

The interpretation of implicit arguments in Paraguayan Guaraní

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Abstract: Paraguayan Guaraní allows for implicit arguments, that is, arguments that are neither cross-referenced on the verb nor realized by an independent noun phrase. Building on Tonhauser's 2017 description of the distribution of implicit arguments in the language, this paper describes the interpretations such arguments can receive. Specifically, the paper shows that implicit arguments in Paraguayan Guaraní can receive elided and existential interpretations, in addition to the anaphoric interpretation introduced in Tonhauser 2017.

Keywords: Implicit arguments; Paraguayan Guaraní; anaphoric, elided and existential interpretations; verb classes

1. Introduction

In Paraguayan Guaraní, the arguments of verbs may be implicit, in which case they are neither cross-referenced on the verb nor realized by an independent noun phrase. To illustrate implicit arguments, consider the example in (1), which features the (bold-faced) transitive verb *(o)mbo-hovái* 'answer'. Its first person singular theme argument is not implicit: it is cross-referenced on the verb with the first person set B cross-reference marker *che-* 'B1sg'. Its third person singular agent argument, however, is implicit: it is neither cross-referenced on the verb nor realized by an independent noun phrase. As indicated by the English translation of (1), the implicit agent argument is understood to be the Little Prince. (Throughout the paper, arguments that are implicit in Paraguayan Guaraní are given in angle brackets in the English translations.)^{1,2}

(1) Context: The pilot asks the Little Prince if he has plans for tomorrow.

Jepe na-che-**mbo-hovái**-ri.
but NEG-B1sg-CAUS-face-NEG

'But [the Little Prince/he] did not answer me.' (Saint-Exupéry 2005, XXV)

Due to the cross-referencing system of the language, not all arguments of Paraguayan Guaraní verbs can be implicit. As described in detail in Tonhauser 2017, implicit arguments are limited to arguments of (di)transitive verbs, to the exclusion of the single argument of intransitive verbs, and they cannot be first person agent or theme arguments of (di)transitive verbs. The distribution of implicit arguments was described in Tonhauser 2017 on the basis of examples in which the implicit arguments received anaphoric

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¹ The Paraguayan Guaraní examples presented here are given in the standardized orthography of the language used in Paraguay (Ministerio de Educación y Cultura 2004, Velázquez-Castillo 2004a, 1421f.), except that all postpositions are attached 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 (stress on the final syllable). The examples are glossed according to the Leipzig glossing conventions. The following additional glosses are used: A/B = set A/B cross-reference marker, CONTRAST = contrastive topic (Tonhauser 2012), DES = desiderative modal, MUST = necessity modal, -PE = marker of theme, spatial, or temporal arguments/adjuncts (Shain and Tonhauser 2011), pron.AG/NON-AG = agent argument / non-agent argument pronoun, PROSP = prospective aspect/modal (Tonhauser 2011), -RE = object marker.

² Examples not marked with a source were judged by three or four native speaker consultants. Examples without a diacritic were judged to be acceptable by each consultant in the context given; those marked with '#' were judged to be unacceptable, and are hypothesized to be syntactically well-formed but unacceptable for semantic/pragmatic reasons. Examples that provide evidence for a morphological (in)compatibility were judged out of context and are thus presented without a context. Such examples are translated with English present tense sentences though the Paraguayan Guaraní sentences are also compatible with other temporal references. See Tonhauser 2011 for a discussion of temporal reference in the language.

interpretations, as in (1), where the implicit argument is anaphorically resolved to the Little Prince. Building on [Tonhauser 2017](#), this paper shows that implicit arguments in Paraguayan Guaraní can receive not only anaphoric interpretations, but also elided and existential interpretations. The paper proceeds as follows: Section 2 introduces the basics of the Paraguayan Guaraní cross-referencing system, and summarizes the relevant findings from [Tonhauser 2017](#) regarding the distribution of implicit arguments and their anaphoric interpretation. Readers familiar with the language and the earlier work can skip this section. Section 3 describes the elided interpretation of implicit arguments, and section 4 the existential interpretation. The paper concludes in section 5.

2. The distribution of implicit arguments and their anaphoric interpretation

Paraguayan Guaraní verbs can only combine with one cross-reference marker, regardless of their valence. For intransitive verbs, this means that the single argument is always cross-referenced: some intransitive verbs, like *(o)guata* ‘walk’ in (2a), cross-reference their single argument with a set A marker, while other intransitive verbs, like *(che)kaigue* ‘be lazy’ in (2b), cross-reference their single argument with a set B marker; for the two sets of cross-reference markers see Table 1. For details on the selectional restrictions of intransitive verbs see [Gregores and Suárez \(1967\)](#) and [Velázquez-Castillo \(2002 2004a\)](#).

- (2) a. **A-guata.**
A1sg-walk
‘I walk.’
b. **Che-kaigue.**
B1sg-lazy
‘I am lazy.’ ([Tonhauser 2017](#), 199)

Person/number	set A	set B
1sg	<i>a(i)-</i>	<i>che-</i>
2sg	<i>re(i)-</i>	<i>nde- (ne-)</i>
3	<i>o(i)-</i>	<i>i-, ij-, hi’- (iñ-)</i>
1pl.incl	<i>ja(i)- (ñā(i)-)</i>	<i>ñande- (ñane-)</i>
1pl.excl	<i>ro(i)-</i>	<i>ore-</i>
2pl	<i>pe(i)-</i>	<i>pende- (pene-)</i>
1:2sg	<i>ro(i)-</i>	–
1:2pl	<i>po(i/ro)-</i>	–

Table 1: Paraguayan Guaraní cross-reference markers, with nasal allomorphs in parentheses, adapted from [Estigarribia 2020](#), 127f., 134

For (di)transitive verbs (in active voice), the two hierarchies in (3) determine whether the agent or the theme argument is cross-referenced:

- (3) a. Person hierarchy: 1 > 2 > 3
b. Thematic role hierarchy: agent > theme

To illustrate the person hierarchy, consider the examples in (4), which both feature the transitive verb *(o)topa* ‘find’, and both involve a first and a third person argument. In accordance with the person hierarchy, the first person argument is cross-referenced on the verb, regardless of whether it is the agent, as in (4a), where it is cross-referenced with the set A marker *a-* ‘A1sg’, or the theme, as in (4b), where it is cross-referenced with the set B marker *che-* ‘B1sg’.

- (4) a. **A-topa jagua.**
A1sg-find dog
‘I find a/the dog.’

- 65 b. **Che-topa jagua.**
 B1sg-find dog
 66 ‘A/the dog finds me.’

67 The thematic role hierarchy in (3b) comes into play when both the agent and the
 68 theme are third person, as in the example in (5), which features the transitive verb
 69 (*oi*)*pytyvõ* ‘help’. In such cases, the agent argument is cross-referenced with a set A
 70 marker:

- 71 (5) Context: The Little Prince has met the lamplighter and has pity with him.

72 Oi-**pytyvõ**-se kuri iñ-angirũ-me.
 A3-help-DES past B3-friend-PE

- 73 ‘He wanted to help his friend.’ (Saint-Exupéry 2005, 52)

74 Finally, when the agent is first person and the theme is second person, a portman-
 75 teau marker cross-references both the agent and the theme argument. This is illustrated
 76 in (6), where the first person agent and the second person (singular) theme arguments
 77 are both cross-referenced on the verb (*o*)*guerovia* ‘believe’ with *ro-* ‘1:2sg’.

- 78 (6) Context: The pilot reports what the Little Prince said to him when he was upset
 79 about what the pilot said about flowers.

80 Peteĩ py’aro kirirĩ-re, he’i chéve: “Ndo-**ro-guerovía**-i!”
 one hate silent-RE A3.say pron.NON-AG.1sg NEG-1:2sg-believe-NEG

- 81 ‘After a hateful silence, he said to me: “I don’t believe you!”’ (Saint-Exupéry
 82 2005, 28)

83 2.1. The distribution of implicit arguments

84 As defined in Tonhauser 2017, an argument is implicit if it is neither cross-referenced
 85 on the verb nor realized by an independent noun phrase. Given the Paraguayan Guaraní
 86 cross-referencing system, only arguments of transitive or ditransitive verbs may be
 87 non-cross-referenced. Due to the person hierarchy in (3a), first person agent or theme
 88 arguments of (di)transitive verbs are always cross-referenced, and are therefore never
 89 implicit. First person recipients or causee arguments of ditransitive verbs may also be
 90 implicit. For details on non-cross-referenced arguments, see Tonhauser 2017, 211.

91 Implicit arguments are not subject to a number restriction: they can be singular, as
 92 in (1), or plural, as in (7B).

- 93 (7) A: Re-hechá=pa che-róga-kuéra?
 A2sg-see=Q B1sg-house-PL
 ‘Did you see my houses?’

95 B: Heẽ, a-**hecha**.
 yes A1sg-see

- 96 ‘Yes, I saw [them].’ (Tonhauser 2017, 220)

97 Implicit arguments can denote human entities, as in (1), non-human animate entities, as
 98 in (8), or inanimate entities, as in (7B). However, as reported in Tonhauser 2017, there are
 99 examples for which some speakers of Paraguayan Guaraní reject implicit human theme
 100 and recipient arguments. For such speakers, such arguments must be realized with an
 101 independent pronoun.

- 102 (8) Che-vesína o-guereko peteĩ mbarakaja. Kuehe che-**su’u**.
 B1sg-neighbor A3-have one cat. yesterday B1sg-bite

- 103 ‘My neighbor has a cat. Yesterday [it] bit me.’ (Tonhauser 2017, 214)

104 Finally, implicit arguments cannot be information-structurally prominent. For
 105 instance, as illustrated in (9), the shifted topic (Marko) cannot be realized by an im-
 106 plicit argument, as shown by the unacceptability of (9a), but must be realized with an
 107 independent pronoun, as shown in (9b):

108 (9) Context: Sandra is talking to her ex-boyfriend about her current boyfriend Marko.

109 Nde nda-che-rayhú-i...
 pron.AG.2sg NEG-B1sg-love-NEG

110 ‘You don’t love me...’

111 a. #há=katu che-rayhu.
 and=CONTRAST B1sg-love
 (but [he] loves me.)

112 b. há=katu ha’e che-rayhu.
 and=CONTRAST pron.AG.3 B1sg-love

113 ‘but he loves me.’ (Tonhauser 2017, 225)

115 2.2. Anaphoric interpretations of implicit arguments

116 The distribution of implicit arguments in Paraguayan Guaraní was illustrated in
 117 Tonhauser 2017 on the basis of examples in which the implicit argument received an
 118 anaphoric interpretation, that is, the implicit argument received its interpretation by
 119 being anaphorically resolved to an accessible discourse referent (Karttunen 1976; Kamp
 120 1981; Heim 1982). In this sense, the anaphoric interpretation of implicit arguments
 121 in Paraguayan Guaraní is identical to that of English pronouns, with the exception
 122 that implicit arguments cannot be information-structurally prominent (see section
 123 2.1). Specifically, the antecedent discourse referent can be strongly familiar, as in (8),
 124 where it was introduced by a noun phrase, or weakly familiar, that is, introduced by an
 125 entity that is salient in the context of utterance, like a goat walking by (Roberts 2003).
 126 Since Tonhauser 2017 already provided detailed empirical evidence for the anaphoric
 127 interpretation of implicit arguments in Paraguayan Guaraní, including deictic, discourse-
 128 anaphoric, bound, and donkey anaphoric interpretations, this section merely highlights
 129 properties of this interpretation that are useful to keep in mind when introducing the
 130 elided and existential interpretations in sections 3 and 4, respectively.

131 The first property is that implicit anaphoric arguments are felicitous only if there
 132 is a uniquely salient, familiar discourse referent (Roberts 2003), as in (1) and (8). When
 133 such an antecedent discourse referent is not available, as in (10a), it is not possible for
 134 the argument to be implicit; rather, a full noun phrase must be used, as in (10b).

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

136 a. #Kuehe che-su’u.
 yesterday B1sg-bite
 (Yesterday, [it] bit me.)

137 b. Kuehe peteĩ jagua che-su’u.
 yesterday one dog B1sg-bite

138 ‘Yesterday, a dog bit me.’ (Tonhauser 2017, 214)

140 A second property is that the antecedent discourse referent must be accessible (for
 141 accessibility, see Kamp and Reyle 1993). (11a) is unacceptable because the discourse
 142 referent that was introduced by the noun phrase *peteĩ kóche* ‘a car’ is not accessible to the
 143 implicit argument, as it is in the scope of negation. In (11b), by contrast, the discourse
 144 referent introduced by the same noun phrase is accessible to the implicit argument,
 145 thereby making possible an anaphoric interpretation of the implicit argument.

- 146 (11) a. #Juã nd-o-guerekó-i peteĩ kóche. **A-hecha-uka** ndéve
 147 Juan NEG-A3-have-NEG one car A1sg-see-CAUS pron.NON-AG.2sg
 148 kuehe.
 149 yesterday
 148 (Juan doesn't have a car. I showed [it] to you yesterday.)
 149 b. Juã o-guereko peteĩ kóche. **A-hecha-uka** ndéve kuehe.
 150 Juan A3-have one car A1sg-see-CAUS pron.NON-AG.2sg yesterday
 150 'Juan has a car. I showed [it] to you yesterday.' (Tonhauser 2017, 216f.)

151 In contrast to English, where implicit anaphoric arguments only occur with a small
 152 number of verbs (Fillmore 1986, 105), implicit anaphoric arguments can be observed with
 153 any transitive verb in Paraguayan Guaraní. The examples in (12) illustrate, for instance,
 154 anaphorically implicit arguments with (o)*japo* 'make' and (o)*juka* 'kill', respectively, two
 155 verbs that do not allow for anaphoric implicit arguments in English.

- 156 (12) a. Context: Sofia and I work with wood. We make furniture. Yesterday we
 157 made a chair together; we made nothing else.
 158 Kuehe Sofía o-japo apyka ha che a-**japo** avei.
 159 yesterday Sofia A3-make chair and pron.AG.1sg A1sg-make too
 159 'Yesterday Sofia made a chair and I made [it], too.'
 160 b. Context: Sofia and I went hunting yesterday. She saw a boar and I killed it.
 161 Sofía o-hecha kure ka'aguy ha che a-**juka**.
 162 Sofia A3-see boar and pron.AG.1sg A1sg-kill
 162 'Sofia saw a boar and I killed [it].'

163 Against this background on the distribution of implicit arguments and their anaphoric
 164 interpretations, the next two sections of the paper introduce two additional interpreta-
 165 tions that Paraguayan Guaraní implicit arguments can receive, namely elided interpreta-
 166 tions (section 3) and existential interpretations (section 4).

167 3. Elided interpretations

168 This section shows that implicit arguments in Paraguayan Guaraní may receive
 169 (what are referred to here as) elided interpretations. An implicit argument is said to
 170 receive an elided interpretation when it is interpreted as if a noun phrase that was
 171 realized in prior discourse occurred in the clause of the implicit argument; this noun
 172 phrase is referred to here as the 'antecedent noun phrase' (see Hankamer and Sag 1976
 173 on surface anaphora). To illustrate the elided interpretation, consider (13). The third
 174 person theme argument of (o)*hecha* 'see' in Bruno's response is implicit. The antecedent
 175 noun phrase is *peteĩ kóche i-vaí-va* 'an ugly car' in Abel's utterance. Bruno's response is
 176 interpreted as if this antecedent noun phrase occurred in the response: Bruno asserts
 177 that he, too, saw an ugly car. Evidence that this interpretation of the implicit argument
 178 is not anaphoric comes from the context: Bruno saw a different car than Abel, so the
 179 implicit argument is not interpreted as the discourse referent introduced by the noun
 180 phrase *peteĩ kóche i-vaí-va* 'an ugly car' in Abel's utterance.

- 181 (13) Context: Abel and Bruno live in different cities and saw different ugly cars. They
 182 talk on the phone.
 183 Abel: Kuehe a-hecha peteĩ kóche i-vaí-va.
 184 yesterday A1sg-see one car B3-ugly-REL
 184 'Yesterday I saw an ugly car.'
 185 Bruno: Che a-**hecha** avei.
 186 pron.AG.1sg A1sg-see too
 186 'I saw [an ugly car/one], too.'

The critical difference between the elided and the anaphoric interpretation is, as already noted above, that an implicit argument that receives an anaphoric interpretation has the same denotation as its antecedent discourse referent, whereas an implicit argument that receives an elided interpretation is merely interpreted as if the antecedent noun phrase occurred in the clause. A consequence of this difference is that implicit arguments that receive an elided interpretation do not require accessible discourse referents. For instance, in (14), the noun phrase *peteĩ kóche* ‘a car’ introduces a discourse referent in the scope of negation. As illustrated in section 2.2, this discourse referent is not a suitable antecedent for an anaphoric implicit argument because it is not accessible (as shown above, (11a) is unacceptable). The implicit argument in the second clause of (14), however, can receive an elided interpretation: what Ana owns is what is denoted by the antecedent noun phrase *peteĩ kóche* ‘a car’.

- (14) Nd-a-guerekó-i peteĩ kóche, há=katu Ána o-guereko.
 NEG-A1sg-have-NEG one car and=CONTRAST Ana A3-have
 ‘I don’t have a car, but Ana has [a car/one].’

If implicit arguments that receive an elided interpretation are interpreted as if the antecedent noun phrase occurred in the clause, then we expect such implicit arguments to introduce discourse referents that are available for subsequent anaphoric reference. This expectation is borne out, as illustrated in (15). The noun phrase *peteĩ mburika* ‘a donkey’ in the first clause of (15) introduces a discourse referent in the scope of negation (so one that is inaccessible for anaphoric implicit arguments outside the scope of negation). The implicit argument in the second clause of (15) receives an elided interpretation: it is interpreted as a donkey (parallel to (14)). Empirical evidence that this implicit argument introduces a discourse referent comes from the acceptability of the third clause of (15), which features an anaphoric implicit argument: the donkey that the speaker has encountered is the one that bit her.

- (15) Ána nd-o-topá-i araka’eve peteĩ mburika há=katu che
 Ana NEG-A3-meet-NEG never one donkey and=CONTRAST pron.AG.1sg
 a-topa ha che-su’u.
 A1sg-meet and B1sg-bite
 ‘Ana has never encountered a donkey but I have encountered [one] and [it] bit me.’

Like implicit anaphoric arguments, implicit arguments that receive an elided interpretation can be animate (as in (15)) or inanimate (as in (14)). The antecedent noun phrases of implicit arguments that receive an elided interpretation can be singular, as in (14) and (15), plural, or quantificational, as shown in the examples in (16):

- (16) A: E-guerú=pa { mokoĩ / sa’i / heta / enterovéa } líbro?
 A2sg-bring=Q two few many every book
 ‘Did you bring two books / few books / many books / every book?’
 B: Heẽ, a-gueru.
 yes A1sg-bring
 ‘Yes, I brought [two books] / [few books] / [many books] / [every book].’

A hallmark of ellipsis are strict and sloppy interpretations (Ross 1967). Research on implicit arguments in other languages that can receive elided interpretations reports the availability of both strict and sloppy interpretations; see, for instance, Otani and Whitman 1991 on Mandarin, Korean, and Japanese, and Cyrino and Lopes 2016 on Brazilian Portuguese. In Korean, for instance, Otani and Whitman 1991 report that the utterance in (17) with the transitive verb *peili* ‘discard’ can receive a strict interpretation, according to which Yengmi threw out Chelswu’s letters, and a sloppy interpretation, according to which Yengmi threw out her own letters.

- 232 (17) Chelswu-ka [caki-uy phyenci-ul] peli-ess-ta. Yengmi-to [e]
 Chelswu-NOM self-of letter-ACC discard-PST-DECL Yengmi-also
 233 peli-ess-ta.
 discard-PST-DECL
 234 'Chelswu threw out his letters. Yengmi also threw out his/her letters.' (Otani and
 235 Whitman 1991, 346; glosses and translation adapted)

236 Unsurprisingly, examples constructed to elicit a strict interpretation of an implicit
 237 argument that receives an elided interpretation are judged to be acceptable in Paraguayan
 238 Guaraní, as they are nothing other than anaphoric interpretations. Thus, in (18), the
 239 implicit argument of *(o)hayhu* 'love' is understood to be Juan's dog.

- 240 (18) Context: Juan loves his dog, and Maria also loves Juan's dog. Maria does not
 241 have a dog of her own.

242 Juã o-hayhu i-jaguá-pe ha María o-hayhu avei.
 Juan A3-love B3-dog-PE and Maria A3-love too

243 'Juan loves his dog and Maria loves [it], too.'

244 Examples comparable to the sloppy interpretation of (17) are unacceptable in
 245 Paraguayan Guaraní. In (19), for instance, the context is such that only a sloppy interpre-
 246 tation of the implicit argument is true (Ana didn't hit anybody on the arm but her own
 247 son). My consultants did not accept (19a), which suggests that a sloppy interpretation of
 248 the implicit theme argument is not possible. By contrast, an utterance of (19b), where the
 249 theme argument is realized by the possessive noun phrase *i-membý-pe* 'her child', was
 250 judged to be acceptable.

- 251 (19) Context: Sofia hit her son on the arm, and Ana hit her own son on the leg; nobody
 252 hit anything else.

253 Sofía oi-nupã i-membý-pe ij-yvá-rupi...
 Sofia A3-hit B3-child-PE B3-arm-through

254 'Sofia hit her child on the arm...'

- 255 a. #ha Ána oi-nupã hetymá-rupi.
 and Ana A3-hit B3.leg-through
 (and Ana hit [her child] on the leg.)
 256 b. ha Ána (oi-nupã) i-membý-pe hetymá-rupi.
 and Ana A3-hit B3-child-PE B3.leg-through
 257 'and Ana hit her child on the leg.'

259 It would be premature, however, to take examples like (19) to show that implicit
 260 arguments in Paraguayan Guaraní are incompatible with a sloppy elided interpretation.
 261 Rather, examples like (19) may be unacceptable because implicit argument would be
 262 information-structurally prominent, which, as mentioned in section 2.1, is not possible
 263 (see also Tonhauser 2017). Specifically, in (19), the theme argument in the second clause
 264 (intended to be interpreted as Ana's child) is contrasted with the theme argument of
 265 the first clause (Sofia's child). Support for this hypothesis comes from examples like (20),
 266 in which the implicit argument are compatible with a sloppy elided interpretation.
 267 In this example, the contrast between the first and second clauses does not involve the
 268 implicit argument (which is therefore not information-structurally prominent) but rather
 269 the temporal/aspectual reference of the clauses.

- 270 (20) Context: Sandra and I each have a dog. Mine is called Lobi and hers is called
 271 Bobi. I washed my dog yesterday and Sandra is going to wash hers today.

272 A-mbo-jahu che-jaguá-pe kuehe (ha) Sandra o-mbo-jahú-ta
 A1sg-CAUS-bathe B1sg-dog-PE yesterday and Sandra A3-CAUS-bathe-PROSP
 273 ko ára-pe.
 this day-PE

274 'I bathed my dog yesterday and Sandra is going to bathe [hers / her dog] today.'

275 In sum, implicit arguments in Paraguayan Guaraní may receive not just anaphoric
 276 interpretations, but also elided interpretations. In contrast to anaphoric interpretations,
 277 where the implicit argument receives the same interpretation as the antecedent discourse
 278 referent (which must be accessible), implicit arguments under an elided interpretation are
 279 interpreted like the antecedent noun phrase (and do not require an accessible antecedent
 280 discourse referent). As expected, implicit arguments that receive an elided interpretation
 281 can receive a strict or a sloppy interpretation.

282 4. Existential interpretations

283 A third type of interpretation of implicit arguments in Paraguayan Guaraní are
 284 existential interpretations. These are also found in English, as illustrated in (21), where
 285 the theme argument of *eat* is an implicit argument with an existential interpretation:
 286 John is understood to not have eaten anything.

287 (21) There was a piece of bread on the table but John didn't eat. (Condoravdi and
 288 Gawron 1996, 3).

289 Evidence that existential interpretations are a third type of interpretation of implicit
 290 arguments in Paraguayan Guaraní comes from examples in which an anaphoric or
 291 elided interpretation is not available. In (22), for instance, the implicit theme argument of
 292 *(o)karu* 'eat' receives an existential interpretation (as indicated by the English translation).
 293 An anaphoric interpretation is not available because there is no suitable antecedent
 294 discourse referent, and an elided interpretation is not available because there is no
 295 antecedent noun phrase in prior discourse. In (23), the theme argument of *(o)menda*
 296 'marry' is implicit and again understood to receive an existential interpretation. An
 297 anaphoric interpretation is not available because it would mean that the speaker married
 298 the same person as Rosalia (which was contextually established to not be the case). An
 299 elided interpretation is not available because it would mean that the speaker married an
 300 Argentinian (which was also contextually established to not be the case).

301 (22) Context: Luli asks her adult son if he is hungry. He responds:

302 Nahániri. A-karú-ma.
 no A1sg-eat-already

303 'No, I already ate [something].'

304 (23) Context: It's been a while since I last talked to my friend Rosalia. She doesn't
 305 know that I got married to a Paraguayan last month. But before I can tell her, she
 306 tells me that she married an Argentinian last year. I say:

307 Ani chéne! Che a-menda avei!
 NEG.IMP NEG.IMP pron.AGS.1sg A1sg-marry too

308 'No way! I married [somebody], too!'

309 The denotation of implicit arguments that receive an existential interpretation is
 310 restricted to be a culturally appropriate kind compatible with the selectional restrictions
 311 of the verb, as in (22) and (23), but can be deemed unimportant or unknown, as in (24);
 312 see Fillmore 1969 and Fillmore 1986 for discussion.

313 (24) Context: The Little Prince wants to go look at the sunset right now, but it's only
314 morning. The pilot says:

315 Jepe ña-**ha'ārō** mante-va'erā.
but A1pl.incl-wait just-MUST

316 'We have to wait [for something].' (Saint-Exupéry 2005, VI)

317 Little Prince: 'What on earth are we going to wait for?' — Pilot: 'We're going to
318 wait for the sunset.'

319 An utterance of a single clause can involve more than one implicit argument and
320 the two implicit arguments need not receive the same interpretation. This is illustrated
321 for the ditransitive predicate (*o*)*japo-uka* 'cause to make' in (25), where both the causee
322 argument and the theme argument are implicit. The causee argument receives an
323 existential interpretation, while the theme argument receives an anaphoric interpretation:

324 (25) Context: I had a wall built by some guy called Juan who you don't know. You
325 visit my house and see my new wall. I say:

326 A-**japo-uka**.
A1sg-make-CAUS

327 'I made [somebody] make [it].'

328 Implicit arguments that receive an existential interpretation do not make available
329 a discourse referent for subsequent anaphora, unlike implicit arguments that receive an
330 elided interpretation (see the example in (15)). In (26a), for instance, the implicit theme
331 argument of (*o*)*menda* 'marry' receives an existential interpretation: the speaker married
332 someone. This implicit argument does not, however, introduce a discourse referent, as
333 evidenced by the fact that the third person set B cross-reference marker *i-* 'B3' in the final
334 clause is not acceptable. The variant in (26b), where the theme argument is not implicit
335 but realized by the independent noun phrase *paraguáyo* 'a Paraguayan' is acceptable:
336 here the third person cross-reference marker in the final clause has a suitable antecedent
337 discourse referent.

338 (26) Ána n-o-mendá-i argentino-re...
Ana NEG-A3-marry-NEG Argentinian-RE
339 'Ana didn't marry an Argentinian.'

340 a. #Ché=katu a-**menda** ha i-kyrã.
pron.AG.1sg=CONTRAST A1sg-marry and B3-fat
341 (I, on the other hand, married [somebody] and he is fat.)

342 b. Ché=katu a-menda **paraguáyo-re** ha i-kyrã.
pron.AG.1sg=CONTRAST A1sg-marry Paraguayan-RE and B3-fat
343 'I, on the other hand, married a Paraguayan and he is fat.'

344 The existential interpretation is only available for particular implicit arguments,
345 namely causees of causative-marked transitive verbs, as in (25), as well as the theme
346 arguments of what I refer to (following Dixon 1994) as ambitransitive verbs, that is,
347 verbs that have both an intransitive and a transitive use, like (*o*)*menda* 'marry' in (26).
348 This finding is based on an investigation of the valence of 71 verbs: for each verb, I
349 investigated whether it could co-occur with the causativizing prefix *mbo-* shown in (27a),
350 which attaches only to intransitive verbs, with the causativizing suffix *-uka* shown in (
351 27b), which attaches only to transitive verbs,³ and with the portmanteau cross-reference
352 marker *po-* '1:2pl' shown in (27c), which is acceptable only with transitive verbs. I also
353 investigated whether the verb was judged to be acceptable in the intransitive frame in (

27d), and in the transitive frame in (27e). The full set of verbs tested and the consultants' judgments are provided in Appendix A.

- (27) a. A-**mbo**-jahu che-membý-pe.
A1sg-CAUS-bathe B1sg-child-PE
'I bathe my child.' (Tonhauser 2017, 204)
- b. A-hecha-**uka** Juã-pe che-kóche.
A1sg-see-CAUS Juan-PE B1sg-car
'I showed Juan my car.' (Lit. I made Juan see my car.)
- c. Context: A mother is talking to her two children.
Po-hayhu.
1:2pl-love
'I love you.' (Tonhauser 2017, 199)
- d. A-guahẽ Juã róga-pe, ha'ẽ [VERB] hína.
A1sg-arrive Juan B3.house-PE pron.AG.3 PROG
'When I arrived at Juan's house, he was VERBING.'
- e. A-ñe-porandu mba'é=pa / máva-pe=pa Juã [VERB] hína.
A1sg-JE-ask what=Q who-PE=Q Juan PROG
'I asked myself what/who Juan was VERBING.'

As shown in Table 2, the investigation revealed three verb classes: intransitive verbs, which have intransitive uses, but not transitive ones, and are unacceptable with affixes reserved for transitive verbs; transitive verbs, which have transitive uses, but not intransitive ones, and can occur with affixes reserved for transitive verbs; and ambitransitive verbs, which can be used both intransitively and transitively, and which can occur with both causative affixes. Most of the judgments suggested that ambitransitive verbs are unacceptable with the portmanteau prefix.

Verb class	<i>mbo</i> - 'CAUS'	<i>-uka</i> '-CAUS'	<i>po(i)</i> '1:2pl'	intr. use	tr. use
Intransitive	✓	*	*	✓	*
Transitive	*	✓	✓	*	✓
Ambitransitive	✓	✓	most: *	✓	✓

Table 2: Verb classes in Paraguayan Guaraní. A checkmark '✓' means that the combination tends to be judged to be acceptable, an asterisk '*' that it tends to be judged to be unacceptable.

Further investigation revealed that only the implicit theme arguments of ambitransitive verbs can receive existential interpretations, not those of transitive verbs. This was established by investigating whether the implicit argument was acceptable in a context that explicitly excluded the anaphoric and elided interpretations, as in the examples in (28). The implicit theme argument of the ambitransitive verb (*o*)*kasa* 'hunt' may receive an existential interpretation, as shown in (28a). The implicit theme argument of the transitive verb (*o*)*hecha* 'see', on the other hand, may not receive an existential interpretation, as shown in (28b).

- (28) a. Context: Sofia and I went hunting. Sofia hunted a boar and I hunted a rabbit; I hunted nothing else. I say:
Sofía o-kasa peteĩ kure ka'aguy ha che a-**kasa** avei.
Sofía A3-hunt one boar and pron.AG.1sg A1sg-hunt too
'Sofia hunted a boar and I hunted [something], too.'

³ For causative constructions in Paraguayan Guaraní see Velázquez-Castillo 2004b.

386 b. Context: Sofia and I went hiking. She saw a boar and I saw a rabbit; I saw
387 nothing else. I say:

388 #Sofia o-hecha peteĩ kure ka'aguy ha che a-hecha avei.
Sofia A3-see one boar and pron.AG.1sg A1sg-see too

389 (Sofia saw a boar and I saw [something], too.)

390 Whether implicit arguments of ambitransitive verbs are compatible not just with
391 existential interpretations, but also with anaphoric and elided ones, is a question for
392 future research. The examples in (29a) and (29b) show that ambitransitive verbs with
393 implicit theme arguments are acceptable in contexts that license anaphoric and elided
394 interpretations, respectively. But existential interpretations of the implicit arguments are
395 also possible in both of these examples, as indicated by the English translations. While
396 consultants' comments are suggestive of anaphoric and elided interpretations, it is not
397 clear whether these come about through the conventionally-specified anaphoric meaning
398 of the implicit argument (i.e., by the interpretation of the implicit argument in (29a)
399 being anaphorically resolved to Sophia's boar) or through the conventionally-specified
400 existential meaning in combination with contextual information.

401 (29) a. Context: Sofia and I went hunting. Sofia hunted a boar and I hunted the same
402 one; I hunted nothing else. I say:

403 Sofia o-kasa peteĩ kure ka'aguy ha che a-kasa avei.
Sofia A3-hunt one boar and pron.AG.1sg A1sg-hunt too

404 'Sofia hunted a boar and I hunted [it/something], too.'

405 b. Context: Sofia and I went hunting. Sofia hunted a boar and I hunted a
406 different boar; I hunted nothing else. I say:

407 Sofia o-kasa peteĩ kure ka'aguy ha che a-kasa avei.
Sofia A3-hunt one boar and pron.AG.1sg A1sg-hunt too

408 'Sofia hunted a boar and I hunted [one/something], too.'

409 The investigation revealed the following ambitransitive verbs: (o)gana 'win', (o)karu
410 'eat', (o)kasa 'hunt', (o)kosina 'cook', (o)lee 'read', (o)mbovyvy 'sow', (o)menda 'marry',
411 (o)mopotĩ 'clean', (o)ñemitĩ 'sow', (o)peska 'fish', (o)pita 'smoke', (o)purahéi 'sing', (o)rambosa
412 'breakfast', and (o)studia 'study'; given (24), (o)ha'arõ 'wait' may also be ambitransitive,
413 but it was not included in the investigation. There is a remarkable overlap between
414 this list of Paraguayan Guaraní verbs and English verbs whose implicit arguments can
415 receive an existential interpretation, which include verbs such as *eat*, as shown in (21), as
416 well as *read*, *sing*, *cook*, *sew*, *bake*, *paint*, *receive*, and *be married* (Condoravdi and Gawron
417 1996; Fillmore 1986; Fodor and Fodor 1980; Shopen 1973; Thomas 1979). This overlap
418 raises the possibility that there is a strong linguistic tendency for verbs with similar
419 meanings to allow for implicit arguments with existential interpretations (in languages
420 that allow implicit arguments). At the same time, however, the Paraguayan Guaraní
421 results also lend support to Fillmore's 1986 claim that the availability of the existential
422 interpretation cannot be solely determined by meaning: Paraguayan Guaraní has two

verbs meaning ‘eat’, namely the transitive verb *ho’u* and the ambitransitive verb *(o)karu*, but only the latter allows for implicit arguments with an existential interpretation.⁴

In sum, implicit arguments in Paraguayan Guaraní can receive not just anaphoric and elided interpretations, but also existential interpretations. These interpretations differ from the former two in that they do not introduce a discourse referent for subsequent reference, and in that their distribution is limited to causee arguments of causative ditransitive verbs and theme arguments of ambitransitive verbs.

5. Concluding remarks

Implicit arguments are a regular occurrence in Paraguayan Guaraní, owing to the cross-referencing system of the language. Tonhauser (2017) showed that such arguments can be compared to English pronouns, in the sense that they can receive anaphoric interpretations. This paper revealed that the comparison to English pronouns is lacking, because implicit arguments can receive a broader set of interpretations, including not just anaphoric interpretations, but also elided and existential ones. There are both linguistic and extra-linguistic constraints on the interpretation that a particular implicit argument can receive. As shown in section 2, the anaphoric interpretation is only available if there is a uniquely salient, accessible discourse referent. Section 3 showed that the elided interpretation necessitates the availability of an antecedent noun phrase in prior discourse. And, as discussed in section 4, the existential interpretation is only available for particular arguments. A study of these interpretations in naturally occurring discourse may reveal further constraints on their distribution.

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⁴ That the version of (i) with the ambitransitive verb *(o)karu* ‘eat’ is judged to be unacceptable in the given context, in which the implicit argument of transitive *ho’u* ‘eat’ can receive an anaphoric interpretation, may at first suggest that ambitransitive verbs are not compatible with such interpretations. It is also possible, however, that *(o)karu* ‘eat’ is blocked in this environment, under the assumption that its implicit argument can receive anaphoric, elided, and existential interpretations, whereas that of *ho’u* ‘eat’ can only receive anaphoric and elided interpretations.

(i) Context: Yesterday my mother made a cake for my birthday.

Ange pyhare che-kyvy **ho’u** / #o-karu.
today night B1sg-brother A3.eat A3-eat

‘Last night my brother ate [it] / #ate [something].’

Appendix A. Verb classes in Paraguayan Guaraní

The 71 verbs included in the investigation are given here together with the judgments that led to their classification as (di)transitive (Table A1), intransitive (Table A2), and ambitransitive (Table A3). Table A4 provides the judgments for verbs without a clear pattern. The first column of each table provides the verb with its English translation. The remaining five columns correspond the five combinations in (27a-e), respectively. The judgments reported provide information about the consultant (judgments from consultants 1-3 were elicited during 2014/15; judgments from consultants 4-5 were elicited during 2015/16) as well as the judgment: ‘y’ means that the consultant judged the combination acceptable, and ‘n’ means that they did not judge it to be acceptable; an additional ‘?’ means that the consultant wasn’t sure. Judgments that do not accord with the classification are bold-faced; some of these bold-faced exceptions can presumably be explained on the basis of semantic or selectional restrictions.

Table A1. Judgments for verbs that pattern like (di)transitive verbs

	<i>mo-</i> ‘CAUS-’	<i>-uka</i> ‘-CAUS’	<i>po(i)-</i> ‘1:2pl’	intr. use	tr. use
(o)gueraha ‘take’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)guereko ‘have’	1n2n4n5n	1n2y4y5n	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)guerovia ‘believe’	1n2y4y5y	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)gueru ‘bring’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)hayhu ‘love’	1n2n4n5n	1y2y4y5y	1y2y3y4y5y	1n2n4n5n	1y2y4y5y
(o)hecha ‘see’	1n2n4n5y	1y2y4y5y	1y2y4y5y	1n2n3n4n5y	1y2y3y4y5y
(o)heja ‘leave/let’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n	1y2y4y5y
(o)heka ‘search’	1n2y?4n5y	1y2y4y5y	1y2y4y5y	1n2n	1y2y4y5y
(o)hendu ‘hear’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1y2y3n	1y2y3y4y5y
(o)hovapete ‘hit in face’	1y2y4n5y	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)invita ‘invite’	1n2n4n4y	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)japo ‘make/do’	1n2n4n5n	1y2y4y5y	1n2n4n5n	1n2n4n5n	1y2y4y5y
(o)japo-uka ‘cause to do’	1n2n	-	1y2n3n	1n2n	1y2y
(o)jogua ‘buy’	1n2n4n5n	1y2y4y5y	1n2y3y4y5n	1n2n4n5n	1y2y4y5y
(o)juhu ‘meet/discover’	1n2n4n5y	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)juka ‘kill’	1n2n4n5n	1y2y4y5y	1n2n4y5y	1n2n4n5n	1y2y4y5y
(oi)kotevẽ ‘need’	1n2y4y5n	1y2y 4n5n	1y2y4y5y	1n2n3n4n5n	1y2y3y4y5y
(oi)kuua ‘know’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(oi)kytĩ ‘cut’	1n2n4n5y	1y2y4y5y	1y2y4y5y	1n2n3n4n5n	1y2y3y4y5y
(o)mbojy ‘cook’	1n2n	1y2y4y5y	1y2y4y5y	1n2n4n5y	1y2y4y5y
(o)mbotove ‘deny/refuse’	1n2n	1y2y	1y2y	1n2y	1y2y
(o)me’ẽ ‘give’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n3n4n5n	1n2y3y4y5y
(o)mo-kañy ‘lose sth’	1n2n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)mo-mbo ‘throw out’	1n2n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(oi)mo’ã ‘believe’	1n2n4n5n	1y2y 4n5y	1n2y3n4n5n	1n2n3n4n5n	1n2y3n4y5y
(o)mohesakã ‘explain’	1n2n	1y2y4y5y	1n2n4n5y	1n2n4n5n	1y2y4y5y
(o)moĩ ‘put’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n3n4n5n	1n2y3y4y5y
(o)moĩnge ‘insert’	1n2n	1y2y4y5y	1y2y4y5y	1n2n3n4n5n	1n2y3y4y5y
(o)moneĩ ‘accept’	1y2n	1y2y	1y2y	1n2y4n5n	1y2y 4n
(o)ñeipyryĩ ‘begin’	1n2n4y5y	1y 2n4n5y	1n2n4n5n	1n2n4n5n	1y2y4y5y
(o)ntende ‘understand’	1y2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(oi)nupã ‘hit’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
ho’u ‘eat’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n3n4n5n	1y2y3y4y5y
(o)promete ‘promise’	1n2n4n	1y2y4y	1n2n4y5y	1n2n4n5n	1y2y4y5y
(oi)puru ‘use, lend’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(oi)pytyvõ ‘help’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)rairõ ‘fight’	1y2n4n5y	1y2y 4n5n	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)rohory ‘appreciate’	1n2n4n	1y2y4y	1y2y4y5y	1n2n4n	1y2y4y
(oi)su’u ‘bite’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)topa ‘find/meet’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)visita ‘visit’	1n2n4n5n	1y2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y

Table A2. Judgments for verbs that pattern like intransitive verbs

	<i>mo-</i> 'CAUS-'	<i>-uka</i> '-CAUS'	<i>po(i)-</i> '1:2pl'	intr. use	tr. use
(o)guahē 'arrive'	1y2y4y5y	1n2n4n5n	1n2n4n5n	1y2y4y5y	1n2n4n5n
(o)guapy 'sit'	1y2y4y5y	1n2n4n5n	1n2n4n5n	1y2y3y4y5y	1n2n3n4n5n
(o)jahu 'bathe'	1y2y4y5y	1n2n4n5n	1n2n4n5n	1y2y3y4y5y	1n2n3n4n5n
ou 'come'	1y2n4y5y	1n2n4n5n	1n2n4n5n	1y2y4y5y	1n2n4n5n
(che)kaigue 'lazy'	1y2y4y5y	1n2n4n5n	1n2n4n5n	1y2y4y5y	1n2n4y5n
(o)ke 'sleep'	1y2y4y5y	1n2n4n5n	1n2n3n4n5n	1y2y4y5y	1n2n4n5n
(oi)ke 'enter'	1y2y4y5y	1n2n4n5n	1n2n4n5n	1y2y4n5y	1n2n4n5n
(o)sē 'leave'	1y2y4y5y	1n2n4n5n	1n2n4n5n	1y2y4y5y	1n2n4n5n

Table A3. Judgments for verbs that pattern like ambitransitive verbs

	<i>mo-</i> 'CAUS-'	<i>-uka</i> '-CAUS'	<i>po(i)-</i> '1:2pl'	intr. use	tr. use
(o)gana 'win'	1y2y4y5y	1n2y4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)karu 'eat'	1y2y4y5y	1n2n4n5n	1n2n4n5n	1y2y3y4y5y	1y2y3y4y5y
(o)kasa 'hunt'	1y2y4n	1y2y4y	1y2y4y	1y2y4y5n	1y2y4y5y
(o)kosina 'cook'	1y2y4y5y	1y2y4y5y	1n2n4y5y	1y2y4y5y	1y2y4y5y
(o)lee 'read'	1y2y4n5y	1y2y4y5y	1n2n4n5y	1y2y4y5y	1y2y4y5y
(o)mbovyvy 'sow'	1n2n	1y2y4y5y	1n2y4n5n	1y2y4y5y	1y2y4y5y
(o)menda 'marry'	1y2y4y5y	1n2n4n5n	1n2n4n5y	1y2y4y5n	1y2y4y5y
(o)mo-potī 'clean'	–	1y2y4y5y	1y2y4y5y	1y2n3y4y5y	1y2y3y4y5y
(o)ñemitj 'sow'	1y2n4y5y	1y2y4y5y	1n2n4n5n	1y2y4y5y	1y2y4y5y
(o)peska 'fish'	1y2y4y5y	1y2y4y5y	1n2n4n5y	1y2y4y5y	1y2y4y5y
(o)pita 'smoke'	1n2y4y5y	1y2y4n5n	1n2n4n5n	1y2y4y5y	1y2y4y5y
(o)purahéi 'sing'	1y2y4y5y	1n2n4n5n	1n2n4n5n	1y2y3y4y5y	1y3y4y5y
(o)rambosa 'breakfast'	1y2y4y5y	1y?2n4n5n	1n2n4y5n	1y2y4y5y	1y2y4y5y
(o)studia 'study'	1y2y4y5y	1y2n4n5n	1n2n4y5y	1y2y4y5y	1y2y4y5y

475 The verb (*ho*)y'u (eat.water) 'drink water' consists of a transitive verb and an
 476 incorporated theme argument. While the consultants' judgments suggest that this verb
 477 has an intransitive use, their judgments on the remaining criteria were too mixed to
 478 establish a classification. The verb (*o*)guyguy 'look around' looks like a transitive verb
 479 based on its co-occurrence pattern with the two causative markers, but like an intransitive
 480 verb based on its distribution in transitive and intransitive frames. By contrast, the last
 481 six verbs in Table A4 (or, verb/adjunct combinations in the case of *ou i-pó-pe* (come
 482 B3-hand-PE) 'receive'), look like intransitive verbs based on their co-occurrence pattern
 483 with the two causative markers, but like transitive verbs based on their distribution in
 484 intransitive and transitive frames.

Table A4. Judgments for verbs without clear pattern

	<i>mo-</i> 'CAUS-'	<i>-uka</i> '-CAUS'	<i>po(i)-</i> '1:2pl'	intr. use	tr. use
(<i>ho</i>)y'u 'drink water'	1n2n4y5y	1y2n4y5n	1n2n4n5n	1y2y3y4y5y	1y2n3n4n5y
(o)guyguy 'look around'	1n2n	1y2y	1n2n	1y2y	1n2y
(o)maña 'look'	1y2y4y5y	1n2n4n5y	1n2n4n5n	1n2n3n4y5y	1y2y3y4y5y
ou i-póp-e 'receive'	1y2y	1n2n	1n2n	1n2n	1y2y
(che)mandu'a 'remember'	1y2y4y5y	1n2n4n5n	1n2n4n5y	1n2n4n5n	1y2y4y5y
(che)resarai 'forget'	1y2y4y5y	1y2y4n5n	1n2n4n5n	1n2n3n	1n2y3y4y5y
(o)perde 'lose sth'	1y2y4y5y	1y2n4n5n	1y2y4y5y	1n2n4n5n	1y2y4y5y
(o)ñe-ha'ā 'try'	1y2y4y5y	1n2n4n5y	1n2n4y5n	1n2n4n5n	1y2y4y5y

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