Sag. 2004. Coordinate ellipsis and apparent non-constituent coordination. In: *The Proceedings of the 11th International Conference on Head-Driven*

Phrase Structure Grammar. Ed. by S. Müller. Stanford, CA: CSLI Publications, pp. 48–69.

Belyaev, Oleg. Forthcoming. Grammatical functions: their classification and properties. In: *Handbook of Lexical Functional Grammar*. Ed. by M. Dalrymple. Berlin: Language Science Press.

Bender, Emily M. 2008. Radical Non-Configurationality without Shuffle Operators: An Analysis of Wambaya. In: *Proceedings of the 15th International Conference on Head-Driven Phrase Structure Grammar National Institute of Information and Communications Technology, Keihanna*. Ed. by S. Müller. CA: CSLI Publications, pp. 6–24.

Bennett, Michael & Barbara H Partee. 1972. *Toward the logic of tense and aspect in English*. Bloomington: Indiana University Linguistics Club.

Berman, Ruth. 1982. Dative marking of the affectee role: Data from Modern Hebrew. *Hebrew Annual Review* 6, pp. 35–59.

Bickel, Balthasar & Johanna Nichols. 2008. Case marking and alignment. In: *The Oxford Handbook of Case*. Ed. by A. L. Malchukov & A. Spencer. New York: Oxford University Press, pp. 304–321.

Bleam, Tonia. 2001. Properties of the double object constructions in Spanish. In: *A Romance Perspective of Language Knowledge and Use*. Ed. by R. Nuñez-Cedeño, L. López & R. Cameron. Amsterdam: John Benjamins.

Bleotu, Adina Camelia. 2019. *Towards a Theory of Denominals: A Look at Incorporation, Phrasal Spell-Out and Spanning*. Leiden, The Netherlands: Brill.

Bochnak, M. Ryan & Lisa Matthewson, eds. 2015. *Methodologies in Semantic Fieldwork*. Oxford: Oxford University Press.

Bohnemeyer, Jürgen, Lindsay K. Butler & T. Florian Jaeger. 2016. Head-Marking and Agreement: Evidence from Yucatec Maya. In: *Explorations of the Syntax-Semantics Interface*. Ed. by J. Fleischhauer, A. Latrouite & R. Osswald. Berlin, Boston: Düsseldorf University Press.

Bohnemeyer, Jürgen & Timothy J. Tilbe. 2021. Argument realization and discourse status in Yucatec, a purely head-marking language. *Amerindia* 43, pp. 249–289.

Borer, Hagit & Yosef Grodzinsky. 1986. Syntactic Cliticization and Lexical Cliticization: The Case of Hebrew Dative Clitics. In: *The Syntax of Pronominal Clitics*. Ed. by H. Borer. New York: Academic Press, pp. 175–217.

Bošković, Željko. 2002. On multiple *wh*-fronting. *Linguistic inquiry* 33.3, pp. 351–383.

Bowern, Claire. 2015. *Linguistic Fieldwork: A practical guide*. 2nd ed. New York: Palgrave Macmillan.

Branan, Kenyon & Michael Yoshitaka Erlewine. to appear. Anti-pied-piping. *Language*, pp. 1–74.

Bresnan, Joan. 1982. Control and complementation. In: *The Mental Representation of Grammatical Relations*. Ed. by J. Bresnan. Cambridge, MA: MIT Press, pp. 292–390.

Bresnan, Joan. 2001. The emergence of the unmarked pronoun. In: *Optimality-theoretic syntax*. Ed. by G. Legendre, J. Grimshaw & S. Vikner. The MIT Press, pp. 113–142.

Bresnan, Joan & Sam A Mchombo. 1987. Topic, pronoun, and agreement in Chicheŵa. *Language* 63.4, pp. 741–782.

Bresnan, Joan & Sam A. Mchombo. 1995. The lexical integrity principle: Evidence from Bantu. *Natural Language and Linguistic Theory* 13, pp. 181–254.

Brody, Michael. 1993. θ-theory and arguments. *Linguistic Inquiry* 24.1, pp. 1–23.

Bruening, Benjamin. 2018. The lexicalist hypothesis: Both wrong and superfluous. *Language* 94.1, pp. 1–42.

Burton, Strang & Lisa Matthewson. 2015. Targeted Construction Storyboards in Semantic Fieldwork. In: *Methodologies in Semantic Fieldwork*. Ed. by M. R. Bochnak & L. Matthewson. Oxford: Oxford University Press, pp. 135–156.

Butt, Miriam. 2007. The role of pronominal suffixes in Punjabi. *Architecture, Rules, and Preferences*, pp. 341–368.

Campbell, Lyle, Terrence Kaufman & Thomas C Smith-Stark. 1986. Meso-America as a linguistic area. *Language* 62.3, pp. 530–570.

Campbell, Lyle & Ronald W. Langacker. 1987. Proto-Aztecan Vowels: Part III. *International Journal of American Linguistics* 44.4, pp. 262–279.

Campos, Héctor. 1986. Indefinite object drop. *Linguistic inquiry* 17.2, pp. 354–359.

Cappelen, Herman & Ernest Lepore. 2005. *Insensitive semantics: A defense of semantic minimalism and speech act pluralism*. Oxford: Blackwell Publishing.

Carlson, Greg, Rachel Sussman, Natalie Klein & Michael Tanenhaus. 2006. Weak definite Noun Phrases. In: *Proceedings of NELS 36*. Ed. by C. Davis, A. R. Deal & Y. Zabbal. Amherst, MA: GLSA, pp. 179–196.

Carston, Robyn. 2022. Syntactic structures and pragmatic meanings. *Synthese* 200, p. 430.

Censabella, Marisa. 2010. Beneficiaries and recipients in Toba (Guaycurú). In: *Benefactives and malefactives: Typological perspectives and case studies*. Ed. by F. Zúñiga & S. Kittilä. Vol. 92. John Benjamins Publishing, pp. 185–202.

Chaves, Rui P. 2008. Linearization-based word-part ellipsis. *Linguistics and Philosophy* 31, pp. 261–307.

Chierchia, Gennaro. 1998. Plurality of mass nouns and the notion of "semantic parameter". In: *Events and grammar*. Ed. by S. Rothstein. Dordrecth: Kluwer, pp. 53–103.

Chomsky, Noam. 1965. *Aspects of the Theory of Syntax*. Cambridge, MA: MIT Press.

Chomsky, Noam. 1973. Conditions on transformations. In: *A festschrift for Morris Halle*. Ed. by S. Anderson & P. Kiparsky. New York: Holt, Rinehart and Winston, pp. 232–286.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, Noam. 1982. *Some concepts and consequences of the theory of Government and Binding*. MIT press.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.

Chung, Sandra & William Ladusaw. 2003. *Restriction and saturation*. Cambridge, Mass.: MIT Press.

Cinque, Guglielmo. 1990. *Types of $\bar{A}$-dependencies*. MIT press.

Collins, James N. 2016. Reasoning about definiteness in a language without articles. In: *Semantics and Linguistic Theory (SALT)*. Ed. by M. Moroney, C.-R. Little, J. Collard & D. Burgdorf. Vol. 26. LSA and CLC Publications, pp. 82–102.

Collins, James N. 2019. Definiteness determined by syntax A case study in Tagalog. *Natural Language & Linguistic Theory* 37, pp. 1367–1420.

Copestake, Ann. 1992. The representation of lexical semantic information. PhD thesis. University of Sussex.

Coppock, Elizabeth & David Beaver. 2012. Weak uniqueness: The only difference between definites and indefinites. In: *Semantics and Linguistic Theory*. Ed. by A. Chereches. Vol. 22, pp. 527–544.

Coppock, Elizabeth & David Beaver. 2015. Definiteness and determinacy. *Linguistics and philosophy* 38.5, pp. 377–435.

Coppock, Elizabeth & Stephen Wechsler. 2012. The objective conjugation in Hungarian: Agreement without phi-features. *Natural Language & Linguistic Theory* 30.3, pp. 699–740.

Corbett, Greville G. 2006. *Agreement.* Cambridge: Cambridge University Press.

Cornillie, Bert. 2010. On conceptual semantics and discourse functions: The case of Spanish modal adverbs in informal conversation. *Review of Cognitive Linguistics. Published under the auspices of the Spanish Cognitive Linguistics Association* 8.2, pp. 300–320.

Croft, William. 2001. *Radical construction grammar: Syntactic theory in typological perspective.* Oxford University Press on Demand.

Davies, William D. & Stanley Dubinsky, eds. 2001. *Objects and other Subjects: Grammatical Functions, Functional Categories and Configurationality.* Dordrecht/Boston/Londen: Kluwer Academic Publishers.

Davis, Henry. 2009. Cross-linguistic variation in anaphoric dependencies: evidence from the Pacific Northwest. *Natural Language & Linguistic Theory* 27, pp. 1–43.

Davis, Henry, Dwight Gardiner & Lisa Matthewson. 1993. A comparative look at WH-questions in Northern Interior Salish. In: *28th international conference on Salish and Neighboring languages.* Vol. 28, pp. 79–95.

Davis, Henry & Lisa Matthewson. 2009. Issues in Salish syntax and semantics. *Language and Linguistics Compass* 3.4, pp. 1097–1166.

Davis, Henry, Ryan Waldie & Rachel Wojdak. 2007. Condition C Effects in Nuu-chah-nulth. *The Canadian Journal of Linguistics/La revue canadienne de linguistique* 52.1/2, pp. 185–222.

Deal, Amy Rose. 2013. Possessor raising. *Linguistic Inquiry* 44, pp. 391–432.

Deal, Amy Rose. 2015. Reasoning about equivalence in Semantic Fieldwork. In: *Methodologies in Semantic Fieldwork.* Ed. by M. R. Bochnak & L. Matthewson. Oxford: Oxford University Press, pp. 157–174.

Deal, Amy Rose. 2017. External Possession and Possessor Raising. In: *The Wiley Blackwell Companion to Syntax.* Ed. by M. Everaert & H. C. van Riemsdijk. 2nd ed. John Wiley & Sons, Inc.

Déchaine, Rose-Marie & Martina Wiltschko. 2002. Decomposing pronouns. *Linguistic inquiry* 33.3, pp. 409–442.

Diessel, Holger. 1999. *Demonstratives: Form, function and grammaticalization.* Amsterdam/Phildelphia: John Benjamins Publishing Company.

Dixon, R. M. W. & Alexandra Y Aikhenvald. 2018. A Typology of Argument-Determined Constructions. In: *Language at Large: Essays on Syntax and Semantics.* Ed. by A. Y. Aikhenvald & R. M. W. Dixon. Leiden, The Netherlands: Brill., pp. 44–85.

Dixon, R.M.W. 1977. *A grammar of Yidiny.* Cambridge: Cambridge University Press.

Donohue, Cathryn, Mark Donohue, Miriam Butt & Tracy Holloway King. 2004. On the special status of instrumentals. In: *Proceedings of the LFG04 Conference, On–line proceedings.* Stanford, CA: CSLI Publications.

Donohue, Cathryn & Ivan A. Sag. 1999. Domains in Warlpiri. In: *Sixth International Conference on HPSG–Abstracts 04–06 August 1999.* Edinburgh: University of Edinburgh, pp. 101–116.

Dorreen, Kieran, Sarah van Eyndhoven, Clare Li, Jennifer Middendorf, Naomay Jibe Tor, Vera Hohaus & Heidi Quinn. 2017. Beekeeper. In: *Totem Field Storyboards.* Retrieved from http://www.totemfieldstoryboards.org on July 30, 2019.

Dowty, David. 1982. Grammatical relations and Montague grammar. In: *The nature of syntactic representations.* Ed. by P. Jacobson & G. K. Pullum. Dordrecht: Reidel, pp. 79–130.

Dowty, David. 2003. The dual analysis of adjuncts/complements in categorial grammar. In: *Modifying adjuncts.* Ed. by E. Lang, C. Maienborn & C. Fabricius-Hansen. Walter de Gruyter Berlin.

Dryer, Matthew. 2007. Word order. In: *Language Typology and Syntactic Description.* 2nd ed. Vol. 1. Cambridge University Press, pp. 61–131.

ELAN (Version 6.5) [Computer software]. 2023. Retrieved from https://archive.mpi.nl/tla/elan.

Enfield, Nicholas J. 2007. *A Grammar of Lao.* Berlin: Mouton de Gruyter.

Enfield, Nicholas J. 2010. Questions and responses in Lao. *Journal of Pragmatics* 42.10, pp. 2649–2665.

Erteschik-Shir, Nomi. 2013. Information Structure and (in)definiteness. In: *Crosslinguistic Studies on Noun Phrase Structure and Reference.* Ed. by P. Cabredo Hofherr & A. Zribi-Hertz. Leiden/Boston: Brill, pp. 23–51.

Esteban, Avelino Corral. 2012. A Role And Reference account of interrogative sentences In Lakhota. *ITB Journal* 13.1, pp. 25–45.

Estrada Fernández, Zarina. 2014. *Gramática de referencia del pima bajo: Volumen I.* Hermosillo, Sonora: Universidad de Sonora.

Evans, Nicholas. 1999. Why argument affixes in polysynthetic languages are not pronouns: evidence from Bininj Gun-wok. *STUF-Language Typology and Universals* 52.3-4, pp. 255–281.

Evans, Nicholas. 2002. The true status of grammatical object affixes: Evidence from Bininj Gun-wok. In: *Problems of polysynthesis.* Ed. by N. Evans & H.-J. Sasse. Berlin: Akademie, pp. 15–50.

Everdell, Michael. 2018. Flavors of *-ga*: A possession class suffix in O'dam. Qualifying paper, The University of Texas at Austin.

Everdell, Michael. 2021a. Constituency in O'dam.

Everdell, Michael. 2021b. *From Whence Arise Arguments? Argumenthood in O'dam*. Poster presented at the *2021 SSILA Annual Meeting*. University of California, Berkeley. January 7-10, 2021.

Everdell, Michael & Kristin Denlinger. 2018. A study of O'dam suppletion and category shift. In: *Syntax of the World's Languages 8*. INALCO: Paris, France.

Everdell, Michael & Gabriela García Salido. 2022a. Existential Negation in O'dam. In: *The Negative Existential Cycle*. Ed. by A. Hamari & L. Veselinova. Berlin: Language Science Press, pp. 553–586.

Everdell, Michael & Gabriela García Salido. 2022b. Los aplicativos en tepehuano del sureste (o'dam) y tepehuano del suroeste (audam). *Cuadernos de Lingüística de El Colegio de México* 9.

Everdell, Michael & Gabriela García Salido. 2023. *Evidentiality as the source of discourse-genre: Evidence from O'dam (Durango, México)*. Talk given at the University of California Berkeley Fieldwork Forum (FForum) https://lx.berkeley.edu/fforum. March 15th.

Everdell, Michael & Paul B. Melchin. 2021. Control the sentence, subordinate the pronoun: on the status of controlled versus non-controlled complement clauses in O'dam. In: *WCCFL 39 Conference Proceedings*.

Everdell, Michael, Paul B. Melchin, Ash Asudeh & Daniel Siddiqi. 2021. Beyond c-structure and f-structure: On the argument-adjunct distinction in O'dam. In: *Proceedings of the LFG'21 Conference, On-Line*. Ed. by M. Butt & I. Toivonen. Stanford, CA: CSLI Publications.

Falk, Yehuda N. 2006. *Subjects and universal grammar: An explanatory theory*. Vol. 113. Cambridge University Press.

Falk, Yehuda N. 2012. Superiority effects. unpublished ms.

Fillmore, Charles J. 1970. The grammar of Hitting and Breaking. In: *Readings in English transformational grammar*. Ed. by R. Jacobs & P. S. Rosenbaum. Waltham: Ginn, pp. 120–133.

Filmore, Charles J. 1986. Pragmatically Controlled Zero Anaphora. In: *Proceedings of the Twelfth Annual Meeting of the Berkeley Linguistics Society*. Ed. by V. Nikiforidou, M. VanClay, M. Niepokuj & D. Feder, pp. 95–107.

Findlay, Jamie Y., Roxanne Taylor & Anna Kibort. Forthcoming. Argument structure and mapping theory. In: *Handbook of Lexical Functional Grammar*. Ed. by M. Dalrymple. Berlin: Language Science Press.

Forker, Diana. 2014. A canonical approach to the argument/adjunct distinction. *Linguistic Discovery* 12.2, pp. 27–40.

Fox, Danny & Roni Katzir. 2011. On the characterization of alternatives. *Natural Language Semantics* 19, pp. 87–107.

Gambarage, Joash Johannes & Lisa Matthewson. 2022. The Bantu-Salish connection in determiner semantics. *Glossa: a journal of general linguistics* 7.1.

García Salido, Gabriela. 2012. Las construcciones causativas en tepehuano del sur (o'dam). *UniverSOS* 9, pp. 163–175.

García Salido, Gabriela. 2014. Clause linkage in Southeastern Tepehuan: a Uto-Aztecan language of Northern Mexico. PhD thesis. The University of Texas at Austin.

García Salido, Gabriela. 2017. Las descripciones locativas en tepehuano del sureste (O'dam). In: *Los nortes de México: Culturas, Geografías y Temporalidades*. Ed. by E. A. M. Pineda & J. A. V. Romo. México: Instituto Nacional de Antropología e Historia-Escuela de Antropología e Historia del Norte de México.

García Salido, Gabriela. 2018. Gi Jau 'El tlacuache'. Una aproximación a los marcadores de unión de cláusula en un texto del tepehuano del suroeste (audam). *Tlalocan*, pp. 29–74.

García Salido, Gabriela. 2021. Headless Relative Clauses in Southeastern Tepehuan (O'dam). In: *Headless Relative Clauses in Mesoamerican Languages*. Ed. by I. Caponigro, H. Torrence & R. Zavala. Oxford University Press, pp. 58–78.

García Salido, Gabriela, Inocencia Arellano & Michael Everdell. 2021a. *Cham ɇkamtam* "place of unfulfillment". *Texts in the Indigenous Languages of the Americas-Internal Journal of American Linguistics* 87. Ed. by G. García Salido & T. Thornes, pp. 159–168.

García Salido, Gabriela, Inocencia Arrellano Mijarez & Michael Everdell. 2021b. Southeastern Tepehuan. *International Journal of American Linguistics* 87.Supp. 1, S159–S168.

García Salido, Gabriela & Michael Everdell. 2019. Supleción en tepehuano del sureste (o'dam). *Revista Lingüística Mexicana* 1.2, pp. 81–102.

García Salido, Gabriela & Michael Everdell. 2020. Southern Tepehuan (Durango and Narayit, Mexico)-Language Snapshot. *Language Documentation and Description* 19, pp. 87–98.

García Salido, Gabriela & Antonio Reyes Valdez. 2015. De maíz y de frijol: el paso de verbo final a verbo inicial en tepehuano del sureste (o'dam). *Tlalocan* XXI, pp. 85–134.

Gillon, Carrie. 2015. Investigating D in Languages With and Without Articles. In: *Methodologies in Semantic Fieldwork*. Ed. by M. R. Bochnak & L. Matthewson. Oxford: Oxford University Press, pp. 175–203.

Givón, Talmy. 2001. *Syntax: an introduction*. Vol. 1. John Benjamins Publishing.

Gluckman, John. 2021. Null Expletives and Embedded Clauses in Logoori. *Syntax* 24.3, pp. 334–375.

Goldberg, Adele. 2005. Constructions, Lexical Semantics and the Correspondence Principle: Accounting for Generalizations and Subregularities in the Realization of Arguments. In: *The Syntax of Aspect*. Ed. by N. Erteschik-Shir & T. Rapoport. Oxford: Oxford University Press, pp. 212–236.

Gouskova, Maria. 2003. Deriving economy: syncope in Optimality Theory. PhD thesis. University of Massachusetts Amherst.

Gradie, Charlotte M. 2000. *The Tepehuan Revolt of 1616: Militarism, Evangelism, and Colonialism in Seventeenth-Century Nueva Vizcaya*. Salt Lake City: University of Utah Press.

Grewendorf, Günther. 2001. Multiple *wh*-fronting. *Linguistic inquiry* 32.1, pp. 87–122.

Grimm, Scott. 2011. Semantics of case. *Morphology* 21, pp. 515–544.

Grimm, Scott. 2018. Grammatical number and the scale of individuation. *Language* 94.3, pp. 527–574.

Grimm, Scott & Beth Levin. 2017. Artifact nouns: Reference and countability. In: *Proceedings of the 47th Annual Meeting of North East Linguistic Society (NELS 47)*. Ed. by A. Lamont & K. Tetzloff. Amherst, MA: GLSA, pp. 55–64.

Grimshaw, Jane. 1990. *Argument structure*. Cambridge, MA: MIT Press.

Group, TFS Working. 2012. Chameleon Story. In: *Totem Field Storyboards*. Retrieved from http://www.totemfieldstoryboards.org on July 30, 2019.

Guerrero, Lilián. 2004. Verbos de movimiento y posición en yaqui. In: *Estudios en lenguas amerindias: Homenaje a Ken L. Hale*. Ed. by Z. Estrada Fernández, A. Fernández Garay & A. Álvarez González. Hermosillo, Mexico: Universidad de Sonora, pp. 199–229.

Guerssel, Mohamed, Kenneth L. Hale, Mary Laughren, Beth Levin & Josie White Eagle. 1985. A cross-linguistic study of transitivity alternations. In: *Papers from the parasession on causatives and agentivity at the twenty-first regional meeting*. Ed. by W. H. Eilfort, P. D. Kroeber & K. L. Peterson. Chicago, IL: Chicago Linguistic Society, pp. 48–63.

Haegeman, Liliane. 1994. *Introduction to government and binding theory*. Wiley-Blackwell.

Haegeman, Liliane, Ángel L. Jiménez-Fernández & Andrew Radford. 2014. Deconstructing the Subject Condition in terms of cumulative constraint violation. *The Linguistic Review* 31.1, pp. 73–150.

Hale, Kenneth. 1959. A Papago Grammar. PhD thesis. Indiana University.

Hale, Kenneth. 1983. Warlpiri and the grammar of non-configurational languages. *Natural Language & Linguistic Theory* 1.1, pp. 5–47.

Hale, Kenneth. 1992. Basic word order in two "free word order" languages. In: *Pragmatics of word order flexibility*. Ed. by D. L. Payne. Vol. 22. Typological Studies in Language. Amsterdam Netherlands: John Benjamins, pp. 63–82.

Hale, Kenneth. 2003. On the significance of Eloise Jelinek's pronominal argument hypothesis. In: *Formal Approaches to Function in Grammar: In honor of Eloise Jelinek*. Ed. by A. Carnie, H. Harley & M. A. Willie. John Benjamins Publishing, pp. 11–44.

Hale, Kenneth & Samuel Jay Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In: *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*. Ed. by K. Hale & S. J. Keyser. Cambridge, Mass: Massachusetts Institute of Technology.

Hale, Kenneth & Samuel Jay Keyser. 1997. The limits of argument structure. In: *Theoretical Issues at the syntax-morphology interface*. Ed. by A. Mendikoetxea & M. Uribe-Etxebarria. Bilbao: Universidad de País Vasco, Euskal Herriko Universitatea, pp. 203–230.

Hale, Kenneth & Elisabeth Selkirk. 1987. Government and Tonal Phrasing in Papago. *Phonology Yearbook* 4, pp. 151–183.

Hansen, Magnus Pharao. 2010. Polysynthesis in Hueyapan Nahuatl: The Status of Noun Phrases, Basic Word Order, and Other Concerns. *Anthropological Linguistics* 52.3–4, pp. 274–299.

Harley, Heidi. 2003. Possession and the double object construction. In: *Linguistics variation Yearbook*. Ed. by P. Pica & J. Rooryck. Vol. 2. John Benjamins Publishing, pp. 31–70.

Harley, Heidi, Mercedes Tubino Blanco & Jason Haugen. 2017. Locality conditions on suppletive verbs in Hiaki. In: *The morphosyntax-phonology connection*. Ed. by V. Gribanova & S. S. Shih. Oxford University Press Oxford, pp. 91–112.

The Valency Patterns Leipzig online database. 2013. Ed. by I. Hartmann, M. Haspelmath & B. Taylor. https://valpal.info/database.

Haspelmath, Martin. 1993. More on the typology of inchoative/causative verb alternations. In: *Causatives and transitivity*. Ed. by B. Comrie & M. Polinsky. Vol. 23, pp. 87–121.

Haspelmath, Martin. 1994. Passive Participles across Languages. In: *Voice: Form and Function*. Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 151–178.

Haspelmath, Martin. 2014. Arguments and Adjuncts as Language Particular Syntactic Categories and as Comparative Concepts. *Linguistic Discovery* 12.2, pp. 3–11.

Haugen, Jason D. 2007. On the Development of Pronominal Clitics and Affixes in Uto-Aztecan. *Southwest Journal of Linguistics* 26.1.

Haugen, Jason D. 2008. Denominal verbs in Uto-Aztecan. *International Journal of American Linguistics* 74.4, pp. 439–470.

Haugen, Jason D. 2012. On the gradual development of polysynthesis in Nahuatl. In: *Grammatical Change: Origins, Nature, Outcomes*. Ed. by D. Jonas, J. Whitman & A. Garrett. Oxford University Press, pp. 315–331.

Haugen, Jason D. 2015. Configurationality in Classical Nahuatl. *University of British Columbia working papers in linguistics*.

Haugen, Jason D. 2017. Derived Verbs of Possession in Uto-Aztecan. *Anthropological Linguistics* 59.2, pp. 163–204.

Haugen, Jason D & Michael Everdell. 2015. 'To Kill' and 'To Die' (and Other Suppletive Verbs) in Uto-Aztecan. *Language Dynamics and Change* 5.2, pp. 227–281.

Hawkins, John. 1991. On (in)definite articles: Implicatures and (un)grammaticality prediction. *Journal of Linguistics* 27.2, pp. 405–442.

Heim, Irene. 1991. Artikel und Definitheit. In: *Semantics: An International Handbook of Contemporary Research*. Ed. by A. Von Stechow & D. Wunderlich. Berlin: De Gruyter, pp. 487–534.

Heim, Irene & Angelika Kratzer. 1998. *Semantics in generative grammar*. Blackwell Oxford.

Henderson, Robert. 2011. Pluractional Distributivity and Dependence. In: *Proceedings of SALT 21*. Ed. by N. Ashton, A. Chereches & D. Lutz, pp. 218–235.

Hill, Jane H. 2011. Subgrouping in Uto-Aztecan. *Language Dynamics and Change* 1, pp. 241–278.

Hill, Kenneth C. 2020. *Wick Miller's Uto-Aztecan Cognate Sets: Revised and expanded by Kenneth C. Hill*.

Hornstein, Norbert & Jairo Nunes. 2008. Adjunction, labeling, and bare phrase structure. *Biolinguistics* 2.1, pp. 057–086.

Horvath, Julia & Tal Siloni. 2011. Anticausatives: against reflexivization. *Lingua* 121.15, pp. 2176–2186.

Horvath, Julia & Tal Siloni. 2013. Anticausatives have no Cause(r): A rejoinder to Beavers and Koontz-Garboden (in this issue). *Lingua* 131, pp. 217–230.

Huddleston, Rodney. 2002. The clause: Complements. In: *The Cambridge grammar of the English language.* Ed. by R. Huddleston & G. K. Pullum. Cambridge: Cambridge University Press, pp. 213–321.

Hwang, Juhyeon. 2005. The High Goal Argument in Korean Ditransitive Constructions. In: *Proceedings from the Annual Meeting of the Chicago Linguistic Society*, pp. 165–178.

Ichihashi-Nakayama, Kumiko. 1996. The "applicative" in Hualapai: Its functions and meanings. *Cognitive Linguistics* 7.2, pp. 227–239.

INEGI. 2020. *Instituto Nacional de Estadística y Geografía.* http://www.inegi.org.mx/default.aspx.Mexico.

Inglese, Guglielmo. 2022. Towards a typology of middle voice systems. *Linguistic Typology* 26.3, pp. 489–531.

Jackendoff, Ray. 1990. *Semantic Structures.* Cambridge, MA: MIT Press.

Jelinek, Eloise. 1984. Empty categories, case, and configurationality. *Natural Language & Linguistic Theory* 2.1, pp. 39–76.

Jelinek, Eloise. 2006. The Pronominal Argument Parameter. In: *Arguments and agreement.* Ed. by P. Ackema, P. Brandt, M. Schoorlemmer & F. Weerman. Oxford University Press, pp. 261–288.

Jelinek, Eloise & Richard A Demers. 1994. Predicates and pronominal arguments in Straits Salish. *Language*, pp. 697–736.

Jerro, Kyle. 2016. The syntax and semantics of applicative morphology in Bantu. PhD thesis. The University of Texas at Austin.

Jerro, Kyle. 2017. The causative–instrumental syncretism. *Journal of Linguistics* 53.4, pp. 751–788.

Jerro, Kyle. 2019. Ingestive verbs, causatives, and object symmetry in Lubukusu. *Linguistic Inquiry* 50.1, pp. 219–232.

Jerro, Kyle. 2020. Locative orientation and locative arguments: A case study from Kinyarwanda. *Proceedings of the Linguistic Society of America* 5, pp. 118–132.

Jerro, Kyle. 2023. The semantics of applicativization in Kinyarwanda. *Natural Language & Linguistic Theory.*

Johns, Alana. 2017. Noun Incorporation. In: *The Wiley Blackwell Companion to Syntax, Second Edition.* Ed. by M. Everaert & H. van Riemsdijk.

Jung, Yeun-Jin & Shigeru Miyagawa. 2004. Decomposing Ditransitive Verbs. In: *Proceedings of the Seoul International Conference on Generative Grammar*. Seoul: Hankook Munhwasa, pp. 101–120.

Kager, René. 1997. Rhythmic vowel deletion in Optimality Theory. In: *Derivations and Constraints in Phonology*. Ed. by I. Roca. Oxford: Oxford University Press, pp. 463–499.

Katzir, Roni. 2007. Structurally-defined alternatives. *Linguistics and Philosophy* 30.6, pp. 669–690.

Katzir, Roni. 2013. A note on Contrast. *Natural Language Semantics* 21, pp. 333–343.

Katzir, Roni. 2014. On the Roles of Markedness and Contradiction in the Use of Alternatives. In: *Pragmatics, Semantics and the Case of Scalar Implicatures*. Ed. by S. Reda. Palgrave Studies in Pragmatics, Language and Cognition. London: Palgrave Macmillan, pp. 40–71.

Kazenin, Konstantin. 1998. On patient demotion in *Lak*. In: *Typology of Verbal Categories: Papers Presented to Vladimir Nedjalkov on the Occasion of his 70th Birthday*. Ed. by L. Kulikov & H. Vater. Tübingen: Niemeyer, pp. 95–116.

Kearns, Kate. 2011. *Semantics*. 2nd. New York: Palgrave Macmillan.

Kemmer, Suzanne. 1993. *The middle voice*. Vol. 23. John Benjamins Publishing.

Kibrik, Andrej A. 2012. What's in the head of head-marking languages? In: *Argument structure and Grammatical Relations: A crosslinguistic typology*. Ed. by P. Suihkonen, B. Comrie & V. Solovyev. Studies in Language Companion Series 126. John Benjamins Publishing Company, pp. 211–240.

Kim, Lan. 2015. Asymmetric ditransitive constructions: Evidence from Korean. *Lingua* 165, pp. 28–69.

Kimenyi, Alexandre. 1988. Passives in kinyarwanda. In: *Passive and voice*. Ed. by M. Shibatani. Amsterdam: John Benjamins, pp. 355–386.

Kittilä, Seppo. 2005. Recipient-prominence vs. beneficiary-prominence. *Linguistic Typology* 9.2, pp. 269–297.

Kittilä, Seppo. 2012. Transitivity Typology. In: *The Oxford Handbook of Linguistic Typology*. Ed. by J. J. Song. Oxford Academic.

Kittilä, Seppo & Fernando Zúñiga. 2010. Introduction: Benefaction and malefaction from a cross-linguistic perspective. In: *Benefactives and malefactives: Typological perspectives and case studies*. Ed. by F. Zúñiga & S. Kittilä. Vol. 92. John Benjamins Publishing, pp. 1–28.

Koenig, Jean-Pierre, Gail Mauner & Breton Bienvenue. 2003. Arguments for adjuncts. *Cognition* 89.2, pp. 67–103.

Koenig, Jean-Pierre & Karin Michelson. 2012. The (non-) universality of syntactic selection and functional application. In: *Empirical Issues in Syntax and Semantics 9*. Ed. by C. Piñón. Editions du CNRS, pp. 185–205.

Koenig, Jean-Pierre & Karin Michelson. 2015. Invariance in argument realization: The case of Iroquoian. *Language* 91.1, pp. 1–47.

Koenig, Jean-Pierre & Karin Michelson. 2021. Specialized-domain grammars and the architecture of grammars: Possession in Oneida. *Journal of Linguistics* 57.3, pp. 635–674.

König, Ekkehard. 2019. Definite articles and their uses: Diversity and patterns of variation. In: *Aspects of Linguistic Variation*. Ed. by D. van Olmen, T. Mortelmans & F. Brisard. Berlin/Boston: Mouton De Gruyter, pp. 165–184.

Koontz-Garboden, Andrew. 2009. Anticausativization. *Natural Language & Linguistic Theory* 27.1, p. 77.

Kramer, Ruth. 2014. Clitic doubling or object agreement: The view from Amharic. *Natural Language & Linguistic Theory* 32.2, pp. 593–634.

Kratzer, Angelika. 1996. Severing the External Argument from its Verb. In: *Phrase Structure and the Lexicon*. Ed. by J. Rooryck & L. Zaring. Vol. 33. Studies in Natural Language and Linguistic Theory. Springer Dordrecht, pp. 109–137.

Krejci, Bonnie. 2012. Causativization as antireflexivization: A study of middle and ingestive verbs. MA thesis. University of Texas at Austin.

Krifka, Manfred. 1992. Thematic relations as links between nominal reference and temporal constitution. In: *Lexical Matters*. Ed. by I. Sag & A. Szabolcsi. CSLI Lecture Notes 24. Stanford: CSLI Publications, pp. 29–53.

Langacker, Ronald W. 2008. *Cognitive Grammar: A basic introduction*. Oxford: Oxford University Press.

Langacker, Ronald W. 1977. *Studies in Uto-Aztecan Grammar. Vol. 1: An Overview of Uto-Aztecan Grammar*. Dallas: Summer Institute of Linguistics and the University of Texas at Arlington.

Lasnik, Howard. 2001. Subject, Objects, and the EPP. In: *Objects and other Subjects: Grammatical Functions, Functional Categories and Configurationality*. Ed. by W. D. Davies & S. Dubinsky. Dordrecht/Boston/Londen: Kluwer Academic Publishers, pp. 103–122.

Launey, Michel. 1994. *Une grammaire omniprédicative: Essai sur la morphosyntaxe du nahuatl classique*. CNRS Editions: Paris.

Launey, Michel. 2002. On some causative doublets in Classical Nahuatl. In: *The grammar of causation and interpersonal manipulation*. Ed. by M. Shibatani. Vol. 48. Typological studies in language. Amsterdam, Philadelphia, PA: John Benjamins Publishing, pp. 301–318.

Launey, Michel. 2004. The features of omnipredicativity in Classical Nahuatl. *STUF-Language Typology and Universals* 57.1, pp. 49–69.

Lebeaux, David. 1988. Language acquisition and the form of the grammar. PhD thesis. University of Massachusetts Amherst.

Lebeaux, David. 1991. Relative clauses, licensing, and the nature of the derivation. In: *Perspectives on phrase structure: Heads and licensing*. Ed. by S. D. Rothstein. Academic Press, pp. 175–194.

Legate, Julie Anne. 2002. Warlpiri: theoretical implications. PhD thesis. Massachusetts Institute of Technology.

Leonetti, Manuel. 2016. Definiteness Effects: the interplay of information structure and pragmatics. In: *Definiteness Effects: Bilingual, Typological, and Diachronic Variation*. Ed. by S. Fischer, T. Kupisch & E. Rinke. Cambridge: Cambridge Scholars, pp. 66–119.

LeSourd, Philip S. 2006. Problems for the pronominal argument hypothesis in Maliseet-Passamaquoddy. *Language*, pp. 486–514.

Levin, Beth & Malka Rappaport Hovav. 2005. *Argument realization*. Cambrdge University Press.

Longobardi, Giuseppe. 1994. Proper names and the theory of n-movement in syntax and logical form. *Linguistic Inquiry* 25, pp. 609–655.

Longobardi, Giuseppe. 2001. The structure of DPs: Some principles, parameters, and problems. In: *The handbook of contemporary syntactic theory*. Ed. by M. Baltin & C. Collins. Oxford: Blackwell, pp. 562–603.

Longobardi, Giuseppe. 2008. Reference to individuals, person, and the variety of mapping parameters. In: *Essays on nominal determination: From morphology to discourse management*. Ed. by H. H. Müller & A. Klinge. Oxford: John Benjamins, pp. 188–209.

López, Luis. 2009. *A derivational syntax for information structure*. Oxford University Press.

Lounsbury, Floyd. 1953. *Oneida verb morphology*. Publications in anthropology 48. New Haven, CT: Yale University Press.

Lumholtz, Carl. 1902. *Unknown Mexico; A Record of Five Year's Exploration among the Tribes of the Western Sierra Madre; in the Tierra Caliente of Tepic and Jalisco; and among the Tarascos of Michoacan*. New York: Charles Scribner's Sons.

Lumholtz, Carl. 1894–1897. Explorations au Mexique. *Journal de la Societe des Americanistes de Paris*, pp. 179–184.

Lüpke, Friederike. 2007. 'Smash it again, Sam': Verbs of cutting and breaking in Jalonke. *Cognitive Linguistics* 18, pp. 251–262.

MacSwan, Jeff. 1998. The argument status of NPs in Southeast Puebla Nahuatl: comments on the polysynthesis parameter. *Southwest Journal of Linguistics* 17.2, pp. 101–114.

Marantz, Alec. 2013. Verbal argument structure: Events and participants. *Lingua* 130, pp. 152–168.

Masica, Colin P. 1976. *Defining a linguistic area: South Asia*. Chicago: University of Chicago Press.

Mason, J. Alden. 1917. Tepecano, A Piman language of Western Mexico. *Annals of the New York Academy of Sciences* XXV, pp. 309–416.

Mason, J. Alden. 1990 [1952]. Notas y observaciones sobre los tepehuanes. In: *Coras, huicholes y tepehuanes*. Ed. by T. B. Hinton. Mexico City: Instituto Nacional Indigenista-Consejo Nacional para la Cultura y las Artes, México, pp. 137–156.

Mateu, Jaume. 2017. Two types of locative alternation. In: *Verb Valency Changes: Theoretical and typological perspectives*. Ed. by A. Álvarez Gonzalez & I. Navarro. John Benjamins Publishing Company, pp. 52–77.

Matthewson, Lisa. 1998. Determiner Systems and Quantificational Strategies: Evidence from Salish. PhD thesis. The University of British Columbia.

Matthewson, Lisa. 1999. On the interpretation of wide-scope indefinites. *Natural language semantics* 7.1, pp. 79–134.

Matthewson, Lisa. 2008. Pronouns, presuppositions, and semantic variation. In: *SALT XVII*. Ed. by L. Matthewson, T. Friedman & S. Ito. Vol. 18, pp. 527–550.

Matthewson, Lisa. 2014. Miss Smith's Bad Day. In: *Totem Field Storyboards*. Retrieved from http://www.totemfieldstoryboards.org on July 30, 2019.

Matthewson, Lisa & Hamida Demirdache. 1995. Syntactic categories in St'át'imcets (Lillooet Salish). In: *University of British Columbia Working Papers in Linguistics: 30th International Conference on Salish and Neighbouring Languages*. Vol. 3, pp. 69–75.

McKenzie, Andrew. 2022. Mediating functions and the semantics of noun incorporation. *Natural Language & Linguistic Theory* 40, pp. 505–540.

Michelson, Karin. 1991. Semantic features of agent and patient core case marking in Oneida. *Buffalo papers in Linguistics* 91.2, p. 114.

Michelson, Karin & Mercy Doxtator. 2002. *Oneida-English/English-Oneida dictionary*. Toronto: University of Toronto Press.

Miller, Wick R. 1983. A note on extinct languages of northwest Mexico of supposed Uto-Aztecan affiliation. *International Journal of American Linguistics* 49.3, pp. 328–334.

Miller, Wick R. 1967. *Uto-Aztecan cognate sets*. UCPL 48. Berkeley and Los Angeles: University of California Press.

Mithun, Marianne. 1985. Disagreement: the case of pronominal affixes and nouns. In: *Georgetown University Round Table on Language and Linguistics*, pp. 50–66.

Mithun, Marianne. 1991. Active/agentive case marking and its motivations. *Language* 67, pp. 510–46.

Mithun, Marianne. 2001. Understanding and explaining applicatives. *Chicago Linguistic Society* 37.2, pp. 73–98.

Mithun, Marianne. 2003. Pronouns and agreement: The information status of pronominal affixes. *Transactions of the Philological Society* 101.2, pp. 235–278.

Miyagawa, Shigeru & Takae Tsujioka. 2004. Argument Structure and Ditransitive Verbs in Japanese. *Journal of East Asian Linguistics* 13.1, pp. 1–38.

Moura, Heronides & Rafaela Miliorini. 2018. Toward a comprehension of an intuition: criteria for distinguishing verbal arguments and adjuncts/Para compreender uma intuicao: criterios para distinguir argumentos de adjuntos verbais. *Alfa: Revista de Lingüística* 62.3, pp. 575–594.

Mourelatos, Alexander P. D. 1978. Events, processes and states. *Linguistics and Philosophy* 2.3, pp. 415–434.

Müller, Stefan. 2018. *A lexicalist account of argument structure: Template-based phrasal LFG approaches and a lexical HPSG alternative*. Language Science Press.

Müller, Stefan. 2023. *Grammatical theory: From transformational grammar to constraint-based approaches*. 5th ed. Language Science Press.

Munro, Pamela. 1984. Floating quantifiers in Pima. In: *The syntax of Native American languages*. Ed. by E.-D. Cook & D. B. Gerdts. Brill, pp. 269–287.

Næss, Åshild. 2004. What markedness marks: The markedness problem with direct objects. *Lingua* 114.9-10, pp. 1186–1212.

Næss, Åshild. 2007. *Prototypical transitivity*. Amsterdam: John Benjamins.

Næss, Åshild. 2009. How transitive are EAT and DRINK verbs. In: *The linguistics of eating and drinking*. Ed. by J. Newman. Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 27–43.

Nam, Seungho. 2012. Syntax-semantics mapping of locative arguments. In: *Proceedings of the 26th Pacific Asia Conference on Language, Information, and Computation*. Ed. by R. Manurung & F. Bond. Faculty of Computer Science, Universitas Indonesia, pp. 473–480.

Nash, Léa. 2018. Non-unitary structure of unergative verbs: From monovalent statives to bivalent reflexive causatives in Georgian. Ms. Université Paris 8 & CNRS.

Nash, Léa. 2020. Causees are not Agents. In: *Perspectives on Causation Selected Papers from the Jerusalem 2017 Workshop*. Ed. by E. A. Bar-Asher Siegal & N. Boneh. Jerusalem Studies in Philosophy and History of Science. Cham, Switzerland: Springer, pp. 349–394.

Nevins, Andrew. 2011. Prospects and challenges for a clitic analysis of (A) SL agreement. *Theoretical Linguistics* 37.3/4, pp. 173–187.

Ngoboka, Jean Paul. 2016. Locatives in Kinyarwanda. PhD thesis. University of KwaZulu-Natal, Durban.

Nichols, Johanna. 1986. Head-marking and dependent-marking grammar. *Language*, pp. 56–119.

Nichols, Johanna. 2017. Polysynthesis and head marking. In: *The Oxford Handbook of Polysynthesis*. Ed. by M. Fortescue, M. Mithun & N. Evans. Oxford: Oxford University Press.

Nie, Yining. 2019. Raising applicatives and possessors in Tagalog. *Glossa: a journal of general linguistics* 4.1, p. 139.

Nikitina, Tatiana. 2008. The Mixing of Syntactic Properties and Language Change. PhD thesis. Standford University.

Nikolaeva, Irina. 1999. Object agreement, grammatical relations, and information structure. *Studies in Linguistics* 23, pp. 331–376.

O'Meara, Caroline & Lilián Guerrero. 2015. A typological comparison of Seri with nearby Southern Uto-Aztecan languages: The use of posture verbs in locative descriptions. *Amerindia* 37.2, pp. 285–311.

Payne, Doris L. 1987. Information structuring in Papago narrative discourse. *Language* 63.4, pp. 783–804.

Payne, Doris L. 1992. *Pragmatics of word order flexibility*. Vol. 22. John Benjamins Publishing.

Perlmutter, David M. & Paul M. Postal. 1983. Toward a universal characterization of passivization. In: *Studies in Relational Grammar 1*. Ed. by D. M. Perlmutter. Chicago University Press, pp. 3–29.

Peterson, David A. 2007. *Applicative constructions*. Oxford University Press.

Poesio, Massimo. 1994. Weak Definites. In: *SALT IV*. Ed. by M. Harvey & L. Santelmann. Ithaca, NY: Cornell University, pp. 282–299.

Pollard, Carl & Ivan A Sag. 1994. *Head-driven phrase structure grammar*. Chicago: University of Chicago Press.

Preminger, Omer. 2009. Breaking agreements: Distinguishing agreement and clitic doubling by their failures. *Linguistic Inquiry* 40, pp. 619–666.

Quine, Willard van Orman. 1960. *Word and object*. Cambridge, MA: MIT Press.

Ramchand, Gillian & Peter Svenonius. 2014. Deriving the functional hierarchy. *Language sciences* 46, pp. 152–174.

Rappaport Hovav, Malka & Beth Levin. 2008. The English Dative Alternation: A Case for Verb Sensitivity. *Journal of Linguistics* 44, pp. 129–167.

Reinhart, Tanya. 2006. *Interface strategies*. Cambridge, MA: MIT Press.

Reinhart, Tanya & Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24, pp. 657–720.

Reyes Valdez, Antonio. 2006. *Los que Están Benditos: el Mitote Comunal de los Tepehuanes de Santa María de Ocotán*. Mexico: Instituto Nacional de Antropología e Historia.

Reyes Valdez, Antonio. 2007. *Formas de Gobierno y autoridades Indígenas: El Caso de los Tepehuanos del Sur de Durango*. Mexico City: Comisión Nacional para el Desarrollo de los pueblos indígenas.

Reyes Valdez, Antonio. 2015. The Perpetual Return of the Ancestors. An Ethnographic Account of the Southern Tepehuan and their Deities. PhD thesis. University of St. Andrews.

Reyes Valdez, Antonio, Gabriela García Salido & Elizabeth Soto Gurrola. 2022. *Historias de creación y destrucción: cosmología O'dam a través del sapook, un género discursivo*. Mexico: Facultad de Ciencias Políticas y Sociales. Universidad Nacional Autónoma de México, DGAPA.

Richards, Norvin. 1997. What moves where when in which languages? PhD thesis. Massachusetts Institute of Technology.

Richards, Norvin. 2001. *Movement in language: Interactions and architectures*. Oxford linguistics.

Rinaldini, Benito. 1743. *Arte de la lengua Tepeguana: con vocabulario, confessionario y catechismo: en que se explican los mysterios de nuestra santa fè catholica, mandamientos de la ley de Dios, y nuestra santa madre iglesia*. Mexico City: Viuda de D. Joseph Bernardo de Hogal.

Rissman, Lilia. 2013. Event participant representations and the instrumental role: A cross-linguistic study. PhD thesis. Johns Hopkins University, Baltimore.

Rissman, Lilia, Kyle Rawlins & Barbara Landau. 2015. Using instruments to understand argument structure for gradient representation. *Cognition* 142, pp. 266–290.

Rizzi, Luigi. 1986. Null objects in Italian and the theory of 'pro'. *Linguistic inquiry* 17.3, pp. 501–558.

Rodrigues, Cilene. 2010. Possessor raising through thematic positions. In: *Movement theory of control*. Ed. by N. Hornstein & M. Polinsky. Amsterdam: John Benjamins, pp. 119–146.

Ross, John Robert. 1967. Constraints on variables in syntax. PhD thesis. MIT.

Royer, Justin. 2022. Decomposing definiteness: Evidence from Chuj. *Canadian Journal of Linguistics/Revue canadienne de linguistique* 67.3, pp. 383–418.

Rudin, Catherine. 1988. On multiple questions and multiple WH fronting. *Natural Language & Linguistic Theory* 6.4, pp. 445–501.

Ruys, E.G. 2010. Expletive selection and CP arguments in Dutch. *Journal of Comparative Germanic Linguistics* 13, pp. 141–178.

Safir, Kenneth. 2004a. *The syntax of (in)dependence*. Cambridge: MIT Press.

Safir, Kenneth. 2004b. *The syntax of anaphora*. Oxford University Press.

Sandoval, Merton & Eloise Jelinek. 1989. The *bi*-Construction and Pronominal Arguments in Apachean. In: *Athapaskan Linguistics: Current Perspectives on a Language Family*. Ed. by E.-D. Cook & K. D. Rice. Vol. 15. Walter de Gruyter, pp. 335–378.

Saunders, Ross & Philip W Davis. 1982. The control system of Bella Coola. *International Journal of American Linguistics* 48.1, pp. 1–15.

Saxton, Dean. 1982. Papago. In: *Studies in Uto-Aztecan Grammar Volume 3: Uto-Aztecan grammatical sketches*. Ed. by R. W. Langacker. Dallas, TX: Summer Institute of Linguistics and The University of Texas at Arlington, pp. 93–267.

Schlenker, Phillippe. 2012. Maximize Presupposition and Gricean reasoning. *Natural Language and Linguistic Theory* 20, pp. 391–429.

Shaul, David Leedom. 1982. A grammar of Nevome. PhD thesis. The University of California, Berkeley.

Shaul, David Leedom. 2000. Comparative Tepiman: Phonological change and inflectional categories. In: *Uto-Aztecan structural, temporal, and geographic perspectives: papers in Memory of Wick R. Miller by the friends of Uto-Aztecan*. Ed. by E. H. Casad & T. L. Willett. Hermosillo, Sonora: Universidad de Sonora, pp. 319–356.

Shibatani, Masayoshi. 2002. Introduction: Some basic issues in the grammar of causation. In: *The Grammar of Causation and Interpersonal Manipulation*. Ed. by M. Shibatani. Amsterdam: John Benjamins, pp. 1–22.

Shibatani, Masayoshi & Prashant Pardeshi. 2002. The causative continuum. In: *The grammar of causation and interpersonal manipulation*. Ed. by M. Shibatani. Vol. 48. Typological studies in language. Amsterdam, Philadelphia, PA: John Benjamins Publishing, pp. 85–126.

Sigurðsson, Halldór Ármann. 2011. Conditions on argument drop. *Linguistic inquiry* 42.2, pp. 267–304.

Šimík, Radek & Christoph Demian. 2020. Definiteness, Uniqueness, and Maximality in Languages With and Without Articles. *Journal of Semantics* 37, pp. 311–366.

Simpson, Jane. 1991. *Warlpiri morpho-syntax: A lexicalist approach*. Dordrecht: Kluwer Academic Publishers.

Simpson, Jane Helen. 1983. Aspects of Warlpiri morphology and syntax. PhD thesis. Massachusetts Institute of Technology.

Smith, Marcus. 2012. Pima quantifiers. In: *Handbook of Quantifiers in Natural Language*. Ed. by E. Keenan & D. Paperno. Springer, pp. 699–727.

Speas, Margaret. 1990. *Phrase Structure in Natural Language*. Springer.

Stepanov, Arthur Vladimirovich. 2001. Cyclic domains in syntactic theory. PhD thesis. University of Connecticut.

Stowell, Timothy. 1989. Subjects, specifiers and X-bar theory. In: *Alternative conceptions of phrase structure*. Ed. by M. Baltin & A. Kroch. Chicago and London: University of Chicago Press, pp. 232–262.

Stubbs, Brian D. 2011. *Uto-Aztecan: A Comparative Vocabulary*. Flower Mound, TX: Shumway Family History Services; Blanding, UT: Rocky Mountain Books and Productions.

Suárez, Jorge A. 1977. La influencia del español en la estructura gramatical del Náhuatl. *Anuario de Letras* 15, pp. 115–164.

Suñer, Margarita. 1988. The role of agreement in clitic-doubled constructions. *Natural Language & Linguistic Theory* 6.3, pp. 391–434.

Sutton, Peter R & Hana Filip. 2021. The Count/Mass distinction for Granular Nouns. In: *Countability in Natural Language*. Ed. by H. Filip. Cambridge University Press, pp. 252–291.

Tallman, Adam J.R., Dennis Wylie, Eric Adell, Natalia Bermudez, Gladys Camacho, Patience Epps, Michael Everdell, Ambrocio Gutierrez, Cristian Juarez & Anthony C.

Woodbury. 2018. Constituency and the morphology-syntax divide in the languages of the Americas: towards a distributional typology. In: *21st Annual Workshop on American Indigenous Languages*. University of California Santa Barbara.

Tenny, Carol L. 1994. *Aspectual roles and the syntax-semantics interface*. Vol. 52. Springer.

Tesnière, Lucien. 1959. *Eléments de syntaxe structurale*. Paris: Klincksieck.

Thornton, Abigail. 2015. If Verbal Number is Lo-Low... *Florida Linguistics Papers* 2.1.

Toivonen, Ida. 2003. *Non-projecting words: A case study of Swedish particles*. Dordrecht: Kluwer.

Toivonen, Ida. 2007. Inari Saami verbal agreement. In: *Saami Linguistics*. Ed. by I. Toivonen & D. Nelson. John Benjamins, pp. 227–258.

Toivonen, Ida. 2021. Arguments and adjuncts across levels. In: *Proceedings of the LFG'21 Conference On-Line*. Ed. by M. Butt, J. Y. Findlay & I. Toivonen. Stanford, CA: CSLI Publications, pp. 306–331.

Tollan, Rebecca & Will Oxford. 2018. Voice-less Unergatives: Evidence from Algonquian. In: *Proceedings of the 35th West Coast Conference on Formal Linguistics*. Ed. by W. G. Bennett, L. Hracs & D. R. Storoshenko. Somerville, MA: Cascadilla Proceedings Project, pp. 399–408.

Toribio, Almeida Jacqueline. 1992. Proper Government in Spanish subject relativization. *Probus* 4.3, pp. 291–304.

Torres, Nadiezdha. 2018. Aquí hablamos tepehuano y allá español. Un estudio de la situación de bilingüismo incipiente entre español y tepehuano del sureste (o'dam) en Santa María de Ocotán y Durango. PhD thesis. Colegio de México.

Tutunjian, Damon & Julie E Boland. 2008. Do we need a distinction between arguments and adjuncts? Evidence from psycholinguistic studies of comprehension. *Language and Linguistic Compass* 2, pp. 631–646.

Ura, Hiroyuki. 2000. *Checking Theory and Grammatical Functions in Universal Grammar*. New York/Oxford: Oxford University Press.

van den Berg, Martin. 1996. Some aspects of the internal structure of discourse: ILLC. PhD thesis. University of Amsterdam.

van Valin, Robert D & Randy J LaPolla. 1997. *Syntax: Structure, meaning, and function*. Cambridge University Press.

van Valin Jr, Robert D. 1985. Case marking and the structure of the Lakhota clause. In: *Grammar inside and outside the clause*. Ed. by J. Nichols & A. Woodbury. Cambridge University Press Cambridge, pp. 363–413.

van Valin Jr, Robert D. 1987. The role of government in the grammar of head-marking languages. *International Journal of American Linguistics* 53.4, pp. 371–397.

van Valin Jr, Robert D. 2013. Head-marking languages and linguistic theory. *Language typology and historical contingency: In honor of Johanna Nichols* 104. Ed. by B. Bickel, L. A. Grenoble, D. A. Peterson & A. Timberlake, pp. 91–124.

Vásquez Soto, Verónica. 2002. Some Constraints on Cora causative constructions. In: *The grammar of causation and interpersonal manipulation*. Ed. by M. Shibatani. Vol. 48. Typological studies in language. Amsterdam, Philadelphia, PA: John Benjamins Publishing, pp. 197–244.

Vater, Heinz, ed. 1977. *Valence, semantic case and grammatical relations*. Amsterdam, John Benjamins.

Veselinova, Ljuba N. 2006. *Suppletion in verb paradigms*. Amsterdam: John Benjamins.

Viberg, Åke. 1983. The verbs of perception: A typological study. *Linguistics* 21.1, pp. 123–162.

von Fintel, Kai & Lisa Matthewson. 2008. Universals in semantics. *The linguistic review* 25.1-2, pp. 139–201.

Wechsler, Stephen. 2015. The syntactic role of agreement. In: *Syntax–Theory and analysis. An international handbook*. Ed. by T. Kiss & A. Alexiadou. 2nd ed. Mouton De Gruyter.

Wechsler, Stephen. 2020. The Role of the Lexicon in the Syntax–Semantics Interface. *Annual Review of Linguistics* 6.1, pp. 67–87.

Wechsler, Stephen & Larisa Zlatić. 2003. *The many faces of agreement*. Stanford, CA: CSLI Publications.

Wichmann, Søren. 2008. Case Relations in Tlaanec, a Head-Marking Language. In: *The Oxford Handbook of Case*. Ed. by A. L. Malchukov & A. Spencer. Oxford University Press, pp. 797–807.

Willett, Elizabeth. 1981. Word Shortening in Southeastern Tepehuan. MA thesis. University of North Dakota.

Willett, Elizabeth. 1982. Reduplication and accent in Southeastern Tepehuan. *International Journal of American Linguistics* 48.2, pp. 168–184.

Willett, Elizabeth R. 1985. Palatalization in Southeastern Tepehuan. *International journal of American linguistics* 51.4, pp. 618–620.

Willett, Elizabeth R. & Thomas L. Willett. 2015. *Diccionario Tepehuano de Santa María Ocotán, Durango*. Vocabulario Indígenas 48. Summer Institute of Linguistics: Mexico.

Willett, Thomas L. 1988. A Cross-Linguistic Survey of the Grammaticization of Evidentiality. *Studies in Language* 12.1, pp. 51–97.

Willett, Thomas Leslie. 1991. *A reference grammar of Southeastern Tepehuan.* Summer Institute of Linguistics: Dallas, TX.

Williams, Alexander. 2015. *Arguments in syntax and semantics.* Cambridge University Press.

Witzlack-Makarevich, Alena & Balthasar Bickel, eds. 2019. *Argument Selectors: A new perspective on grammatical relations.* Amsterdam/Philadelphia: John Benjamins Publishing Company.

Wood, Jim. 2014. Reflexive-st verbs in Icelandic. *Natural Language & Linguistic Theory* 32.4, pp. 1387–1425.

Yap, Foong Ha. 1998. *Causative and Benefactive 'give' constructions in Malay, Thai and Chinese.* unpublished manuscript. UCLA.

Yifrach, Miriam & Elizabeth Coppock. 2021. Defining Definiteness in Turoyo. *Glossa: a journal of general linguistics* 6.1, p. 116.

Zaenen, Annie, Joan Maling & Höskuldur þráinsson. 1985. Case and grammatical functions: the Icelandic passive. *Natural Language & Linguistic Theory* 3, pp. 441–483.

Al-Zahre, Nisrine & Nora Boneh. 2010. Coreferential dative constructions in Syrian Arabic and Modern Hebrew. *Brill's Annual of Afroasiatic Languages and Linguistics* 2, pp. 248–282.

Zeller, Jochen & Jean Paul Ngoboka. 2018. Agreement with locatives in Kinyarwanda: a comparative analysis. *Journal of African Languages and Linguistics* 39.1, pp. 65–106.

Zepeda, Ofelia. 2016. *A Tohono O'odham grammar.* University of Arizona Press.

Zubin, David & Naicong Li. 1986. Anaphor resolution in Mandarin. In: *Proceedings of the Eastern States Conference on Linguistics.* Columbus: The Ohio State University.

Zúñiga, Fernando & Seppo Kittilä, eds. 2010. *Benefactives and malefactives: Typological perspectives and case studies.* Vol. 92. John Benjamins Publishing.

Zyman, Erik. 2021. Phase-constrained obligatory late adjunction. *Syntax* 25, pp. 84–121.