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THE DISTRIBUTION OF IMPLICIT ARGUMENTS IN PARAGUAYAN GUARANÍ

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ABSTRACT

In Paraguayan Guaraní, arguments of clausal predicates may be realized by cross-reference markers, independent pronouns, other types of noun phrases, and combinations thereof. Arguments of clausal predicates may also be implicit, i.e., not realized by any overt material. This paper describes the distribution of implicit arguments in the language. Three factors that contribute to this distribution are identified. The first one is morpho-syntactic: an argument may not be implicit if the cross-referencing system of the language requires it to be realized with a cross-reference marker. A second factor is animacy: some arguments denoting humans may sometimes not be implicit. A third factor is information-structural: an information-structurally prominent argument may not be implicit. The paper concludes by comparing the distribution of implicit arguments in Paraguayan Guaraní to that of other languages.

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1 INTRODUCTION

In Paraguayan Guaraní, cross-reference markers, independent pronouns and other noun phrases, as well as combinations thereof, may realize the arguments of the main predicate of a clause. In example (1a), the proto-patient argument of the transitive predicate stem *-hayhu* ‘love’ (realized as *-rayhu* for morphophonological reasons), which is the speaker, is realized by the first person singular set B cross-reference marker *che-* ‘B1sg’ on the stem.¹ The proto-agent argument, *Raul*, is not realized by a cross-reference marker but by a proper name. (Following Dowty 1991, I use the terms ‘proto-agent’ and ‘proto-patient’ to refer to the arguments of a transitive verb with the most agent- and patient-like properties, respectively.) In example (1b), the proto-agent argument, the speaker, is realized both by the first person singular proto-agent independent pronoun *che* ‘pron.AG.1sg’ and by the first person singular set A cross-reference marker *a-* ‘A1sg’.²

- (1) Context: Who loves you?
- a. Raul che-rayhu.
Raul B1sg-love
‘Raul loves me.’
- b. Che a-je-hayhu
pron.AG.1sg A1sg-JE-love
‘I love myself.’

In example (2), the proto-agent argument is realized both by the proper name *Toma* and by the third person cross-reference marker *o-* ‘A3’ on the predicate stem *-hayhu* ‘love’. The proto-patient argument *José* is realized only by the proper name (marked with the postposition *-pe*; here, to identify it as a proto-patient; cf. Velázquez-Castillo 2004, Shain & Tonhauser 2011).

¹ Paraguayan Guaraní examples are given in the standardized orthography of the language used in Paraguay (Ministerio de Educación y Cultura 2004, Velázquez-Castillo 2004:1421f.), except that all postpositions are suffixed to their host. Following this orthography, stressed oral syllables are marked with an acute accent and stressed nasal syllables are marked with a tilde; acute accents are not written for normally accented words, which have stress on the final syllable. I use glosses specified in the Leipzig Glossing Rules and the following additional glosses: A/B: set A/B cross-reference marker, CONTRAST: contrastive topic, DES: desiderative modal, DIM: diminutive, EMPH: emphatic, JE: reflexive/passive, NOM.PROSP: nominal prospective aspect/modal, NOM.TERM: nominal terminative aspect, past: past-denoting adverb, PE: non-proto-agent, temporal or locative noun phrase marker, pron.AG/NONAG: proto-agent/non-proto-agent independent pronoun, RE: non-proto-agent noun phrase marker, REP: reportative evidential.

² Examples not marked with a source were judged by native speaker consultants. An example without a diacritic was judged to be acceptable in the context given by all of the consultants with which it was elicited (typically four). An example marked with a hash mark (#) was judged to be unacceptable by all of the consultants with which it was elicited (again, typically four), and is hypothesized to be syntactically well-formed but unacceptable for semantic/pragmatic reasons. All examples from *Mitãmi* ‘The Little Prince’ (Saint-Exupéry 2005) were checked with at least three consultants.

- (2) Toma o-hayhu José-pe.
 Toma A3-love José-PE
 ‘Tomas loves José.’ (adapted from Velázquez-Castillo 2002b:145)

Arguments may also be implicit, i.e., not realized by a cross-reference marker, an independent pronoun or some other noun phrase. In the second clause of example (3), for instance, the proto-patient argument of the predicate stem *-rayhu* ‘love’, the speaker, is realized by the first person singular set B cross-reference marker *che-* ‘B1sg’, but the proto-agent argument, which is understood to be the sister, is an implicit argument since it does not have an overt exponent in the clause. (Throughout the paper, the expression in the English translation that corresponds to the Paraguayan Guaraní implicit argument is given in brackets; e.g., [you] in (3), and the predicate that subcategorizes for the implicit argument is bold-faced.)

- (3) Context: Sandra talks to her sister.
 Nde che-’ermána. **Che-rayhu.**
 pron.AG.2sg B1sg-sister B1sg-love
 ‘You are my sister. [You] love me.’

The previous literature on Paraguayan Guaraní has noted that the language allows for certain arguments to be realized only with cross-reference markers or even to be (what I call) implicit. Velázquez-Castillo (1996:11) notes that “multi-propositional discourse in Guaraní is characterized by a scarcity of object and subject lexical NPs. In most cases, objects and subjects are coded by pronominal affixes”, i.e., by what is referred to as cross-reference markers here. In the second clause of example (4), for instance, the entities Jasy and Arai are referred to only by the third person cross-reference markers *oi-* ‘A3’ and *o-* ‘A3’ on the predicate stems *-ko* ‘be’ and *-guata* ‘walk’.

- (4) Peteñ ára=ndaje=ko Jasy ha Arai o-guejy yvy-’ári.
 one day=REP=EMPH Jasy and Arai A3-descend earth-on
 ‘One day, it is said, Jasy and Arai descended to earth.’
 Vy’á-pe oi-ko ka’aguý-re, o-guata.
 happy-PE A3-be forest-RE A3-walk
 ‘Happily, they were in the forest, walking.’
 (Acosta and Krivoshein de Canese 2003:63)

Gynan (2001:57) points out that “[a]s with many morphologically rich languages, the null subject parameter in Guaraní allows for pro-drop”, a claim that captures the observation that the proto-agent argument in example (3) is implicit. However, as this paper shows, implicit arguments have a much wider distribution than what is allowed for by the null subject parameter. At the same time, the distribution of implicit arguments in Paraguayan Guaraní is subject to language-particular restrictions. As a consequence, not all subjects can be implicit arguments in the language, contrary to what is suggested by the null subject parameter.

This paper describes the distribution of implicit arguments in Paraguayan Guaraní. The paper identifies three factors that contribute to their distribution. The first factor is morpho-syntactic: an argument may not be implicit if the cross-referencing system of the language requires it to be

realized with a cross-reference marker. Section 2 illustrates the conditions under which an argument is not cross-referenced on the predicate and may, therefore, be implicit unless precluded by other factors. To facilitate the illustration of the other two factors on the distribution of implicit arguments, section 3 shows that implicit arguments may receive anaphoric interpretations, loosely comparable to those of English pronouns like *he* or *they*, except that implicit arguments do not contribute number, person or animacy restrictions. Sections 4 and 5 then illustrate that the distribution of implicit arguments is subject to animacy and information-structural restrictions, respectively. The paper concludes in section 6 with a brief comparison of the distribution of implicit arguments in Paraguayan Guaraní to that of implicit arguments in other languages.

2 THE CROSS-REFERENCING SYSTEM OF PARAGUAYAN GUARANÍ

This section introduces the cross-referencing system of Paraguayan Guaraní, building on prior descriptions (e.g., Gregores and Suárez 1967, Velázquez-Castillo 2002b), and identifies the conditions under which an argument is not cross-referenced on the main predicate stem. I refer to arguments that are not cross-referenced on the predicate as ‘non-cross-referenced’ arguments. Non-cross-referenced arguments are implicit arguments if they are not realized by an independent pronoun or some other noun phrase.

2.1 CROSS-REFERENCE MARKERS

Paraguayan Guaraní has two sets of cross-reference markers, referred to (and glossed) here as ‘set A’ and ‘set B’. These prefixes encode person and number information, except for the third person prefixes, which only encode person information. First person plural markers additionally distinguish inclusive and exclusive reference. The language also has two portmanteau prefixes that occur on transitive and ditransitive stems and specify that the proto-agent argument is a first person (singular, or plural exclusive) and the proto-patient argument is a second person singular (*ro(i)-* ‘1:2sg’) or a second person plural (*po(i)-* ‘1:2pl’). Table 1 summarizes the cross-reference markers of the language:³

³ I assume here, following the literature on modern Paraguayan Guaraní, that the set A prefixes have two allomorphic variants: a variant with *i* (e.g. *ai-* ‘A1sg’) and a variant without (e.g. *a-* ‘A1sg’); see e.g. Gregores & Suárez 1969: sections 13,14 and Velázquez-Castillo 2002b, 2004. Analyses of Proto Tupí-Guaraní (Jensen 1987, 1990) and some modern Tupí-Guaraní languages (e.g. Tupinamba; Rodrigues 1996) take the *i*-variant to mark a third person proto-patient argument. Evidence that the *i*-variant does not cross-reference a third person proto-patient argument in modern Paraguayan Guaraní comes from examples like *Ai-su’u ndéve* (A1sg-bite pron.AG.2sg) ‘I bite you’, where the proto-patient argument is a second person. I thank Guillaume Thomas for calling my attention to this matter.

Table 1: Cross-reference markers in Paraguayan Guaraní

	set A	set B
1sg	<i>a(i)-</i>	<i>che-</i>
1pl.incl	<i>ja(i)-</i>	<i>ñande-</i>
1pl.excl	<i>ro(i)-</i>	<i>ore-</i>
2sg	<i>re(i)-</i>	<i>nde-</i>
2pl	<i>pe(i)-</i>	<i>pende-</i>
3	<i>o(i)-</i>	<i>i-/ij-/h-/hi-</i>
Portmanteau prefixes <i>ro(i)-</i> ‘1:2sg’ and <i>po(i)-</i> ‘1:2pl’		

The two sets of cross-reference markers distinguish two types of predicate stems: dynamic predicate stems, which may be syntactically intransitive, transitive or ditransitive, co-occur with both set A and set B markers, whereas stative predicate stems, which are syntactically intransitive, only co-occur with set B markers.⁴

2.2 CROSS-REFERENCE MARKING WITH INTRANSITIVE PREDICATE STEMS

The first person singular argument of the intransitive dynamic stem *-guata* ‘walk’ is realized with the first person singular set A marker *a-* ‘A1sg’, as illustrated in (5a), whereas the first person singular argument of the intransitive stative stem *-kaigue* ‘lazy’ is realized with the first person singular set B marker *che-* ‘B1sg’, as illustrated in (6a).⁵ For discussions of the semantic factors that determine whether an intransitive predicate stem cross-references its single argument with a set A or a set B cross-reference marker see Mithun 1991 and Velázquez-Castillo 2002b.⁶

- | | | | | | | |
|-----|----|--|----|---|----|---|
| (5) | a. | A-guata.
A1sg-walk
‘I walk.’ | b. | Re-guata.
A2sg-walk
‘You walk.’ | c. | O-guata.
A3-walk
‘S/he/It/They walk(s).’ |
| (6) | a. | Che-kaigue.
B1sg-lazy
‘I am lazy.’ | b. | Nde-kaigue.
B2sg-lazy
‘You are lazy.’ | c. | I-kaigue.
B3-lazy
‘S/he/It/They is/are lazy.’ |

Since the argument of an intransitive stem is always cross-referenced on the stem, the arguments of intransitive stems are never non-cross-referenced arguments and hence never implicit.

⁴ Velázquez-Castillo (2002b) refers to these two types of predicate stems as ‘active’ and ‘inactive’, respectively.

⁵ I assume that the cross-reference markers are prefixes, rather than proclitics, since they are specific in their selections of hosts (predicate stems) and exhibit morphophonological idiosyncracies (irregular paradigms); cf. Zwicky and Pullum 1983. However, nothing in this paper hinges on this analysis over one that treats the markers as proclitics.

⁶ Paraguayan Guaraní sentences that merely provide evidence for a particular morphological (in)compatibility were judged to be (un)acceptable in the absence of a context and are therefore presented without a context. Such sentences are translated with English present tense sentences throughout the paper, even though they are also compatible with other temporal references (see Tonhauser 2011).

2.3 CROSS-REFERENCE MARKING WITH TRANSITIVE PREDICATE STEMS

Like intransitive stems, transitive and ditransitive stems are also inflected with only one cross-reference marker. When a transitive stem is inflected with one of the two portmanteau prefixes, *ro(i)-* ‘1:2sg’ or *po(i)-* ‘1:2pl’, both arguments are realized by this cross-reference marker, as illustrated in the examples in (7). Thus, in such clauses, neither argument is non-cross-referenced:

- (7) a. Context: A woman is talking to her child
 Ro-hayhu.
 1:2sg-love
 ‘I love you.’
- b. Context: A woman is talking to her two children.
 Po-hayhu.
 1:2pl-love
 ‘I love you.’

When neither portmanteau prefix is appropriate, one of the two arguments of the transitive stem is cross-referenced on the stem: set A markers cross-reference the proto-agent argument and set B markers cross-reference the proto-patient argument.⁷ Whether the proto-agent or the proto-patient argument is cross-referenced is determined by the person hierarchy in (8): the argument that is higher on the hierarchy is cross-referenced (see Velázquez-Castillo 2002b:145).

- (8) **Person hierarchy:**
 1 > 2 > 3

In (9a), the proto-agent argument is cross-referenced on the transitive stem *-su’u* ‘bite’ with the set A marker *ai-* ‘A1sg’ since the proto-agent argument is the speaker (first person) and the proto-patient argument is a third person. In (9b), on the other hand, the proto-patient argument is cross-referenced on *-su’u* ‘bite’ with the set B marker *che-* ‘B1sg’ since the proto-patient argument is the speaker and the proto-agent argument is third person. In (9c), the proto-patient argument is again cross-referenced on *-su’u* ‘bite’ with the set B marker *che-* ‘B1sg’ since the proto-agent argument, the addressee, does not outrank the first person proto-patient argument.

- (9) a. Context: Who bit Susi?
 Che ai-su’u chupe.
 pron.AG.1sg A1sg-bite pron.NONAG.3
 ‘I bit her.’
- b. Context: Who did Susi bite?
 Che-**su’u** chéve.
 B1sg-bite pron.NONAG.1sg
 ‘[She] bit me.’

⁷ Velázquez-Castillo (2002b) characterizes the two thematic roles as the ‘actor’ and the ‘undergoer’ roles, respectively.

- c. Context: Who bit you?
 Nde che-su'u.
 pron.AG.2sg B1sg-bite
 'YOU bit me.'

The proto-agent argument in (9b) is an implicit argument since it is not realized by a cross-reference marker, an independent pronoun or another noun phrase in the clause headed by *che-su'u* (B1sg-bite). The proto-patient argument in (9a) and the proto-agent argument in (9c), on the other hand, are not implicit arguments since they are realized independent pronouns. (Non-prot-agent pronouns realize proto-patient as well as proto-recipient arguments, as shown below.)

When both arguments of a transitive predicate stem are third person, the third person set A marker is realized on the stem, as illustrated in example (10):

- (10) Context: The Little Prince has met the lamplighter and has pity with him.
 Oi-pytyvõ-se kuri iñ-angirũ-me.
 A3-help-DES past B3-friend-at
 'He wanted to help his friend.' (Saint-Exupéry 2005:chapter XIV)

This observation, together with the hypothesis that set A markers cross-reference proto-agent arguments of transitive stems, motivates that a second hierarchy is at play in determining which argument is cross-referenced on transitive stems in Paraguayan Guaraní when both the proto-agent and the proto-patient argument are third person (see Velázquez-Castillo 2002b:145), namely the thematic role hierarchy in (11):

- (11) **Thematic role hierarchy**
 (when both the proto-agent and the proto-patient are third person)
 proto-agent > proto-patient

In combination with the person hierarchy in (8), the thematic role hierarchy correctly predicts that the proto-agent is cross-referenced on the transitive stem *-pytyvõ* 'help' in (10) with the third person set A cross-reference marker *oi-* 'A3', rather than the third person proto-patient argument with a set B cross-reference marker.

To sum up the distribution of non-cross-referenced arguments so far: An argument of a transitive predicate stem is a non-cross-referenced argument if the argument is the proto-agent argument of the transitive predicate and the proto-patient argument is higher on the person hierarchy or if the argument is the proto-patient argument of the transitive predicate and the proto-agent argument is higher on the person hierarchy and neither portmanteau affix is realized on the predicate.

2.4 CROSS-REFERENCE MARKING WITH DITRANSITIVE PREDICATE STEMS

Semantically ditransitive stems, such as *-me'ẽ* 'give' or *-gueru* 'bring', are also inflected with only one cross-reference marker. As with transitive stems, a ditransitive stem prefixed with one of the two portmanteau prefixes *ro(i)-* '1:2sg' or *po(i)-* '1:2pl' conveys the person/number information of the proto-agent and the proto-patient arguments.

- (12) a. Context: A woman is talking to her child.
 Ro-me'ẽ Páblo-pe.
 1:2sg-give Pablo-PE
 'I gave you to Pablo.'
- b. Context: A woman is speaking to her husband, as he wakes up in the hospital after losing consciousness.
 Ro-gueru opital-pe.
 1:2sg-bring hospital-PE
 'I brought you to the hospital.'

Also as with transitive predicates, when neither portmanteau prefix is appropriate, the proto-agent is cross-referenced with a set A marker and the proto-patient is cross-referenced with a set B marker. Thus, in (13a) and (13b), the proto-agent and the proto-patient of the ditransitive stem *-me'ẽ* 'give' are cross-referenced on the predicate with a set A and a set B marker, respectively. The proto-recipient argument of ditransitive predicate stems is never cross-referenced on the predicate, as predicted by it not being ranked in the thematic role hierarchy in (11). Thus, the second person singular recipient in (13c) and the first person singular recipient in (13d) are not cross-referenced on the predicate but realized by an independent pronoun. Example (13e), where the intended recipient is cross-referenced on the predicate, is judged to be unacceptable.

- (13) a. A-me'ẽ che-memby che-sý-pe.
 A1sg-give B1sg-child B1sg-mother-PE
 'I gave my child to my mother.'
 (adapted from Velázquez-Castillo 2002a:510)
- b. Context: A young woman is talking to her mother.
 Nde che-me'ẽ Páblo-pe.
 pron.AG.2sg B1sg-give Pablo-PE
 'You give me to Pablo.'
- c. A-me'ẽ ndéve peteĩ libro.
 A1sg-give pron.NONAG.2sg one book
 'I give a book to you.'
- d. Raul o-me'ẽ chéve peteĩ libro.
 Raul A3-give pron.NONAG.1sg one book
 'Raul gives a book to me.'
- e. # Raul che-me'ẽ peteĩ libro.
 Raul B1sg-book one book
 (Intended: Raul gives a book to me.)

The examples in (14), with the ditransitive predicate stem *-gueru* 'bring', again illustrate that recipients are not cross-referenced on the predicate: in (14a), the first person singular recipient is realized with the independent pronoun *chéve* 'pron.NONAG.1sg' and, in (14b), the first person that is cross-referenced on the predicate stem is the proto-patient.

- (14) a. Lára o-gueru chéve peteĩ libro.
 Lara A3-bring pron.NONAG.1sg one book

- ‘Lara brings a book to me.’
 b. Lára che-gueru tupa’ó-pe.
 Lara B1sg-bring church-PE
 ‘Lara brings me to church.’

Addressees of ditransitive predicates like *-e’i* ‘say’ or goals of predicates like *-moĩ* ‘put’ are also not cross-referenced on the predicate. In (15), the first person singular addressee is realized by the independent non-*proto-agent* pronoun *chéve* ‘pron.NONAG.1sg’ and, in (16), this pronoun realizes the first person singular goal argument.

- (15) Context: The Little Prince is upset about what the pilot said about flowers.
 Peteĩ py’aro kirirĩ-re, he’i chéve
 one hate silent-RE A3.say pron.NONAG.1sg
 “Ndo-ro-gueroviá-i!”
 NEG-1:2sg-believe-NEG
 ‘After a hateful silence, he said to me: “I don’t believe you!”’
 (Saint-Exupéry 2005:chapter VII)

- (16) José o-moĩ chéve vakúna
 Jose A3-put pron.NONAG.1sg vaccine
 ‘Jose gives me a vaccine.’ (lit: puts a vaccine into me)

I follow Primus 1999 in assuming that recipients of predicates like *-me’ẽ* ‘give’ and *-gueru* ‘bring’, and addressees of predicates like *-e’i* ‘say’ and locative goals of predicates like *-moĩ* ‘put’ instantiate the thematic role ‘*proto-recipient*’. Thus, in sum, *proto-recipient* arguments are never cross-referenced on the predicate.

2.5 CROSS-REFERENCE MARKING WITH CAUSATIVIZED PREDICATE STEMS

Paraguayan Guaraní has two causativizing affixes: the prefix *mbo-* (with nasal allomorph *mo-*) occurs on intransitive predicates and the suffix *-uka* occurs on transitive predicates (Velázquez-Castillo 2002a). My description of the distribution of non-cross-referenced arguments with causativized predicates in this section draws heavily on Velázquez-Castillo’s (2002a) analysis of Paraguayan Guaraní causatives.

Intransitive predicate stems that are marked with the causative prefix *mbo-* are transitive. They cross-reference the causer with a set A marker and the causee (the argument of the underlying intransitive stem) with a set B marker. This is illustrated in (17b) and (17c), respectively, for the intransitive predicate stem *-jahu* ‘bathe’, exemplified in (17a).

- (17) a. A-jahu.
 A1sg-bathe
 ‘I bathe.’
 b. A-mbo-jahu che-membý-pe.
 A1sg-CAUS-bathe B1sg-child-PE
 ‘I bathe my child.’

- c. Che-mbo-jahu Láura.
 B1sg-CAUS-bathe Laura
 Laura bathes me.’

I assume that causers of *mbo*-marked predicates are proto-agent arguments and causees of *mbo*-marked predicates are proto-patient arguments. This assumption is licensed by Velázquez-Castillo’s (2002a) description of the semantic properties of the causer and causee of *mbo*-marked predicates. In particular, Velázquez-Castillo (2002a:518) finds that “[t]he causer is generally human and often agentive”, it is “conscious and acts deliberately”. Although causees of *mbo*-marked predicates are often human, “it is also common to find inanimate causees” (*ibid*:519), and “even in cases of active causees, there must be an asymmetric relation between causer and causee regarding control. While the causer is often, though not always in control, the causee frequently is not” (*ibid*:522).

The examples in (18) illustrate the *mbo*-derived predicate *mbo-u* (CAUS-come) ‘send’. In (18a), the proto-agent argument, *Sándro*, is cross-referenced with a set A marker and the proto-patient argument is realized with a noun phrase (*mensáje* ‘message’). In (18b), the proto-patient argument, the speaker, is cross-referenced on the predicate. The recipient argument is not cross-referenced on the predicate, even in (18a), where it outranks both the proto-agent and the proto-patient argument on the person hierarchy.

- (18) a. Sándro o-mbo-u chéve mensáje.
 Sandro A3-CAUS-come pron.NONAG.1sg message
 ‘Sandro sends a message to me.’
 b. Sándro che-mbo-u ne-rendá-pe.
 Sandro B2sg-CAUS-come B2sg-place-PE
 ‘Sandro sends me to you (lit: your place).’

Transitive stems that are marked with the causative suffix *-uka* are ditransitive, i.e., have three arguments: a causer (which Velázquez-Castillo 2002a:524 refers to as ‘Agent’), a causee (the proto-agent of the underlying transitive predicate stem), and an affectee (Velázquez-Castillo 2002a:524), which corresponds to the proto-patient of the underlying predicate stem. The causer is marked with a set A marker, as illustrated in the example in (19b),⁸ for the transitive predicate stem *-hayhu* ‘love’, exemplified in (19a). However, unlike intransitive stems that are marked with the causative *mbo-*, it is the affectee, not the causee, that is cross-referenced on the predicate stem with a set B marker, as illustrated in the examples in (19c) and (19d). In (19d), the predicate cross-references the second person singular causer even though the causee, as a first person, outranks it.⁹

⁸ The causative suffix *-uka* is realized as *-ka* with /u/-final predicate stems.

⁹ As pointed out in Velázquez-Castillo 2002a:525 and as illustrated in the examples in (19) and (20) arguments marked as non-proto-agents (i.e. noun phrases marked with *-pe* and non-proto-agent independent pronouns) can be interpreted as causees and as affectees.

- (19) a. A-hayhu Raúl-pe.
A1sg-love Raul-PE
'I love Raul.'
- b. Context: When Malena met Raul for the first time, she didn't like him. I continue to talk well of Raul, and after a while she comes to love him. I say:
A-hayhu-ka Maléna(-pe) Raúl-pe.
A1sg-love-CAUS Malena(-PE) Raul-PE
'I made Malena love Raul.'
- c. Context: When Raul first met me, he didn't like me. Susi kept talking well of me to him, and after a while he comes to love me. I say to Susi:
Nde che-rayhu-ka Raúl-pe.
pron.AG.2sg B1sg-love-CAUS Raul-PE
'You made Raul love me.'
- d. Context: When you first met Raul, you didn't like him. But I kept talking nicely of him, and after a while you came to love him. You say:
Nde re-hayhu-ka chéve Raúl-pe.
pron.AG.2sg A2sg-love-CAUS pron.NONAG.2sg Raul-PE
'You made me love Raul.'

The examples in (20) again illustrate that the causee is not cross-referenced on a transitive stem marked with *-uka*. The transitive predicate stem *-hecha* 'see', illustrated in (20a), cross-references the causer in (20b) with a set A cross-reference marker and the affectee in (20c) with a set B cross-reference marker. In both of the examples in (20d) and (20e), the causee, who is the speaker, is not cross-referenced on the predicate even though it outranks the causer and the affectee on the person hierarchy.

- (20) a. Raul o-hecha Láura-pe.
Raul A3-see Laura-PE
'Raul saw Laura.'
- b. Context: From where Raul was sitting, he couldn't see that Laura was at the door. I told Raul to turn around and look at the door, where he saw Laura. I say:
A-hecha-uka Raúl-pe Láura-pe.
A1sg-see-CAUS Raul-PE Laura-PE
'I made Raul see Laura.'
- c. Context: Raul and Laura were sitting in the room when I came to the door. Laura couldn't see me from where she was sitting and so Raul told her to turn around and look at the door, where she saw me. I say:
Raul che-recha-uka Láura-pe.
Raul B1sg-see-CAUS Laura-PE
'Raul made Laura see me.'

- d. Context: Raul and I were sitting in a the room when Laura came to the door. I couldn't see Laura from where I was sitting and so Raul told me to get up and look at the door, where I saw Laura. I say:
- | | | | |
|------|-------------|----------------|-----------|
| Raul | o-hecha-uka | chéve | Láura-pe. |
| Raul | A3-see-CAUS | pron.NONAG.2sg | Laura-PE |
- 'Raul made me see Laura.'
- e. Context: You couldn't see who was at the door, but I was able to see that it was Laura. I made you get up so that you could see that Laura was at the door. You say:
- | | | | |
|-------------|---------------|----------------|-----------|
| Nde | re-hecha-uka | chéve | Láura-pe. |
| pron.AG.2sg | A2sg-see-CAUS | pron.NONAG.2sg | Laura-PE |
- 'You made me see Laura.'

With transitive predicate stems marked with *-uka*, the two portmanteau markers cross-reference the causer and the affectee, to the exclusion of the causee, as illustrated in the examples in (21):

- (21) a. Context: When Raul met you, he didn't like you much, but I kept talking nicely of you and Raul came to love you. I say:
- | | |
|-----------------|----------|
| Ro-hayhu-ka | Raúl-pe. |
| 1:2sg-love-CAUS | Raul-PE |
- 'I made Raul love you.'
- b. Context: Laura couldn't see you and your family because of where you were sitting, so I asked Laura to come around the corner. When Laura saw you and your family, I say to you and your family:
- | | |
|----------------|-----------|
| Po-hecha-uka | Láura-pe. |
| 1:2pl-see-CAUS | Laura-PE |
- I made Laura see you (pl).'

A naturally occurring example that again illustrates that the causee is not cross-referenced is given in (22): the second person singular causee is realized with an independent pronoun, but the predicate is not marked with *ro-* '1:2sg' even though the causer is a first person.

- (22) Nda-i-katú-i a-hecha-uka ndéve moõ=pa
 NEG-B3-possible-NEG A1sg-see-CAUS pron.NONAG.2sg where=Q
 o-je-juhu che-mba'e che-tapỹi michĩ-ete-reí-gui.
 A3-JE-find B1sg-thing B1sg-home small-very-really-ABL
 'I cannot show you where my things are because my home is really small.'
 (Saint-Exupéry 2005: chapter XXVI)

I assume that causers of *-uka*-marked stems are proto-agent arguments: Velázquez-Castillo (2002a:527) finds that "[t]he causer of [*-uka*-marked, JT] predicates is always human and acts deliberately with the intention of bringing about the change of state expressed in the predicate". Regarding causees of *-uka*-marked predicates, Velázquez-Castillo (2002a:578) writes that they are "also always human and, in contrast to causees of [*mbo*-marked, JT] predicates, and always

active, conscious, and deliberate”. I therefore assume that the affectees of *-uka*-marked predicates, not the causees, are their proto-patient arguments. Thus, just like with non-derived ditransitive predicates, it is the proto-agent and the proto-patient arguments that are cross-referenced with *-uka*-marked predicates.

In sum, the conditions under which proto-agent and proto-patient arguments are (not) cross-referenced on the predicate identified in section 2.2 for transitive predicates also apply to causative-marked predicate stems. Like proto-recipient arguments of ditransitive predicates, causee arguments of *-uka*-marked predicates are never cross-referenced.

2.6 CROSS-REFERENCE MARKING WITH JE-MARKED STEMS

In Paraguayan Guaraní, the prefix *je-*, glossed ‘JE’, with nasal allomorph *ñe-*, contributes either a reflexive or a passive interpretation. Transitive predicate stems marked with *je-* are intransitive and therefore do not realize non-cross-referenced arguments. With a reflexive interpretation, as in (23a), the set A cross-reference marker in combination with *je-* cross-references both the proto-agent and the proto-patient argument of the underlying transitive predicate. With a passive interpretation, as in (23b) and (23c), the proto-patient argument of the underlying transitive predicate is cross-referenced with a set A marker.

- (23) a. Context: Who loves you?
 Che a-je-hayhu.
 pron.AG.1sg A1sg-JE-love
 ‘I love myself.’
- b. Juan o-ñe-mbo-guapy ha o-je-joko.
 Juan A3-JE-CAUS-sit and A3-JE-hold.in.place
 ‘Juan was made to sit down and was held in place.’
 (Velázquez-Castillo 2002a:515, glosses adapted)
- c. Context: I’m a thief and the police have caught me. My lawyer asks me how the police have treated me. I say:
 A-ñe-mbo-guapy.
 A1sg-JE-CAUS-sit
 ‘I was made to sit down.’

Ditransitive stems marked with *je-* are transitive. When a ditransitive predicate stem is marked with *je-* and receives a reflexive interpretation, the proto-agent and the proto-patient argument of the underlying predicate are co-referential, as illustrated in (24a) for *-me’ẽ* ‘give’ and in (24b) for *-moĩ* ‘put’.

- (24) a. Context: I am a party decorator. Pablo is a neighborhood kid who is poor and sick, and his neighbors want to throw him a birthday party. I offer up my services for free:
 A-ñe-me’ẽ Páblo-pe.
 A1sg-JE-give Pablo-PE
 ‘I give myself to Pablo.’

- b. Context: I teach math. I have many students but one who particularly needs my help. I say to this student:
 A-ñe-moĩ nde-yké-re.
 A1sg-JE-put B2sg-side-RE
 ‘I put myself at your side.’

In the examples in (25), the ditransitive predicate stems marked with *je-* receive passive interpretations. In both examples, the proto-patient arguments are cross-referenced on the predicate and the proto-agent arguments are not cross-referenced on the predicate.

- (25) a. Context: The people in my neighborhood know that I love honey. Sometimes I come home and somebody has dropped off honey for me. On one such occasion, I say:
 Eirete o-ñe-moĩ kosiná-me.
 honey A3-JE-put kitchen-PE
 ‘Honey was put in the kitchen.’
- b. Context: I didn’t want to go see my ex-husband in the hospital but my family dragged me out of the house and to his bedside. I say to him:
 A-je-gueru ne-rendá-pe.
 A1sg-JE-bring B2sg-place-PE
 ‘I was brought to your place.’

An *-uka*-marked transitive stem that is marked with *je-* is transitive and can, again, receive a reflexive or a passive interpretation (Velázquez-Castillo 2002a:524). With a reflexive interpretation, the causer/proto-agent argument is identified with the affected/proto-patient argument (which is also the proto-patient argument of the underlying transitive predicate stem). In (26a), the first person set A cross-reference marker on the transitive predicate stem *-hayhu* ‘love’ which is marked with *-uka* ‘CAUS’ identifies both the causer and the affectee as the speaker. The causee is realized with a noun phrase. In (26b), the causee is a first person and the proto-agent and proto-patient are a third person: again, the causee is not cross-referenced on the predicate.

- (26) a. Context: When Pablo first met me, he didn’t like me. But I continued to be very nice to him, and now he loves me. I say:
 A-je-hayhu-ka Páblo-pe.
 A1sg-JE-love-CAUS Pablo-PE
 ‘I made Pablo love me.’
- b. Context: When I entered the store, I couldn’t see anybody there. Pablo waved at me so that I would see him.
 Páblo o-je-hecha-uka chéve.
 Pablo A3-JE-see-CAUS pron.NONAG.1sg
 ‘Pablo made me see him.’

With a passive interpretation, as in (27), the causer/proto-agent argument is demoted and the affected/proto-patient argument is cross-referenced on the predicate. The causee, which is first person in (27), is not cross-referenced on the predicate.

- (27) Upéi re-ju nde re-je-hayhu-ka.
 then A2sg-come pron.AG.2sg A2sg-JE-love-CAUS
 ‘Then you came and made yourself loved (by me).’
 (adapted from Velázquez-Castillo 2002a:524)

In sum, when a transitive or ditransitive predicate is marked with *je-* and the clause receives a passive interpretation, the proto-agent argument of the underlying (di)transitive predicate is a non-cross-referenced argument (and so are proto-recipients and causees). When a ditransitive predicate is marked with *je-* and the clause receives a reflexive interpretation, the proto-recipient arguments of non-causative predicates and the causees of causative predicates are non-cross-referenced arguments.

2.7 SUMMARY: NON-CROSS-REFERENCED ARGUMENTS

This section identified the conditions under which an argument is not cross-referenced on the predicate. These conditions are summarized in (28):

(28) **Non-cross-referenced arguments**

- An argument A of a (di)transitive predicate stem P is a non-cross-referenced argument if
- a. A is the proto-agent argument of P and i) the proto-patient argument is higher on the person hierarchy than the proto-agent argument or ii) P is marked with *je-* ‘JE’ and receives a passive interpretation,
 - b. A is the proto-patient argument of P and i) the proto-agent argument is higher on the person hierarchy than the proto-patient argument, ii) the proto-agent argument is not demoted by a passive interpretation of *je-* ‘JE’, and iii) neither portmanteau affix is realized on P, or
 - c. A is a proto-recipient argument or causee argument of a ditransitive causative predicate stem.

Other arguments are cross-referenced on the predicate stem.

These generalizations about non-cross-referenced arguments already lead to some observations about implicit arguments in Paraguayan Guaraní. First, there is a categorical restriction against implicit arguments with intransitive predicate stems, since the single argument of such stems is invariably cross-referenced on the predicate. Second, there is a categorical restriction against first person proto-agent or proto-patient implicit arguments of (di)transitive predicate stems since such arguments are also invariably cross-referenced on the predicate stem. The distribution of implicit arguments in Paraguayan Guaraní is compared to that of other languages in section 5.

3 ANAPHORIC INTERPRETATIONS OF NON-CROSS-REFERENCED ARGUMENTS

As stated in the introduction, implicit arguments are taken in this paper to be arguments that do not have an overt exponent in the clause. The previous section has identified one of three factors

that contribute to the distribution of implicit arguments in Paraguayan Guaraní: an argument may be implicit only if it is not cross-referenced on the predicate. However, not every non-cross-referenced argument is an implicit argument. There are (at least) two factors, in addition to the cross-referencing system of the language, that contribute to the distribution of implicit arguments in Paraguayan Guaraní: animacy and information structure. In order to illustrate those factors in sections 4 and 5, respectively, this section introduces one of the ways in which implicit arguments are interpreted in the language. Specifically, this section shows that implicit arguments can receive anaphoric interpretations akin to those of English pronouns like *she* and *they* (Roberts 2003),¹⁰ except that such ‘implicit anaphoric arguments’ (as I will henceforth call them) have no phonological content and do not contribute number or animacy restrictions.

I assume that the antecedents of implicit anaphoric arguments are not entities in the real world but rather ‘discourse referents’ (Karttunen 1976), i.e., representations of entities under discussion that may or may not denote entities in the real world. The assumption that anaphoric expressions have discourse referents as antecedents has a long tradition in dynamic semantic models of interpretation (e.g., Kamp 1981, Heim 1982). In this tradition, indefinite noun phrases, such as *a donkey* in the first clause in (29), introduce discourse referents (for individuals), which may then serve as the antecedents of definite noun phrases, such as the pronoun *it* in the second clause.

(29) Yesterday I saw a donkey. It was brown.

In this discourse, the indefinite noun phrase *a donkey* introduces a discourse referent, e.g., *d*, whose interpretation is an entity that is a donkey that the speaker saw. The interpretation of the pronoun *it* is anaphoric to a maximally salient, familiar discourse referent whose interpretation is an inanimate entity: the discourse referent *d* can serve as the antecedent for the interpretation of the pronoun, which thereby is interpreted as a donkey that the speaker saw. If the interpretation of *it* had to be characterized in relation to actual entities in the world, rather than in relation to discourse referents, we would have to identify the specific donkey that *it* in the second clause of (29) refers to or give up on the idea that *it* is a referring expression.

The interpretation of an implicit anaphoric argument in Paraguayan Guaraní is a familiar and maximally salient discourse referent. Per Roberts 2003, a discourse referent is strongly familiar if it was introduced by an overt noun phrase. An example of a strongly familiar discourse referent is the discourse referent *d* that was introduced by the indefinite noun phrase *a donkey* in the first clause of example (30). A discourse referent is weakly familiar if its existence is merely entailed in the context of interpretation. For example, since interlocutors can be taken to assume that the sun exists, the existence of a discourse referent for the sun is entailed in the context of interpretation in (30a). The weakly familiar discourse referent for the sun serves as the antecedent of the definite noun phrase *the sun*. The existence of a discourse referent that denotes a goat is entailed in (30b) by the fact that a goat is visible to the relevant discourse participants.

¹⁰ A hint of this empirical generalization can be found in Gregores and Suárez (1967:155): “...a transitive verb inflected for subject and without a free object has an “implicit” third person object...Example: [a-heká-ta ndéve (A1sg-look.for-PROSP pron.NONAG.2sg), JT] ‘I will find *it* for you’” (transcription and glossing adapted).

This weakly familiar discourse referent serves as the antecedent for the interpretation of the pronoun *it*.

- (30) a. Context: Talking to a stranger at the bus stop.
The sun is particularly bright today.
 b. Context: A goat walks into the classroom. The teacher exclaims:
 Get **it** out of here!

The examples in (31) and (32) show that the antecedents of Paraguayan Guaraní implicit anaphoric arguments can be strongly and weakly familiar discourse referents, respectively. In (31a), for instance, the implicit anaphoric argument is interpreted as the discourse referent introduced by the indefinite noun phrase *peteĩ mbarakaja* ‘a cat’. In (32), the implicit anaphoric argument is anaphoric to the discourse referent for a dog that is entailed to exist by virtue of the fact that a dog walked up to the group containing the speaker, i.e., by virtue of the dog being visible to the discourse participants.¹¹

- (31) a. Che-vesína o-guereko peteĩ mbarakaja. Che-**su’u**.
 B1sg-neighbor A3-have one cat B1sg-bite
 ‘My neighbor has a cat. [It] bit me.’
 b. A-heka peteĩ mitã che-nupã-va’e-kue kuehe
 A1sg-search one child B1sg-hit-REL-NOM.TERM yesterday
 há=katu nd-a-**juhú**-i gueteri
 and=CONTRAST NEG-A1sg-find-NEG yet
 ‘I am looking for a boy that hit me yesterday but I haven’t found [him] yet.’
- (32) Context: We’re sitting on the sidewalk drinking *tereré*. A stray dog walks up to us and lies down in the shade at our feet. I say:
 Kuehe che-**su’u**.
 yesterday B1sg-bite
 ‘Yesterday, [it] bit me.’

The examples in (33) and (34) show that implicit anaphoric arguments are unacceptable in discourses in which there is no suitable familiar discourse referent. In (33a), for example, the proto-agent argument is an implicit anaphoric argument for which there is no (strongly or

¹¹ The paper focuses on individual-denoting arguments, but proposition-denoting arguments can also be implicit anaphoric arguments, as shown in (i).

- (i) A: Sabína o-hayhu Sándra-pe. B: A-**hendú**-ma.
 Sabina A3-love Sandra-at A1sg-hear-already
 ‘Sabina loves Sandra.’ ‘I already heard [that].’

weakly) familiar discourse referent that could serve as its antecedent. In the minimal variant in (33b), the indefinite noun phrase *peteĩ jagua* ‘a dog’ realizes the proto-agent argument.¹²

(33) Context: My friends visit me and see that I have a wound on my leg. I say:

- a. # Kuehe che-su’u.
 yesterday B1sg-bite
 (Yesterday, [it] bit me.)
- b. Kuehe peteĩ jagua che-su’u.
 yesterday one dog B1sg-bite
 ‘Yesterday, a dog bit me.’

(34) Context: Isabel is talking to Julio about what happened yesterday.

- a. # A-topa.
 A1sg-find
 (I found [it].)
- b. A-topa peteĩ ita i-porã-va.
 A1sg-find one stone B3-pretty-REL
 ‘I found a pretty stone.’

A discourse referent can also be entailed to exist, i.e., weakly familiar, by virtue of its relation to a familiar discourse referent. Clark (1975) refers to these as ‘bridging’ examples. In the English translation of (35a), for instance, the antecedent of a definite noun phrase *the radio* is a weakly familiar discourse referent whose existence is entailed by the car mentioned in the context. In the Paraguayan Guaraní example in (35a), the bare noun phrase *rádio* ‘radio’ is taken to be the radio of the car. Whereas the antecedent of a bare noun phrase can be a weakly familiar discourse referent introduced by bridging, the antecedent of an implicit anaphoric argument cannot be such a bridged, weakly familiar discourse referent, as illustrated in the example in (35b).

(35) Context: Yesterday a man was sitting in his car in front of my house.

- a. O-mbopu rádio ha o-ñepyrũ o-purahéi.
 A3-play radio and A3-begin A3-sing
 ‘He turned the radio on and began to sing.’
- b. # O-mbopu ha o-ñepyrũ o-purahéi.
 A3-play and A3-begin A3-sing
 (He turned [it] on and began to sing.)

This observation suggests that the antecedent discourse referent of an implicit anaphoric argument in Paraguayan Guaraní needs to be not only familiar, but also maximally salient, like that of English pronouns (Roberts 2003). On this proposal, (35b) is unacceptable since the weakly familiar discourse referent for the radio is not any more salient than, for instance, the weakly familiar discourse referent for the steering wheel or the glove box of the car.

¹² In this sense, the distribution of implicit anaphoric arguments is subject to additional restrictions, over and above the restrictions on the distribution of implicit arguments (which may also receive interpretations other than anaphoric ones; cf. Tonhauser ms.).

Further evidence that the antecedent discourse referent for an implicit anaphoric argument needs to be maximally salient is presented by the examples in (36) and (37). The second clause of (36) is interpreted in a context in which there is a strongly familiar discourse referent that is interpreted as a cake that the speaker's mother made (by virtue of the indefinite noun phrase *peteĩ torta* 'a cake' in the first clause). This discourse referent is maximally salient among discourse referents interpreted as edible entities. It is therefore a suitable antecedent for the implicit anaphoric argument in the second clause.

- (36) Kuehe che-sy o-japo peteĩ torta che-kumpleáño-rã.
 yesterday B1sg-mother A3-make one cake B1sg-birthday-NOM.PROSP
 Ange pyhare che-‘ermáno ho’u.
 today night B1sg-brother A3.eat
 ‘Yesterday my mother made a cake for my birthday. Last night, my brother ate [it].’

However, the second clause of (36) is unacceptable in the context in (37), in which two indefinite noun phrases, namely *peteĩ torta* ‘a cake’ and *peteĩ sópa* ‘a *sopa*’, introduce discourse referents for edible entities: neither one of these familiar discourse referents is more salient than the other, and their sum is also not more salient than either one, and thus none of these discourse referents can serve as an antecedent for the implicit anaphoric argument.

- (37) Kuehe che-sy o-japo peteĩ torta ha peteĩ sópa
 yesterday B1sg-mother A3-make one cake and one sopa
 che-kumpleáño-rã. # Ange pyhare che-‘ermáno ho’u.
 B1sg-birthday-NOM.PROSP today night B1sg-brother A3.eat
 ‘Yesterday my mother made a cake and a *sopa* for my birthday. #Last night my
 brother ate [them/it].’

Like English pronouns, an implicit anaphoric argument in Paraguayan Guaraní is anaphoric to an accessible antecedent discourse referent. Generally, discourse referents introduced in the scope of negation are not accessible to anaphoric expressions outside the scope of negation (Karttunen 1976, Kamp 1981, Heim 1982). Both occurrences of the indefinite noun phrase *peteĩ kóche* ‘a car’ in the first clauses of (38a) and (38b) introduce a novel discourse referent. This discourse referent may serve as the antecedent for the implicit anaphoric argument of *a-hecha-uka* (A1sg-see-CAUS) ‘I showed [it]’ in (38a) but not in (38b), where it is introduced in the scope of negation. As predicted, the second clause of (38b) is judged to be unacceptable.

- (38) a. A-guereko peteĩ kóche. A-hecha-uka ndéve
 A1sg-have one car A1sg-see-CAUS pron.NONAG.2sg
 kuehe.
 yesterday
 ‘I own a car. I showed [it] to you yesterday.’
 b. Nd-a-guerekó-i peteĩ kóche. # A-hecha-uka
 NEG-A1sg-have-NEG one car A1sg-see-CAUS
 ndéve kuehe.
 pron.NONAG.2sg yesterday
 ‘I don’t own a car. #I showed [it] to you yesterday.’

In addition to discourse anaphoric interpretations, where the antecedent discourse referent is provided by previous linguistic material, as in examples (36) and (38a), implicit anaphoric arguments may also receive deictic, bound and donkey anaphoric interpretations (cf., e.g., Partee 1989, Condoravdi and Gawron 1996). An example in which an implicit anaphoric argument receives a deictic interpretation is (32), repeated in (39) for convenience: the discourse referent that serves as the antecedent for the implicit anaphoric argument is provided by an entity in the context of utterance, namely the dog.

- (39) Context: We're sitting on the sidewalk drinking *terere*. A stray dog walks up to us and lies down in the shade at our feet. I say:
 Kuehe che-**su'u**.
 yesterday B1sg-bite
 'Yesterday, [it] bit me.'

Implicit anaphoric arguments may also receive bound interpretations, as illustrated by the example in (40), in which the proto-agent argument of the main predicate of the subordinate clause, *che-recha* (B1sg-see), is an implicit anaphoric argument. The discourse referent for a student in the restriction of the universally quantified noun phrase *enterovéa alumno-kuéra* 'every student' is the antecedent of the implicit anaphoric argument in the scope of the quantificational noun phrase.

- (40) Context: A house near the school was robbed and the police are suspecting somebody from the school. Since I'm a teacher at the school, I am also under suspicion. The police interview my students and find that I have an alibi.
 Enterovéa alumno-kuéra he'i che-**recha**-ha-gue eskuéla-pe.
 every student-PL A3.say B1sg-see-NMLZ-NOM.TERM school-PE
 'Every student said that [s/he] saw me at the school.'

Implicit anaphoric arguments can also receive donkey anaphoric interpretations, i.e., they are acceptable even when the noun phrase that introduces the antecedent discourse referent is realized in a syntactic position, e.g., in a relative clause, from which it cannot bind the implicit anaphoric argument. In (41a), for instance, the proto-patient argument of the predicate *oi-puru* (A3-use) is an implicit anaphoric argument. The antecedent discourse referent of this implicit anaphoric argument is introduced by the bare noun phrase *lápi* 'pencil' inside the relative clause that modifies the quantificational noun phrase *enterovéa alúmno* 'every student'.

- (41) a. Context: Somebody is visiting my classroom to see if my students have the necessary equipment to succeed. I tell them:
 Enterovéa alúmno o-guerekó-va lápi oi-**puru**.
 every student A3-have-REL pencil A3-use
 'Every student who owns a pencil uses [it].'
 b. Context: I tell my sister about the weird habits of the people in my neighborhood.
 Enterovéa vesíno o-guerekó-va peteĩ mbarakaja
 every neighbor A3-have-REL one cat

o-mbo-jahu.

A3-CAUS-bathe

‘Every neighbor that has a cat bathes [it].’

Finally, as expected, the anaphoric interpretation of implicit anaphoric arguments projects, i.e., survives as a commitment of the speaker even when the implicit anaphoric argument is realized in the scope of negation, a modal or in the antecedent of a conditional (Langendoen and Savin 1971, Chierchia and McConnell-Ginet 1990, Tonhauser et al 2013). The context in (42) is constructed such that a maximally salient, familiar discourse referent *d* for the dinner that Juan cooked for his son is introduced. The implicit anaphoric argument of *ho’u* (A3.eat) occurs in the scope of negation in (42b), in the scope of a modal in (42c), and in the antecedent of a conditional in (42d). The examples in (42a-d) are all judged to be acceptable when uttered in this context, i.e., the discourse referent *d* can serve as the antecedent for these implicit anaphoric arguments, even when they occur in the scope of entailment-canceling operators.

- (42) Context: Juan cooked dinner for his son, who is at work, and then left the house. When he returns home, he asks his wife whether their son ate the food he cooked for him. She says:
- a. **Ho’u.**
A3.eat
‘He ate [it].’
 - b. **Nd-o’ú-i.**
NEG-A3.eat-NEG
‘He didn’t eat [it].’
 - c. **I-katu ho’u.**
B3-possible A3.eat
‘It’s possible that he ate [it].’
 - d. **Ho’ú-ramo, o-ke ko’ãga.**
A3.eat-if A3-sleep now
‘If he ate [it], he is sleeping now.’

Crucially, the examples in (42a-d) are not judged to be acceptable in the context in (43), in which no maximally salient, familiar discourse referent that could serve as the antecedent for the implicit anaphoric arguments is introduced. The fact that the examples in (42b-d) are judged to be unacceptable in this context shows that the anaphoric interpretation of the implicit anaphoric arguments must be satisfied even when the implicit anaphoric argument occurs embedded under an entailment-canceling operator.

- (43) Context: Juan left the house a while ago. When he returns, he asks his wife whether their son has eaten. She says:

In sum, non-cross-referenced arguments may receive anaphoric interpretations. The interpretations of such implicit anaphoric arguments is loosely comparable to those of English pronouns in that implicit anaphoric arguments are anaphoric to a maximally salient, familiar discourse referent and may receive discourse-anaphoric, deictic, bound and donkey-anaphoric interpretations.

4 ANIMACY BUT NO NUMBER RESTRICTIONS

Section 2 showed that implicit arguments are subject to a person restriction: first person proto-agent and proto-patient arguments are always cross-referenced on the predicate and hence never implicit. This section shows, based on data with implicit anaphoric arguments, that implicit arguments are subject to an animacy restriction, but not to a number restriction.

Consider first number. Many of the examples in the previous sections already showed that implicit arguments in Paraguayan Guaraní may have discourse referents that denote singular entities as antecedents. The examples in (44) illustrate that implicit arguments may also have discourse referents that denote plural entities as antecedents.

- (44) a. A: Re-hechá=pa che-róga-kuéra?
 A2sg-see=Q B1sg-house-PL
 ‘Did you see my houses?’
 B: Heẽ, a-**hecha**.
 yes A1sg-see
 ‘Yes, I saw [them].’
- b. A-heka kuri mokoĩ entráda fiesta-pe-gua-rã
 A1sg-search past two entrance party-PE-for-NOM.PROSP
 a-jogua-va’e-kue kuehe ha a-**topa**.
 A1sg-buy-REL-NOM.TERM yesterday and A1sg-find
 ‘I was looking for the two tickets for the party that I bought yesterday
 and I found [them].’

Now consider animacy. The examples in (45), (46) and (47) illustrate that the antecedent discourse referents of implicit anaphoric arguments in Paraguayan Guaraní can denote human, non-human animate and inanimate entities, respectively. In (45a), for instance, the antecedent of the implicit anaphoric argument denotes the addressee (human); in (46b), it denotes a cat (non-human animate); and in (47a), it denotes a house (inanimate).

- (45) Human referents
- a. Context: Yesterday at church they gave out small candles to take home. I see that my friend also has such a candle, and say to her:
 Nd-ai-kuáa-i re-ho-ha-gue avei tupa’ó-pe
 NEG-A1sg-know-NEG A2sg-go-NMLZ-NOM.TERM too church-PE
 kuehe. Che-**recha** upépe?
 yesterday B1sg-see there
 ‘I didn’t know that you also went to church yesterday. Did [you] see me there?’
- b. Juã che-’ermáno. Che-**rayhu**.
 Juan B1sg-brother B1sg-love
 ‘Juan is my brother. [He] loves me.’

- (46) Animate non-human referents
- a. Che-jagua i-ñaro ha a-**vende**-se ko'ëro.
 B1sg-dog B3-wild and A1sg-sell-DES tomorrow
 'My dog is wild and I want to sell [it] tomorrow.'
- b. Che-vesína mbarakaja i-ñarõ-íterei. Kuehe **che-su'u**.
 B1sg-neighbor cat B3-wild-very yesterday B1sg-bite
 'My neighbor's cat is wild. Yesterday [it] bit me.'

- (47) Inanimate referents
- a. Ne-mandu'á=pa pe óga tujá-re? **Ja-hecha**
 B2sg-remember=Q that house old-RE A1pl.incl-see
 kuri kuehe.
 past yesterday
 'Do you remember that old house? We saw [it] yesterday.'
- b. Ai-kotevê kuri entráda fiésta-pe-gua-rã
 A1sg-need past entrance party-PE-for-NOM.PROSP
 a-jogua-va'e-kue kuehe ha a-**topa**.
 A1sg-buy-REL-NOM.TERM yesterday and A1sg-found
 'I needed that party ticket that I bought yesterday and I found [it].'

However, even though implicit arguments may in principle be (human and non-human) animate, there are examples where some speakers of Paraguayan Guaraní categorically reject implicit human proto-patient and proto-recipient arguments. For such speakers, human proto-patient and proto-recipient arguments must be realized with the independent pronouns (*i*)*chupe* (pron.NONAG.3) or (*i*)*chupe-kuéra* (pron.NONAG.3-PL). For instance, three of the four consultants that I elicited (48a) with rejected the variant without *chupe* (pron.NONAG.3). Example (48b), with a non-human proto-patient, was accepted by three of the four consultants without the independent pronoun (and all four accepted the version with the pronoun). Inanimate proto-patients are not realized with the independent pronoun, as illustrated in (48c).

- (48) Proto-patient
- a. Context: Did you see Juan?
 Heẽ, a-hecha *(chupe).
 yes A1sg-see pron.NONAG.3
 'Yes, I saw him.'
- b. Context: Did you see my cat?
 Heẽ, a-**hecha** (chupe).
 yes A1sg-see pron.NONAG.3
 'Yes, I saw [it].'
- c. Context: Did you see the house?
 Heẽ, a-**hecha** (*chupe).
 yes A1sg-see pron.NONAG.3
 'Yes, I saw [it].'

In this connection, it is important to note, however, that all of my consultants accepted the example in (31b) with an implicit human proto-patient argument. These observations suggest that there is no categorical restriction against implicit human proto-patient arguments. Rather, whether an human proto-patient argument may be implicit or not may be subject to additional, as yet unidentified, discourse conditions.¹³

Human proto-recipients, on the other hand, may not be implicit, at least according to the judgments of the four consultants that I elicited the examples in (49) with. All four rejected the version of (49a) without *chupe* (pron.NONAG.3) whereas the independent pronoun was optional with the non-human animate recipient in (49b) and unacceptable with the inanimate one in (49c).

- (49) Proto-recipient
- a. Context: What did you give Laura?
 A-me'ẽ *(chupe) nde-lápi.
 A1sg-give pron.NONAG.3 B2sg-pencil
 'I gave her your pencil.'
- b. Context: What did you give my cat?
 A-me'ẽ (chupe) so'o.
 A1sg-give pron.NONAG.3 meat
 'I gave [her] meat.'
- c. Context: What did you put into my room?
 A-moĩ nde-mbarakaja (upépe).
 A1sg-put B2sg-cat there
 'I put your cat [into it].'

Human proto-agent arguments, on the other hand, may be implicit, just like non-human animate and inanimate proto-agent arguments, as illustrated in the example in (50).

- (50) a. Context: Did Sandra see me yesterday?
 Heẽ, (ha'e) nde-recha.
 yes pron.AG.3 B2sg-see
 'Yes, [she] saw you yesterday.'
- b. Context: Did my cat bite you yesterday?
 Heẽ, (ha'e) che-su'u.
 yes pron.AG.3 B1sg-bite
 'Yes, [it] bit me yesterday.'
- c. Context: Did my car hit you yesterday?
 Heẽ, (*ha'e) che-shoka.
 yes pron.AG.3 B1sg-hit
 'Yes, [it] hit me yesterday.'

¹³ Some authors have suggested that (*i*)*chupe* 'pron.NONAG.3' is used only to refer to humans (e.g., Kallfell 2010:91). My consultants also accept the pronoun (but do not typically require it) for non-human animates.

With plural human and non-human animate proto-agents there again is variation. Consider the example in (51a). The four consultants I asked to judge the acceptability of this example all accepted the variant without the independent pronoun *hikuái* (pron.AG.3pl); in this variant, the proto-agent argument is an implicit anaphoric argument. Two of these four consultants, however, preferred the version with *hikuái* (pron.AG.3pl), i.e., the variant in which the proto-agent argument is not an implicit anaphoric argument. The judgments for the example in (51b) were similarly varied. These observations suggest that there may be a stronger preference to realize non-human animate plural arguments with an independent pronoun than non-human animate singular arguments.

- (51) a. Context: Yesterday, two boys hit me. I point them out to you.
 E-ma'ẽ-mi umi mitã-re. Kuehe che-nupã (hikuái).
 A2sg-look-DIM those boy-RE yesterday B1sg-hit pron.AG.3pl
 'Look at those boys. Yesterday [they] hit me.'
- b. Context: Yesterday, two cows bit me. I point them out to you.
 E-ma'ẽ-mi umi vaká-re. Kuehe che-su'u (hikuái).
 A2sg-look-DIM those cow-RE Yesterday B1sg-bite pron.AG.3pl
 'Look at those cows. Yesterday [they] bit me.'

In sum, implicit arguments in Paraguayan Guaraní can in principle denote human, non-human animate, inanimate, singular and plural entities but there is variation in the extent to which human proto-patient and proto-recipient arguments may be implicit.

5 INFORMATION-STRUCTURAL RESTRICTIONS

In Paraguayan Guaraní, as in other languages, phonologically reduced material cannot be information-structurally prominent. Thus, implicit arguments cannot realize information-structurally prominent arguments, including focused arguments, contrastively focused arguments and arguments that indicate a shift in topic.

Consider first focused arguments, which include arguments that provide the answer to a content question. In the answer M1 in (52), the proto-agent argument of *che-rohory* (B1sg-appreciate) is an implicit argument. In response to the question Q in (52), which inquires about who appreciates Maria, answer M1 is judged to be unacceptable. Answers M2, in which the proto-agent argument is realized by the independent third person pronoun *ha'e* (pron.AG.3) or a proper name, are judged to be acceptable.

- (52) Context: Samuel poses question Q to Maria.
 Q: Máva=pa nde-rohory?
 who=Q B2sg-appreciate
 'Who appreciates you?'
- M1: [pointing at Juan]
 # Che-rohory.
 B1sg-appreciate
 (Intended: [He] appreciates me.)

M2: [pointing at Juan]
 Ha'e/Juã che-rohory.
 pron.AG.3/Juan B1sg-appreciate
 'HE/JUAN appreciates me.'

The example in (53) shows that the clause in M1 is acceptable when the proto-agent argument is not a focus:

(53) E-ma'ẽ-mi. Upépe Juã. Che-rohory.
 A2sg-look-DIM there Juan B1sg-appreciate
 'Look. There's Juan. [He] appreciates me.'

Implicit arguments cannot be contrastively focused. In (54), the addressee, referred to by the independent second person singular pronoun *nde* (pron.AG.2sg), is contrasted with a third person (Sandra's current boyfriend). As illustrated in (54a), the contrastively focused argument denoting the current boyfriend cannot be an implicit argument. The variants in (54b), where the contrastively focused argument is realized by the third person pronoun *ha'e* (pron.AG.3) or the noun phrase *Márko*, are acceptable.

(54) Context: Sandra is talking to her ex-boyfriend about her current boyfriend Marko.
 Nde nda-che-rayhú-i...
 pron.AG.2sg NEG-B1sg-love-NEG
 'You don't love me...'
 a. # há=katu che-rayhu.
 and=CONTRAST B1sg-love
 (Intended: ...but [he] loves me.)
 b. há=katu ha'e/Márko che-rayhu.
 and=CONTRAST pron.AG.3/Marko B1sg-love
 '...but HE/MARKO loves me.'

The example in (55) illustrates that the clause in (54a) is acceptable when the proto-agent argument is not contrastively focused.

(55) Juã nd-oi-kó-i che-ndive há=katu che-rayhu.
 Juan NEG-A3-be-NEG pron.AG.1sg-with and=CONTRAST B1sg-love
 'Juan doesn't live with me but [he] loves me.'

Finally, implicit arguments cannot realize a topic shift. In the context sentence in (56), the speaker is the topic, as the proto-agent of the hitting event. It is not possible to indicate a topic shift in the next clause, i.e., that Laura's child is the proto-agent of that hitting event, with implicit anaphoric argument, as illustrated in (56a). Instead, Laura's child is referred to with an independent pronoun or a full noun phrase, as in (56b).

- (56) Ai-nupã Láura membý-pe.
 A1sg-hit Laura child-PE
 ‘I hit Laura’s child.’
- a. # Upéi **che-nupã** chéve.
 then B1sg-hit pron.NONAG.1sg
 (Intended: Then [s/he] hit me.)
- b. Upéi ha’e/Láura memby che-nupã chéve.
 then pron.AG.3/Laura child B1sg-hit pron.NONAG.1sg
 ‘Then s/he/Laura hit me.’

The example in (57) illustrates that the clause in (56a) is acceptable when the proto-agent argument is not a shifted topic:

- (57) Kuehe Láura memby oi-nupã Láura-pe ha upéi **che-nupã**
 yesterday Laura child A3-hit Laura-PE and then B1sg-hit
 chéve.
 pron.NONAG.1sg
 ‘Yesterday Laura’s child hit Laura and then [she] hit me.’

In sum, information-structurally prominent arguments cannot be implicit.

6 SUMMARY AND CROSS-LINGUISTIC COMPARISON

Implicit arguments are arguments of predicates that do not have an overt exponent in the clause headed by that predicate. With respect to the grammar of Paraguayan Guaraní, this means that an implicit argument is an argument that is not realized by a cross-reference marker, an independent pronoun or some other noun phrase. This paper has shown that an argument may be implicit in Paraguayan Guaraní if it is a non-cross-referenced argument according to the cross-referencing system of the language (section 2), if it does not denote a human proto-patient or proto-recipient argument, for some speakers (section 4) and if it is not information-structurally prominent (section 5).

The distribution of implicit arguments in Paraguayan Guaraní is unlike that of any other language that has been described so far. For instance, while subjects of both intransitive and transitive verbs can be implicit in so-called ‘null subject languages’, as illustrated for Italian in the examples in (58), the arguments of intransitive predicates are never implicit in Paraguayan Guaraní since they are always cross-referenced on the predicate.

- (58) (Cabredo Hofherr 2003:83)
- a. What did Juan do at the party?
 Cantó.
 sing.3sg
 ‘[He] sang.’
- b. En España hablan Español.
 in Spain speak.3pl Spanish
 ‘In Spain, [they] speak Spanish.’

Languages like Japanese, Korean, Russian and Mandarin have been described as ‘discourse-oriented’ languages because they allow not just subjects to be implicit but also other types of arguments, including objects (e.g., Huang 1984, Oku 1998, Kim 1999). The empirical generalizations established in this paper shows that the distribution of implicit arguments in Paraguayan Guaraní is relatively more comparable to discourse-oriented languages than null subject languages because in Paraguayan Guaraní, too, a wide range of arguments. And like in other discourse-oriented languages, there is no person/number morphology realized on the main predicate in Paraguayan Guaraní that would identify the person/number features of the implicit argument, in contrast to null subject languages (cf., e.g., the Italian examples in (58)). Discourse-oriented languages, however, differ from Paraguayan Guaraní in that their implicit arguments are typically not subject to person restrictions. In Korean, for example, first, second and third person arguments can be implicit:

(59) (adapted from Kim 2007:67)

A mother (M) and her child (C) are talking about the child’s tooth extraction.

C: By the way, I extracted two [of my teeth].

M: anya hana-pakke an-ppop-ass-e.
no one-only not-extract-PST-DECL
‘No, [you] extracted only one.’

C: ikes-un an-ppop-ass-e.
this-TOP not-extract-PST-DECL
‘As for this, [I] didn’t extract [it].’

Implicit arguments in other languages do exhibit person restrictions. In Brazilian Portuguese, for example, only third person inanimate objects may be implicit (Farrell 1990, Schwenter and Silva 2002) and in Swabian, a non-standard variety of German, first person singular and third person singular neuter subjects may be implicit in many fewer environments than second person singular ones (Bohnacker 2013); see also Prince 1994 on Yiddish. In particular, it seems that when languages exhibit categorical person restrictions on implicit arguments, it is the case either that only local persons (first and second) are implicit anaphoric arguments (as in Hebrew, Artstein 1999) or that only third person arguments are implicit anaphoric arguments (as in Brazilian Portuguese, Farrell 1990).

In sum, Paraguayan Guaraní is typologically unusual, both among discourse-oriented and null subject languages, in exhibiting a categorical restriction against first person proto-agent and proto-patient implicit anaphoric arguments. Since American indigenous languages have not received much attention to date in the literature on implicit arguments, it remains to be seen whether the distribution of implicit arguments observed for Paraguayan Guaraní implicit arguments is also observed in other languages with similar typological profiles.

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