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Lexical, pronominal and zero argument encoding in Movima

Katharina Haude (SeDyL–CNRS UMR8202)

Marc Allasonnière-Tang (EA–CNRS/MNHN UMR7206)

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Abstract

Past research on the cross-linguistic discourse conditions for the lexical and nonlexical expressions of arguments has shown that semantic role and animacy both play an important role. Some less attention has been paid so far to the choice between different nonlexical expressions, in particular, unstressed pronouns and zero. This choice is possible in Movima (isolate, Bolivia), where the single argument of a basic intransitive clause and one of the two arguments of a basic transitive clause can remain unexpressed. Based on data from spontaneous oral discourse, the present study investigates the lexical, pronominal, and zero expression of S of the intransitive and P of the ergative transitive clause and shows that S and P do not display the same behaviour in discourse: Overall, P is less often expressed by a pronoun than S, and inanimate referents favour zero rather than pronominal expression. Only an animate S is more often encoded as a pronoun than as zero. It is argued that this exceptional behaviour of animate S arguments reflects their affinity with the A argument of the ergative transitive clause, which typically encodes an animate and topical referent, is obligatorily overtly expressed, and typically expressed by a pronoun.

Key terms: zero argument encoding; discourse ergativity; direct/inverse; animacy; discourse topic

1 Introduction¹

Languages have a wide range of options to encode discourse referents: Simple noun phrases, complex noun phrases including modifiers or relative clauses, stressed and unstressed pronouns. In many languages, it is also possible to omit argument expressions, so that the discourse referent has to be retrieved from the context (see, among others, Bickel 2003; Vollmer in press).

Kibrik (2011) makes a useful distinction between “full” and “reduced” referential devices. Referential expressions consisting of or including a lexical item (typically a noun) are full referential devices, whereas pronouns or zeros are reduced referential devices. The main difference between full and reduced referential devices is that the referent of a full referential device is “lexico-semantically specified and categorized” (Kibrik 2011: 38): a full referential device can make a referent identifiable even if it was not yet present in the linguistic or extralinguistic context. A reduced referential device, by contrast, is “semantically leaner and can be attributed to an individual referent only in a very specific communicative context” (Kibrik 2011: 39). In principle, reduced devices are only available if the referent is already “given” (Chafe 1976) or “activated” (Chafe 1994), i.e., reduced referential devices are ideally used anaphorically.

While the distinction between full and reduced referential devices is thus relatively clear and probably cross-linguistically applicable, the distinctions *within* the categories of full and referential devices are less so. Here, we will investigate the employment not only of full and reduced referential devices, but also that of pronominal vs. zero argument encoding in Movima (isolate, Bolivia; glottocode movi1243), in order to find out on which basis Movima speakers

¹ The main responsibility for the contents of this paper is with Katharina Haude, who did most of the writing and who annotated, counted and interpreted the data. Marc Allasonnière-Tang is primarily responsible for the assessment of the significance of the data and their graphical representation. The study forms part of the research programs *Morphosyntax in Discourse* (Axe3-GL5 of the LabEx EFL, ANR-10-LABX-0083 and IdEx Université Paris Cité - ANR-18-IDEX-000) and *De la description à la typologie* of the *Laboratoire Structure et Dynamique des Langues* (SeDyL: CNRS UMR8202, INALCO, IRD). The first author is deeply indebted to the Movima speakers who shared their knowledge with her. We furthermore wish to thank the audience of the workshop *Topic persistence and topical accessibility in languages of the world* in Paris, June 23-24, 2022, and Anaïd Donabédian and an anonymous reviewer for valuable comments on a previous version of this paper. All shortcomings are our own responsibility.

choose between either one or the other reduced device for referring to a given discourse referent. We will consider the following criteria:

- Grammatical relation: How much does the grammatical relation S, A, or P contribute to the choice of expression (see DuBois 1987)?
- Animacy: How much does the animacy of the referent contribute to the choice of expression (see Haig & Schnell 2016)?
- Discourse frequency (in lesser detail): Which argument expressions are chosen for referent tracking in continuous discourse (see Givón 1983)?

This study is based on data from a corpus of spontaneous oral discourse (i.e. no elicited data or stimulus-based narratives) of Movima, an endangered, genealogically isolated language with still several hundred adult speakers living in and around Santa Ana del Yacuma, Bolivia. The data were collected by the first author during fieldwork between 2001 and 2012,² resulting in a 30-hour-corpus of mostly narrative monologues produced by 30 speakers and amounting to approximately 130,000 words.³ In this corpus, a total of 1486 basic transitive clauses describing scenarios involving two third-person participants were annotated for the following features: voice (direct or inverse), expression of A and P (lexical, pronominal, or zero), and animacy of the discourse referents (human, animate, or inanimate). In addition, 1744 verbal intransitive clauses with 3rd person participants were annotated for argument expression and for the animacy of the argument's referent.⁴

² Over the years, the fieldwork was financed by the following projects: the Spinoza project “Lexicon and Syntax” (Radboud University Nijmegen, 2001-2006); a DoBeS documentation project (VolkswagenFoundation Az-81914/84349; 2006-2013, in collaboration with Silke A. Beuse); and the ESF-EuroBABEL/DFG project “The Movima Inverse in a Cross-Linguistic Perspective” (HA-5910, 2009-2013). For the most part, the data are stored at *The Language Archive* (https://archive.mpi.nl/tla/islandora/object/lat%3A1839_00_0000_0000_0000_0000_4?f%5B0%5D=cmd.Country%3A%22Bolivia%22&f%5B1%5D=cmd.Language%3A%22Movima%22; last accessed on sep 26, 2023).

³ The data were annotated by the first author in a single Toolbox file comprising approximately 26,000 Toolbox records (equivalent to clauses and/or intonation units), and prepared for the quantitative analysis by using the Toolbox filtering and exporting options followed by careful manual checking.

⁴ The number of annotated transitive clauses with two third-person arguments corresponds to the total of basic transitive clauses with two third-person participants encountered in this corpus so far. The number of annotated intransitive clauses, in contrast, does by far not reach the total amount of basic intransitive clauses in the corpus.

While this approach allows to assess the factors grammatical relation and animacy, the analysis of discourse frequency requires a much more fine-grained annotation of continuous discourse, which cannot easily cover such a large amount of data. Therefore, the third criterion mentioned above is only touched upon marginally in this study.

Our calculations have shown that the amount of annotated data is large enough to render significant quantitative results. Given that we are dealing with discourse data, however, the significance of the measured variables tends to be medium or weak, since many other factors not included in this study (speaker, setting, context, genre, among others) are likely to have an effect as well.

The study investigates clauses with third-person referents only. In general, speech-act participants have a different status in discourse than third persons (see Benveniste 1946; DeLancey 1981, among others) and can usually not be expressed lexically. Moreover, in Movima speech-act participants can only be encoded in the internal argument position of transitive clauses, where they cannot be dropped. Therefore, there is no alternation between lexical, pronominal and zero expression of non-third-person arguments.

The paper is structured as follows. Section 2 provides an overview of argument encoding of Movima basic clauses, showing that the single argument of the intransitive clause (S) aligns with P of the direct transitive clause (P_{DR}) and with A of the inverse transitive clause (A_{INV}). Section 3 compares lexical vs. nonlexical encoding of S and P_{DR} , first with regard to grammatical relations (3.2) and then with regard to animacy (3.3). This is the basis for the main point of this paper, Section 4, which focuses on the choice between the two non-lexical argument encoding devices: pronoun and zero, again from the perspective of grammatical relation (4.1) and animacy (4.2). A tentative account of the distribution of the two devices in continuous discourse is included (4.3). Finally, an overview of the distribution of lexical, pronominal, and zero argument encoding according to grammatical relation and animacy is given (4.4). Section 5 then broadens the scope towards the inverse transitive clause type. It is

The annotation of intransitive clauses is still work in progress, and due to the size of the corpus and lack of manpower it is impossible to annotate the corpus exhaustively within a limited range of time. Therefore, the near-equal proportion of annotated transitive vs. intransitive clauses does not represent the proportion of these clause types in actual discourse, where the amount of intransitive clauses is much higher.

shown that, since the grammatical relations in a transitive clause are assigned according to their (discourse-)referential properties, the relation that aligns with S (i.e., P_{DR} or A_{INV}) is the one that is by definition non-topical (5.1). S, however, can also encode a topical discourse referent. Therefore, we hypothesize that animate S arguments share their preference for pronominal encoding with A_{DR} because A_{DR} is always topical and generally expressed pronominally (5.2). Our conclusions are summarized in Section 6.

2 Argument encoding in Movima

Movima basic clauses (i.e. the structures that are pragmatically unmarked and most frequent in spontaneous speech) are predicate-initial. There is no person agreement marking on the verb. In an intransitive clause, the argument can be expressed either lexically – i.e. by a referential phrase (RP; containing an article and a content word)⁵ – as in (1), or by a pronominal clitic, as in (2). It can also remain unexpressed, as in (3), where the omitted argument is represented as \emptyset .⁶

(1) *jayna wele:te us oveniwankwa*
 DSC climb_up ART.M boy
 ‘Then the boy climbed up.’ [HRR_120808-tigregente 056]

(2) *javu:buk--is*
 fly--3PL.AB
 ‘They fly.’ [HRR_120808-tigregente 017]

(3) *jayna tino:ka \emptyset jayna*
 DSC afraid DSC
 ‘They are afraid then.’ [HRR_120808-tigregente 292]

⁵ We do not use the term “noun phrase” for Movima because these phrases can also contain verbs (see e.g. Haude 2019a: 232).

⁶ The examples are followed by the the source index, which is usually composed of speaker acronym, date, text title, and number of annotation unit. Definiteness and tense are not obligatorily encoded in Movima, and the English translations follow the context from which the examples are taken. The letter *j* represents the phoneme /h/ in Movima orthography.

In transitive clauses, one argument is obligatorily overtly expressed, while the other one is not. Transitive clauses are identified as such by verb morphology (see below) and by their ability to contain two overt argument expressions. The obligatorily expressed argument occurs in a position internal to the predicate phrase (i.e., not separable from the predicate and prosodically linked to it), where it is usually realized as a pronominal enclitic, but it can also be represented by a referential phrase; for ease of exposition, only the pronominal enclitic is illustrated in (4)–(6) below. What interests us more in the present context is the other argument, which is external to the predicate phrase. This argument may be expressed lexically, as in (4), or as a bound pronoun, as in (5). It may also be left unexpressed, as in (6).

(4) *tan-na=is os ko'o*
 cut-DR=3PL ART.N.PST tree
 ‘They cut a tree.’ [HRR_120808-tigregente 186]

(5) *tay<a>ko=is--kisne*
 burn<DR>=3PL.AB--OBV:3F.AB
 ‘They burned her.’ [HRR_120808-tigregente 261]

(6) *jiwa-te-na=is ∅*
 come-DR-CO=3PL.AB
 ‘They brought (them).’ [HRR_120808-tigregente 192]

The above examples all represent the so-called “direct” construction, which is identified by the verb morphology (the suffix *-na* ‘DIRECT’ or its allomorph *<a>*). In the direct construction, the internal argument is the actor (A) and the external argument is the undergoer (P); in other words, direct transitive clauses align ergatively, because the P argument is encoded like S of the intransitive clause.

There is also an accusative construction in Movima, in which the verb is marked as “inverse”, i.e. the internal argument is P and the external argument is A. The inverse construction, translated as a passive, is exemplified in (7).

- (7) *tinok-poj-kay-a=us* *os* *merek* *rulrul*
 afraid-CAUS-INV-LV=3M.AB ART.N.PST big jaguar
 ‘He was frightened by the big jaguar.’ [HRR_120808-tigregente 076]

The ergative alignment of the direct and the accusative alignment of the inverse construction is also reflected in the syntax: Only the external argument, i.e. S of the intransitive, P of the direct transitive, and A of the inverse transitive construction can be relativized. This is illustrated in (8), (9), and (10), respectively. Therefore, independently of its semantic role, the external argument can be characterized as the privileged syntactic argument in Movima (Van Valin & LaPolla 1997; see Haude 2019a).

- (8) *is* *bi:jaw* *di’* *joy-chet*
 ART.PL old REL go-R/R
 ‘the old (ones) who went’ [HRR_120808-tigregente 184]

- (9) *joy-a-te=us* *is* *we:ye* *ena’* *di’* *vel-na=us*
 go-DR-CO=3M.AB ART.PL bull DUR.STD REL watch-DR=3M.AB
 ‘He took the bulls that he was taking care of.’ [PMP_HRR_etal_210908 237]

- (10) *usko* *eno:na* *di’* *vel-kay-a=i*
 COP:PRO.3M.AB authority REL watch-INV-LV=3PL
 ‘He was the authority who looked after them.’ [HRR_120808-tigregente 041]

In order to relativize the internal argument, the transitive clause must be converted into an intransitive one through the detransitivizing particle *kaw*, as in (11). Here, the direct-marked verb does not have an internal argument and the P argument is demoted to oblique (Haude 2019a; Haude In press).

- (11) *is* *bispa-n-ne* *di’* *juyeni*
 ART.PL wise-LN-CL.person REL person
di’, eney, *kaw* *bore:-na* *n-is* *alle=is*
 REL FILLER VALDEC defend-DR OBL-ART.PL relative=3PL.AB
 ‘the wise people who, er, defended their relatives’ [HRR_120808-tigregente 012-014]

The inverse construction is extremely rare. It represents only 6% of all transitive clauses with two third-person participants in our database. Therefore, in this and the following sections we will restrict the discussion to the data containing the direct, i.e. ergative construction. To signal that the P relation analyzed here is that of the direct construction, this relation is labelled P_{DR}. However, the availability of the inverse construction is a crucial property of the Movima grammatical system, since it means that a central factor for argument encoding in a transitive clause is not semantic role, but discourse topicality and animacy of the referent. The inverse construction will be included in the discussion in Section 5, and it will be shown that in Movima, rather than the correspondence between S and P, it is the correspondence between S and the argument expressed in the external argument position that plays a role for alignment patterns.

3 Lexical vs. nonlexical argument expressions

3.1 Referential devices in Movima

In Movima, it is straightforward to identify a referring expression. Referential phrases (RPs) always contain a determiner, which indicates humanness (human vs. non-human), natural gender for humans (m/f), number (singular vs. plural/mass), as well as presence vs. absence and past existence. The determiner is usually an article (alternatively a demonstrative), which, however, does not indicate definiteness (and the English translations of the articles in the examples given here are context-based). The forms of the article are listed in Table 1.

Table 1. Articles

	presential/ generic	absential (AB)	past (PST)
human male (M)	<i>us</i>	<i>kus</i>	<i>us</i>
human female (F)	<i>(i) 'nes</i>	<i>kinos</i>	<i>isnos</i>
non-human (N)	<i>as</i>	<i>kos</i>	<i>os</i>
plural/mass (PL)	<i>is</i>	<i>kis</i>	<i>is</i>

Third-person pronouns distinguish gender, number, and spatial location. Here, we only look at bound pronouns, i.e. pronominal enclitics. They are given in Table 2 without a clitic symbol because they can be either internally or externally cliticized (represented as = and --,

respectively). Free pronouns usually have a copula function (see (10) above), in which they form part of a different, non-basic syntactic construction (Haude 2019a: 233–235).

Table 2. Bound third-person pronouns

	presential	absential (AB)
human male (M)	<i>u'</i>	<i>us</i>
human female (F)	<i>(i)'ne</i>	<i>(i)sne</i>
non-human (N)	<i>a'</i>	<i>as</i>
plural/mass (PL)	<i>i'</i>	<i>is</i>

When externally cliticized to a preceding pronoun of third person or of first person plural inclusive, the third-person bound pronouns are preceded by a *k-* (see (5) above). This element may be thought to distinguish the external argument of a transitive clause from the S argument of an intransitive clause. However, the element *k-* only occurs when the preceding pronoun includes reference to a third person (Haude 2006: 279), and is, therefore, analyzed as an obviative marker. When the preceding pronoun encodes a first or second person singular or the second-person plural, as in (12), the *k-* is absent. In addition, in intransitive locative predicates such as *ney* ‘(be) here’ and *nosdé* ‘(be) there’, as in (13), the *k-* is present as well, maybe as a relict of an earlier spatial function (a *k-* also occurs in the absential forms of the article). Therefore, whatever the function of the element *k-* might be, it does not mark a categorial distinction between the external argument of a transitive and the S argument of an intransitive clause. This is important, since one result of the present study is that encoding of S and of the external argument of the transitive clause deviate on the discourse level even though they display identical formal and syntactic properties.

(12) *jiwa-té-na=nkweł--i'*

come-CO-DR=2PL--3PL

‘You (pl.) brought them.’

[CCT_120907_2 031]

(13) *nosdé--kis* *jayna*

over_there--OBV:PL.AB DSC

‘They are already over there.’

[EAO Alcanzar 005]

3.2 Grammatical relation determining lexical vs. non-lexical argument expression

DuBois (1987) found that cross-linguistically, the occurrence of two NPs in a transitive clause is rare and, furthermore, that the A argument in a transitive clause tends not to be expressed lexically (i.e., by a noun phrase). The P argument, in contrast, is often expressed lexically. These observations are confirmed by the Movima data. Only 61 (i.e. 4%) out of all transitive clauses in the corpus contain two RPs, of the type illustrated in (1). Altogether, the A_{DR} argument is expressed lexically, i.e. by an RP, in only 7% of all transitive direct clauses in the Movima corpus, as shown in Figure 1; P_{DR}, in contrast, is more often expressed lexically than non-lexically.

A further, central point in DuBois (1987) is that crosslinguistically, the S argument of intransitive clauses tends to behave in discourse like P, i.e. it is rather expressed lexically than not. This claim was refuted in a crosslinguistic corpus study by Haig & Schnell (2016), who show that the frequency of lexical expression of S is rather in between that of A and P than closer to that of P. To test this in the Movima corpus, 1744 basic intransitive clauses with verbal predicates were annotated for the expression of S as either an RP, as a (bound) pronoun, or as zero. In only 36% of this sample, S is lexically encoded, and in the remaining 64%, S is encoded by a reduced device. This result shows that there is a significant interaction between lexical/non-lexical encoding and the argument type ($\chi^2 = 894.7$, $df = 2$, $p < 0.001$). Hence, the ergative bias found by DuBois (1987) is not found in Movima. Rather, as can be seen in Figure 1, the lexical encoding of S falls in between the lexical encoding of A and that of P_{DR}.

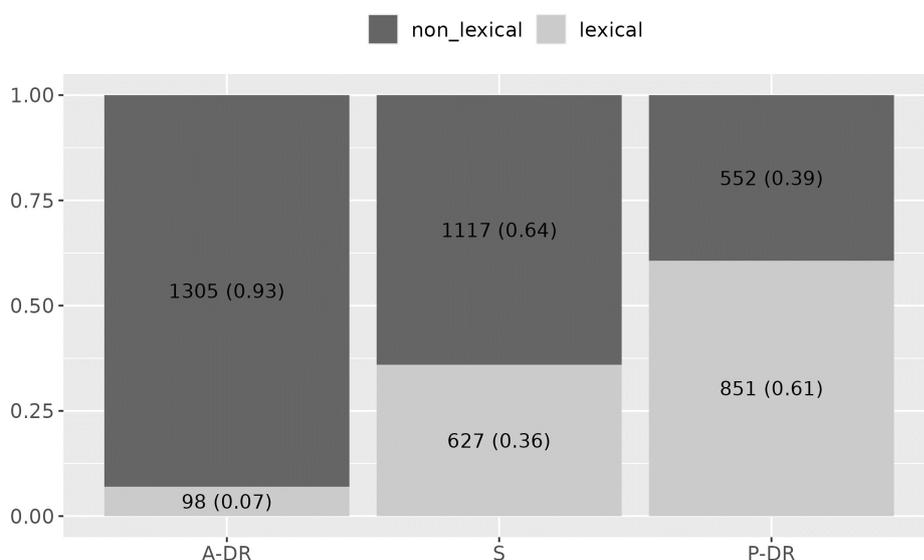


Figure 1. Proportions of nonlexical vs. lexical encoding of A_{DR}, S, and P_{DR}

Haig and Schnell (2016), who came to a similar result in their cross-linguistic study, have shown that animacy is a more important factor for the choice between lexical vs. nonlexical expression than grammatical relations: An argument representing an animate entity is more likely to be displayed non-lexically than an argument representing an inanimate entity. Since the patients of transitive events are typically inanimate, P arguments tend to be encoded lexically; since the agents of transitive events are typically animate, A arguments tend to be encoded non-lexically. The single argument of an intransitive clause, however, can be equally well animate or inanimate depending on the event described by the clause, and this may account for the intermediate status of S encoding when compared to that of A and P. We will turn to these factors in the following section.

3.3 Animacy determining lexical vs. non-lexical encoding

It appears as a cross-linguistic tendency that in spontaneous natural discourse, inanimate referents tend to be encoded lexically, while animate referents tend to be encoded non-lexically (see e.g. Dahl & Fraurud 1996; Haig & Schnell 2016). This is confirmed by the Movima data. Regarding transitive clauses, Haude (2014) has shown that in asymmetric scenarios (animates interacting with inanimates), animate referents are normally expressed by a pronoun in internal argument position (i.e. as A_{DR} or P_{INV}). And also in symmetric scenarios – e.g. when two animates interact and one of them must be encoded as the external argument –, an external argument referring to an animate entity is less often encoded lexically than an external argument referring to an inanimate entity.

Before going into details, it is important to point out that the crucial criterion in Movima is indeed animacy and not just humanness (+/- human was the criterion applied by Haig & Schnell 2016). The percentages for the expression of non-human animates, while occupying an intermediate status, are closer to those of human Ps than to those of inanimate Ps: Humans are encoded lexically in 46% of the cases, non-human animates are encoded lexically in 52% of the cases; inanimates, in turn, are encoded lexically in 71% of the cases, i.e. the proportion is much higher than in either of the animate categories. Therefore, it is justified to lump human and non-human animates together and contrast them with inanimates, as in Figure 2. The result shows that for animate P_{DR} referents, the proportion of lexical vs. non-lexical representation is around 50%, while an inanimate P_{DR} referent is more often expressed lexically than non-lexically (71% vs. 29%). The interaction between lexical expression and animacy is significant ($X^2 = 68.401$, $df = 1$, $p < 0.001$).

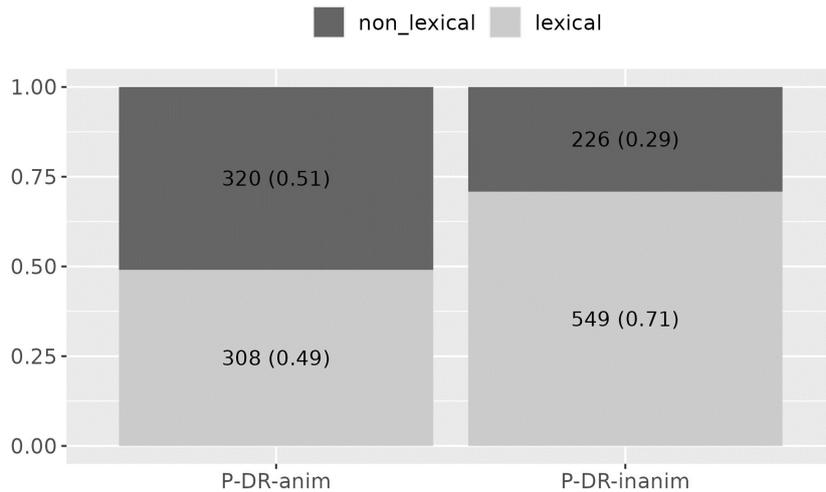


Figure 2. Nonlexical vs. lexical expression of animate vs. inanimate P_{DR}

Also in intransitive clauses, the patterning of lexical vs. nonlexical encoding of S goes along the line of animacy, not that of humanness. An S argument referring to a human is encoded lexically in 22% of the cases, and S arguments referring to non-human animates are encoded lexically in 43%, i.e. also in less than half of the cases. An S argument referring to an inanimate event participant, in contrast, is expressed lexically in 66% of the cases, i.e. more often than not. We consider that this, again, justifies lumping human and animate non-human S arguments together in order to contrast them directly with inanimates, as in Figure 3. The interaction between lexical expression and animacy is significant ($\chi^2 = 194.43$, $df = 1$, $p < 0.001$).

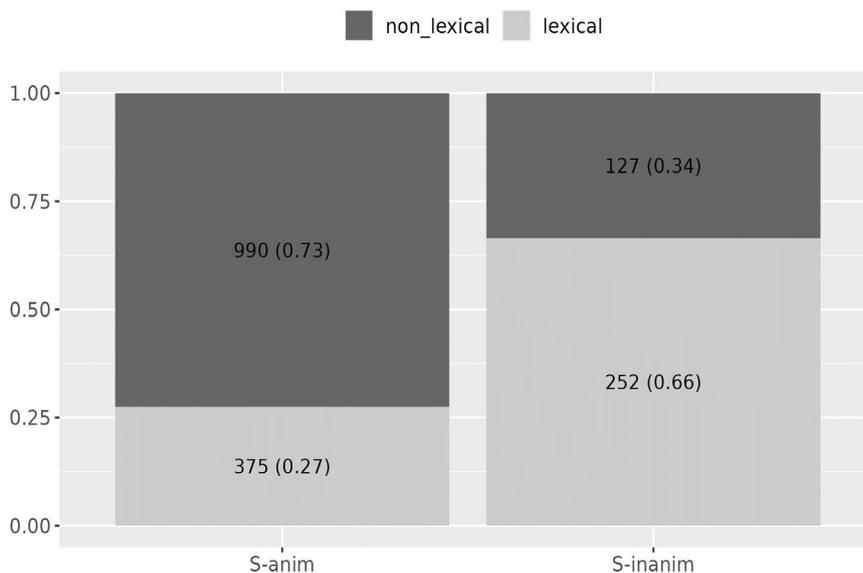


Figure 3. Nonlexical vs. lexical expression of animate vs. inanimate S

Figure 4 provides an overview of the quantities of the lexical vs. nonlexical expression of A_{DR} , P_{DR} and S ; P_{DR} and S are additionally split up according to animacy (this is not done for A_{DR} , as the A_{DR} counts only serve as a basis for comparison). The dashed lines separate the main argument types, i.e., A_{DR} , P_{DR} , and S .

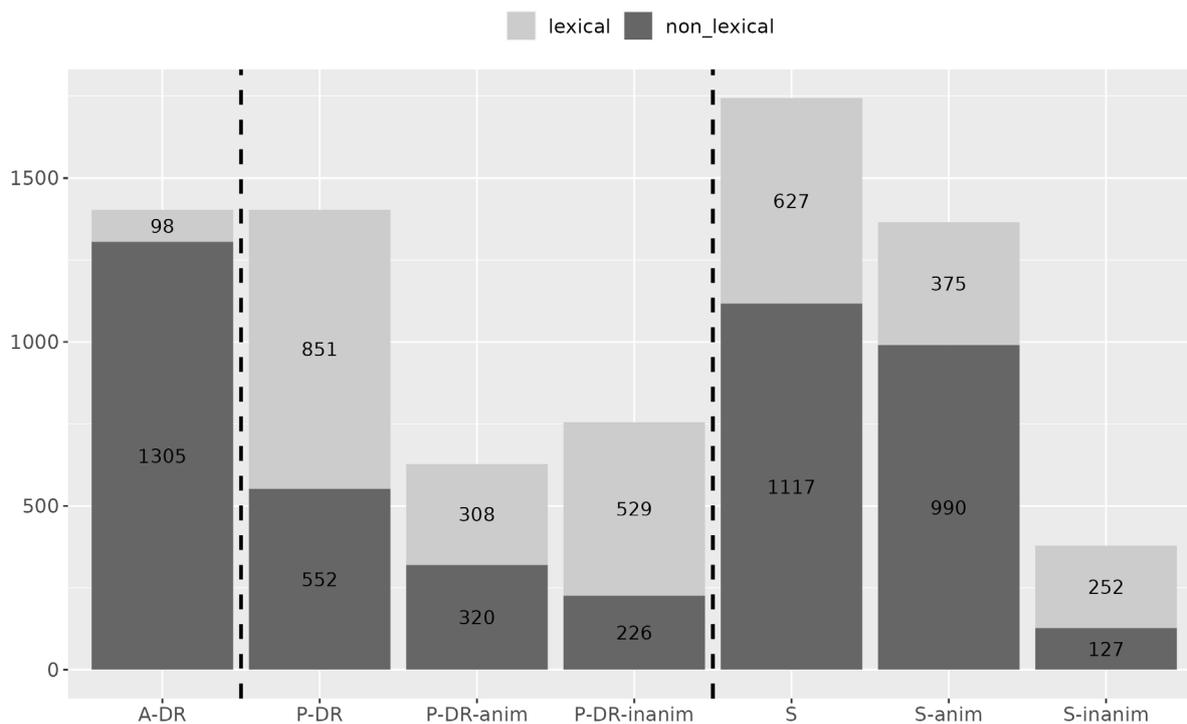


Figure 4. Quantities of lexical and nonlexical expression of A_{DR} , P_{DR} and S

Summing up, the non-A argument that is *least* likely to be expressed lexically is an animate S (expressed lexically in only 27% of the intransitive clauses with an animate S). In contrast, the non-A argument that is *most* likely to be expressed lexically is an inanimate P (expressed lexically in 70% of the transitive clauses with inanimate P s), as schematized in (14).

(14) Likelihood of (non-)lexical representation

S [+anim] → non-lexical (pronoun or zero)

P [-anim] → lexical (RP)

To assess the significance of the interaction between (non-)lexical representation and expression (S/P_{DR}) and animacy, we use R (R Core Team 2023) to generate a conditional inference tree via Monte Carlo simulations, using the party package (Hothorn, Hornik & Zeileis

2006). The decision tree displays how the predictors are statistically significant to predict the (non-)lexical representation in the data. Such a decision tree also provides a clear view of the hierarchy between the predictors. The decision tree classifier is based on binary recursive partitioning (Breiman et al. 1984). The decision tree repeatedly partitions the data to form homogeneous groups. First, the model tests the null hypothesis of independence between the predictors (i.e. animacy and expression) and the response (i.e. lexical representation). The strength of this association is measured by the p-value of a permutation test. The predictor with the strongest association with the response is used to split the data, and the process repeats until the data cannot be further split. In the experiment, we did not perform cross-validation. In other words, the entire dataset was used to generate the tree and assess its precision, since the algorithm conducts a test of statistical significance at each split. For the same reason, pruning of the tree was not required either.

Figure 5 shows the decision tree obtained when predicting (non-)lexical representation with animacy and grammatical relation. Both variables have a significant power for predicting (non-)lexical representation. The tree can be read as follows starting from the first node at the top: If the referent is inanimate (Node 1 to Node 2), it is more likely to be presented in a lexical way. On the other hand, if the referent is animate and the expression realizes as S (Node 1 to Node 3 and to Node 5), it has the lowest probability to be represented in a lexical way. If the referent is animate and the expression realizes P (Node 1 to Node 3 and to Node 4), the probabilities are almost equal between the lexical and the non-lexical expression.

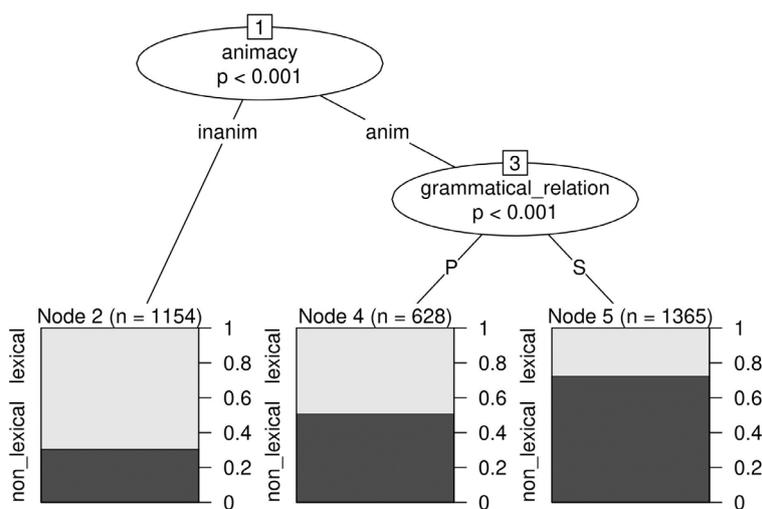


Figure 5. A conditional inference tree predicting lexical and nonlexical representation with information of animacy and grammatical relation

A likely explanation for the high amount of lexical expression of inanimate Ps is that inanimate participants in a two-participant event (which are usually patients rather than agents) tend to show a low discourse topicality, i.e., they are often newly introduced into the discourse by a lexical expression and then not referred to anymore (see Givón 1983). Likewise, the frequent non-lexical encoding of an animate S can be due to the high topicality of animate referents. However, these are not rules that are cut in stone. For instance, in the text from which most examples in this paper are taken, one inanimate referent (the hide of a mythological jaguar-woman) plays a central role. In the text passage reproduced in (15), the hide occurs as P_{DR} in every single sentence and is zero encoded most of the times. This is an indication that inanimate Ps tend to be encoded nonlexically as long as they are activated in the listener's mind (Chafe 1994).

- (15) a. *tan-na=is* *os* *ko'o*
cut-DR=3PL.AB ART.N.PST tree
'They cut a tree,'
- b. *bat-a-vos-et-a=is* *os* *bebetkwa,*
put-DR-CL.pole-APPL-LV=3PL ART.N.PST hide
'they put **the hide** on the pole,'
- c. *pil-a-le=is* \emptyset
wrap-DR-CO=3PL
'they wrapped **(it)** around,'
- d. *pil-a-vos-et-a=is* \emptyset *n-os* *ko'o:-vos*
wrap-DR-CL.pole-APPL=3PL OBL-ART.N.PST tree-CL.pole
'they wrapped **(it)** around the wooden pole,'
- e. *al-ka-chi-na=is* \emptyset *buka'a*
together-MLT-CL.carrying_pole-DR=3PL.AB DUR.MOV
'they carried **(it)** (on a pole) between them'⁷

⁷ The classifier *-chi* indicates that something is carried on a pole between two persons. Therefore, the omitted argument is interpreted as the hide rather than as the carrying pole.

f. *pek-na=is* *os* *bebetkwa,* *o:y-e* *buka'a*
 lift-DR=3PL.AB ART.N.PST hide two-CL.person DUR.MOV
 ‘They lifted **the hide**, two (moving) people,’

g. *jiwa-le-na=is* \emptyset
 come-CO-DR=3PL.AB
 ‘They brought **(it)**.’ [HRR_120808-tigregente 186-192]

4 Pronoun vs. zero

Having discussed the choice between full (lexical) and reduced (nonlexical) referential devices in Movima, we will now turn to the question: When is an argument expressed by a pronoun, like the S argument in (2) and the P_{DR} argument in (5), and when is it dropped, like S in (3) and P_{DR} in (6)?

While there has been quite some research on the alternation between lexical and non-lexical reference in discourse (see, in particular, Kibrik 2011), and the general principles of how speakers of different languages choose between one and the other seem to be fairly well established by now (Givón 1983; Chafe 1994; Haig & Schnell 2016), relatively little is known on the universal principles of the choice between different reduced referential devices, such as unstressed pronouns and zero anaphora (see, however, Schnell & Barth 2018). Both have in common that they can be used when the referent need not be overtly identified for the hearer. Some scholars (Ariel 1990; Givón 1983) have suggested that both pronominal encoding and lack of overt encoding are due to high discourse topicality, which is taken here to stand for high accessibility (Ariel 1990) or activation (Chafe 1994) of the referent. Givón (1983) starts out from the principle that the greater the cognitive effort that is needed to identify a discourse referent, the more material is employed; this entails that among the highly activated discourse referents, zero encoding is reserved for the most activated ones. However, as shown by Kibrik (2011), the choice between pronominal and zero encoding is more complex and often depends on the language. First of all, there are languages that do not allow zero argument encoding outside very specific syntactic conditions, e.g. English. Others, such as Japanese, have a strong preference for zero, while yet others, such as Mandarin Chinese, show quite some flexibility between zero and pronominal argument encoding, the choice being probably discourse based

(Kibrik 2011: 163). Kibrik suggests, however, that also in these languages, one of the alternative reduced referential devices may be the default, while the other one is “drafted in special situations” (Kibrik 2011: 163), and its choice can depend on the semantic role of the argument or on the larger syntactic construction, e.g. coordination or verb serialization.

Movima is one of the languages in which the principles of choice between pronominal and zero reference are not easy to pin down. Taken together, 41% of all nonlexical S and P_{DR} expressions are pronouns and 59% are zero. In the following sections we will see, however, that P_{DR} is far more often zero than S (4.1), and that inanimate referents remain far more often zero than animates (4.2). A preliminary look at continuous discourse (4.3) indicates that this distribution may be due to discourse topicality, discourse topics being generally encoded by pronouns.

4.1 Grammatical relation

As in the case of lexical vs. nonlexical referential devices, also regarding the choice between pronominal and zero expression, we observe a difference between S and P_{DR}. Figure 6 shows that P_{DR} is more often unexpressed (78% of the 546 direct transitive clauses without a lexical P) than expressed by a pronoun. In contrast, S remains unexpressed in only 49% of the 1072 intransitive clauses without an argument RP. In short, a non-lexical P_{DR} tends not to be expressed at all, while a non-lexical S is expressed by a pronoun about just as often as it remains unexpressed. The interaction between expression and argument type is significant ($X^2 = 124.32$, $df = 1$, $p < 0.001$).

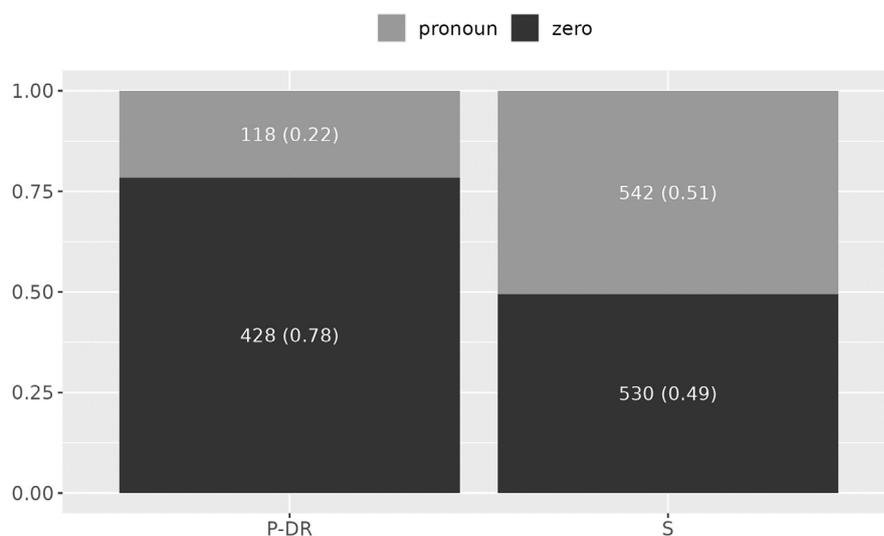


Figure 6. Distribution of pronoun and zero across P_{DR} and S

One possible reason for the frequent omission of P_{DR} could be that the co-occurrence of two pronominal clitics is avoided, corresponding to the “repeated morph constraint” (Menn & MacWhinney 1984).⁸ Recall from Section 2 (also Haude 2014) that the internal argument – in the case of the direct construction, A – in a clause with two third-person arguments is minimally encoded by a pronoun. In most of the third-on-third clauses in which P_{DR} is represented by a pronoun, therefore, it is directly adjacent to another third-person pronoun, as in (5) above. In Movima, the sequence of two bound pronouns apparently leads to an unclear prosodic situation, which is treated inconsistently by speakers (Haude 2006: 102). Normally, only the internal enclitic participates in a word’s stress pattern, which means that the penultimate syllable is stressed (Haude 2006: 46–47). When an external enclitic is added to such a complex host, sometimes the entire resulting unit is treated like a prosodic word, i.e. with one unstressed final syllable; and sometimes only the host with the internal enclitic is treated like a prosodic word, which means that both the internally and the externally cliticized pronouns are unstressed, and two unstressed final syllables are highly uncommon in Movima. Therefore, dropping the second clitic can be a way to avoid this conflict.⁹

Apart from that, we hypothesize that the frequent non-pronominal expression of P is due to the fact that P participants are typically not discourse topics; when they are, they are encoded as the internal argument, P_{INV} (see Section 5), which is typically expressed as a pronoun. An S participant, by contrast, can just as well be topical as not; when topical, and especially when animate, it tends to be encoded as a pronoun (see 4.3).

4.2 Animacy determining pronominal vs. zero encoding

Arguments with inanimate referents are most likely to remain unrealized, independently of their grammatical relation (S or P_{DR}). Figure 7 shows that in the case of S, inanimates remain unexpressed in 79% of the intransitive clauses without a lexical argument, while an animate S is expressed by a pronoun in over half (54%) of its occurrences, i.e. more often than an

⁸ We thank Stavros Skopeteas (p.c.) for pointing us to this phenomenon.

⁹ The hypothesis that the combination of two third-person pronouns is avoided can only really be tested, however, by taking into account verbs involving a first-person singular internal argument, which is encoded as = \emptyset and therefore, does not create a clash between two overt pronouns. This goes beyond the scope of the present study.

inanimate S (21%). The interaction between expression and animacy in S is significant ($X^2 = 47.688$, $df = 1$, $p < 0.001$).

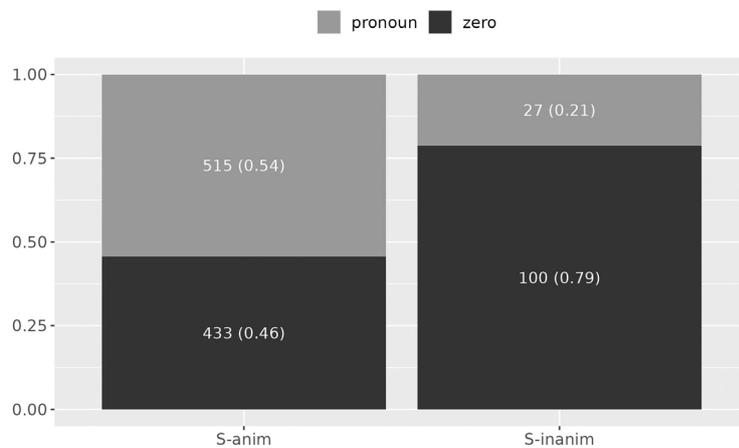


Figure 7. Distribution of pronoun and zero for animate vs. inanimate S

An animate P_{DR} , in contrast, is expressed by a pronoun in less than a third (29%) of the cases, i.e. less often than an animate S, but still more often than an inanimate P_{DR} , as shown in Figure 8. Thus, for P_{DR} , the pronominal expression is clearly a marked choice, but also here, animates are more likely to be encoded by a pronoun (29%) than inanimates (12%). The interaction between expression and animacy in P is significant ($X^2 = 22.246$, $df = 1$, $p < 0.001$).

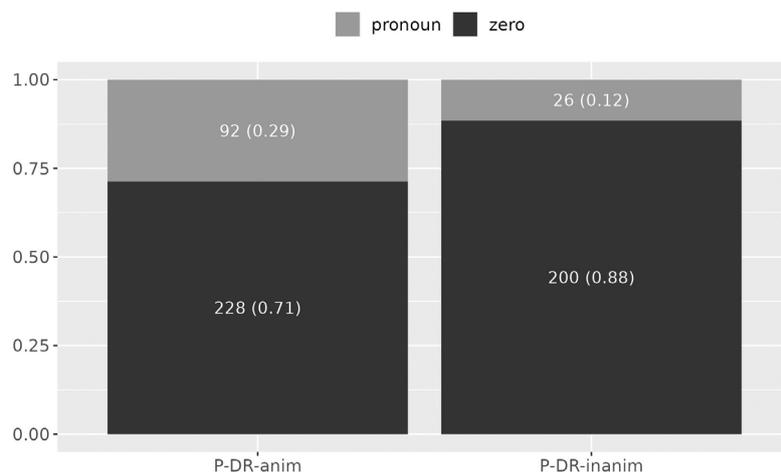


Figure 8. Distribution of pronoun and zero for animate vs. inanimate P_{DR}

To give an illustration of pronominal encoding of an animate P_{DR} , which contrasts with the zero encoding of an inanimate P_{DR} shown in (15) above, example (16) shows how a P_{DR} pronoun is used in a sequence of directly adjacent sentences.

- (16) a. *way-na=is--ki'ne*
 grab-DR=3PL.AB--OBV:3F
 ‘They grabbed her,’
- b. *jayna joy-a-le=is--ki'ne*
 DSC go-DR-CO=OBV:3PL.AB
 ‘then they took her with them,’
- c. *lap-na=is--ki'ne n-os o:ra,*
 bathe-DR=3PL.AB--OBL:3F OBV-ART.N.PST hour
n-os ney o:ra n-os imayni.
 OBL-ART.N.PST DEF hour OBL-ART.N.PST night
 ‘they bathed her at that time, at that time of night.’
 [EAO_Escape Marivel 076-079]

The role of animacy and grammatical relation in the encoding of S and P_{DR} arguments is represented graphically in Figure 9. It can be seen that animates are more likely to be encoded as pronouns than inanimates. Moreover, an animate S is slightly *more* often encoded as a pronoun than not; an inanimate P_{DR}, in contrast is hardly ever encoded pronominally.

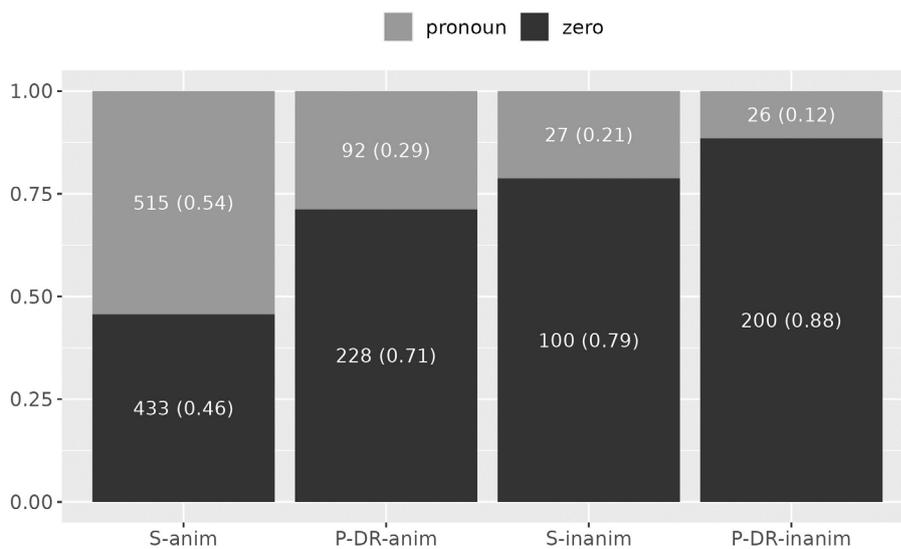


Figure 9. Proportional distribution of pronoun and zero for animate vs. inanimate S and P_{DR} referents

Figure 10 provides an overview of the number of pronoun and zero encoding in terms of animacy and grammatical relation. The dashed lines separate the main argument types, i.e., A_{DR} , P_{DR} , and S . P_{DR} and S are additionally split up according to animacy (this is not necessary for A_{DR} , which may not remain unexpressed in any case).

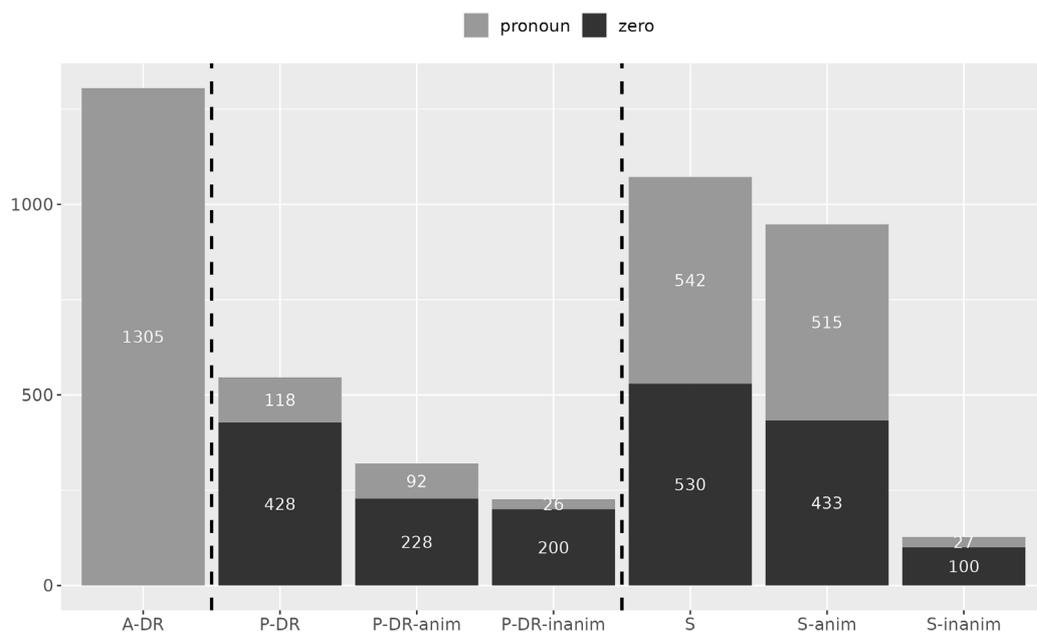


Figure 10. Quantities of pronoun and zero argument encoding of animate vs. inanimate referents

To further evaluate how grammatical relation and animacy can predict pronoun/zero encoding, we use again a conditional inference tree via Monte Carlo simulations. Figure 11 shows the decision tree obtained when predicting pronoun/zero encoding with animacy and grammatical relation. Both variables have a significant power for predicting pronoun/zero encoding. The tree can be read as follows starting from the first node at the top: If the argument is S (Node 1 to Node 2) and if the referent is animate (Node 2 to Node 3), it has the lowest probability to be encoded as zero. On the other hand, if the argument is P (Node 1 to Node 5) and if the referent is inanimate (Node 5 to Node 7), it is almost always encoded as zero. In general, we observe that if the referent is inanimate and/or P , it is more likely to be encoded as zero. In the tree, S and P are differentiated first because the animacy distribution is different between them, i.e., the proportion of zeros is higher in P s. After separating the data based on S/P , the tree then re-splits by animacy. If we were to do the reverse, i.e., a first split based on

animacy followed by a second split by S/P, we wouldn't get the same level of accuracy since the distribution of pronouns and zeros based on S/P does not vary as much within animates and inanimates.

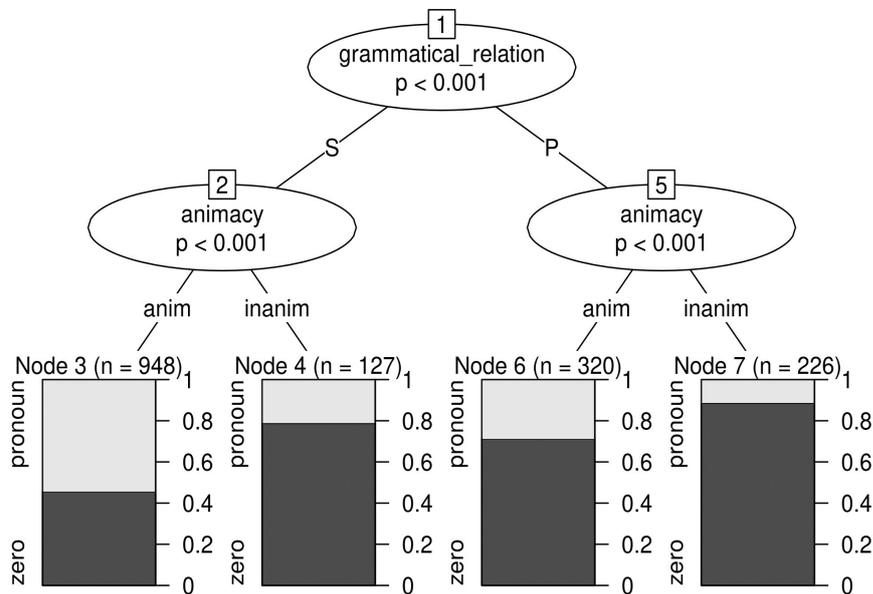


Figure 11. A conditional inference tree predicting pronoun and zero encoding with information of animacy and grammatical relation

If we assume that animate referents are by default more topical in discourse than inanimate ones, e.g. because discourse protagonists are usually animate, the finding that inanimate referents are more often zero encoded seems to contradict the generalization made by Kibrik (2011: 165) (based on earlier studies, such as Ariel 1990, Givón 1983): “Whenever an activation-based distribution between zero and pronouns is suspected in a certain language, it is always the case that a higher degree of activation is attributed to zero and a lower degree to pronouns, and never vice versa.” A possible explanation for the preference for pronominal encoding of animate referents in Movima is suggested in Section 5.2. In the following section, we will give an impression of how the near-equal distribution of pronominal and zero encoding of an animate S appears in continuous discourse.

4.3 Referent tracking

As we saw above, an animate S argument shows the greatest tolerance for being encoded by a pronoun, and the distribution of pronominal and zero encoding of S in the corpus is 54% vs.

46%, respectively. Therefore, it can be expected that especially regarding animate S, also discourse factors play a role in the choice of the encoding device.

A look at a narrative text (376 clauses) helps to get an impression of how the system may work. The distribution of zero and pronominal animate S arguments in this text show a stronger bias towards pronominal encoding than that found in the overall corpus: Of 87 nonlexical S arguments representing animate referents, 69 are expressed by a pronoun and only 18 are expressed as zero. The 18 zero expressions are distributed over 4 referents, which means that there is an average of 4.5 zero expressions per animate S. The 69 pronominal expressions are used for 13 referents, which means that in an average, each animate S referent is expressed 5.3 times as a pronoun; see Table 3.

Table 3. The nonlexical encoding of animate S arguments in one text

	animate S	% of anim S	referents	mean per referent
zero	18	21%	4	4.5
pronoun	69	79%	13	5.3
total	87	100%	17	

The most frequently mentioned referent in this text is a jaguar-woman, a mythological character oscillating between the appearances of a human and a jaguar. This protagonist is mentioned 118 times in the entire text (non-core-argument mentions included, such as in a possessor or oblique role). There are 31 nonlexical realizations of this referent when it functions as S. Of these, only ten are zero and 21 are pronouns. An illustration of the pronominal representation of this referent in S function in several consecutive clauses is provided in (17). As can be seen, the pronoun appears in every single clause, which hints at the topical status of this argument. (The neuter form of the pronoun indicates that the referent is not human, despite its description as a woman and the corresponding translation.)

- (17) a. *ka<ma:~>may--as* *lat* *jayna*
scream<MD~>--3N.AB EV DSC
‘She screamed then, they say,’
- b. *tempantebaycho--as,* *jayna* *tok~tok--as,*
not_endure--3N.AB DSC MD~fall--3N.AB
‘she couldn’t support (it), then she fell,’

c. *polkaba:ba--as*

writhe--3N.AB

‘she tossed and turned.’

[HRR_120808-tigregente 235–236]

An even more pronounced picture emerges for the second-most frequently mentioned protagonist, a boy who hunts the jaguar and from whose perspective the story is told. This referent is mentioned 56 times, of which 17 times in the S relation. All these 17 mentions are pronominal, and there is no zero S representing this referent at all.

On the basis of these data, it must be concluded that the pronominal encoding of an animate, topical referent in the S relation is the default, and zero encoding of an animate topical S is the marked choice. The question to be asked, then, is: When is an animate referent in the S relation zero-encoded? On the basis of the few text examples we have here, only a tentative answer can be given, which is illustrated by (18). Here, we see that the clauses in which the referent is not overtly expressed (b., d., and f.) are interspersed with clauses containing overt expressions of this referent, such as an RP in (18a), a demonstrative in (18c), and a bound pronoun in (18e).

(18) a. *jayaw-we* *os* *rey* *kwe:ya*
beautiful-CL.person ART.N.PST EPIST woman
‘The woman was beautiful,’

b. *ban-ne* \emptyset *ba:ra* *ja'*
plain-CL.person all just
‘(she) (was) all naked,’

c. *kolrok* *ilo:ni,*
DEM.N.RETR walk
‘she went moving away,’

d. *jo'yaj* \emptyset *n-os* *kokotkwa* *lat,*
arrive OBL-ART.N.PST pond EV
‘she arrived at a pond,’

- e. *doksi--as* *n-os* *lakapba*
squat--3N.AB OBL-ART.N.PST earth
‘she squatted on the ground,’
- f. *doksi* \emptyset , *jayna* *loj-ba:kwa* \emptyset
squat DSC wash-head
‘(she) squatted then, (she) washed her hair.’ [HRR_120808-tigregente 100–103]

Examples like (18) suggest that zero encoding is more likely to occur only in between overt (i.e. non-zero) mentions that help identify the referent, while pronominal encoding is used for referent tracking proper, i.e. in longer sections featuring one referent continuously. If this is true, then the use of zero encoding can be reconciled with the assumption that the more activated a referent is, the less material is necessary for referring to it: There is probably no higher activation of a referent than when it is often mentioned overtly, and this allows its being dropped between several overt mentions. More systematic research in this direction is needed, which should include counts of referential expressions in continuous discourse (as proposed by Givón 1983) in a larger amount of texts.

4.4 Comparing lexical, pronominal and zero argument encoding

Given what we now know about lexical vs. nonlexical and pronominal vs. zero encoding, it is now possible to compare the three encoding devices. The number of occurrences as well as the proportions of each expression for P_{DR} and S is represented in Figure 12.

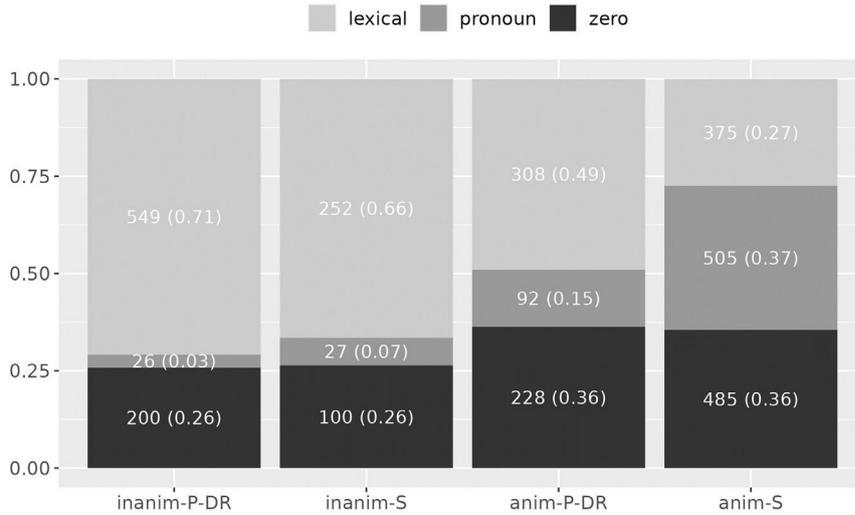


Figure 12. Lexical, pronominal, and zero argument encoding of P_{DR} and S according to animacy

The data show that, as was already demonstrated in Section 3, non-A_{DR} arguments with an inanimate referent are most likely to be encoded lexically, while arguments with an animate referent, and here especially S, have a preference for nonlexical encoding. What is interesting to see here is that the preference for lexical encoding goes along with a dispreference for pronominal encoding: The more likely an argument is to be encoded lexically, the less likely it is encoded by a pronoun. Put differently, if these arguments (i.e. all inanimates, but to some degree also animate P_{DR}) are not encoded lexically, they are more likely to be not overtly expressed at all than to be expressed by a pronoun (see (15) as an example of this situation). This finding is very roughly schematized in (19).

(19) Encoding of P_{DR} and inanimate S:

RP → zero → pronoun

Here, again, a possible explanation is that if a nontopical referent is referred to several times in a continuous text, there will be more interchange between lexical and zero reference rather than referent tracking through pronouns. However, this hypothesis needs to be tested in further research.

5 Topicality shaping grammar in Movima

We will now get back to the fact that in the domain of reduced referential devices (pronoun and zero), S is more readily encoded by a pronoun than P_{DR} (see Figure 6) despite the shared morphosyntactic properties of these two grammatical relations. Does this finding suggest that while S and P_{DR} display syntactic ergativity (see Section 2), the ergativity is not reflected as “discourse ergativity” (DuBois 1987) in this language?

We will show, first of all (5.1) that the notion of ergativity, in which S aligns with P, is only partially useful as an explanation of the Movima pattern. Transitive clauses in Movima are not primarily organized according to the semantic roles (A or P) of the arguments, but according to the arguments’ referential properties. Secondly, we will show that indeed, the behaviour in discourse of S is at least as similar to that of A_{DR} as it is to that of P_{DR} (5.2). This is because the A_{DR} relation, which is the default relation for the topical agent in a transitive clause, is always overtly expressed, and usually expressed by a pronoun (see Section 2). The frequent use of pronouns to encode animate S arguments, therefore, matches the referent-tracking property of A.

5.1 Topicality as a basis for alignment

To get a more complete picture of how the system works, it is necessary to turn to the inverse construction, which was not treated in the study presented above. Recall from Section 2 that in the inverse construction, P_{INV} is encoded in the internal and A_{INV} in the external argument position. In the third-person domain, the choice between the two constructions is based on the relative animacy and discourse topicality of the referents (Haude 2014). Since A is usually higher in the animacy hierarchy and also more topical in discourse, and since the direct construction can be used more flexibly and can therefore be considered the default construction, the number of inverse constructions in the corpus is quite low: According to the most recent counts, on which this study is based, only 6% of all annotated basic transitive clauses in the corpus (83 out of 1486) are inverse.

When these inverse clauses are taken into account, it turns out that the proportions of lexical and nonlexical encoding of A_{INV} are identical with those of P_{DR} of the direct clauses (see Figure 1): 61% of all A_{INV} arguments are encoded lexically, the rest nonlexically – just like P_{DR}. Table 4 shows the numbers and proportions of the different expression types of internal and external arguments in both transitive clause types (i.e. direct and inverse) taken together: All that has been said above about the expression of P_{DR} is also true of the encoding

of A_{INV} , i.e. of both types of external arguments. Hence, a comparison between S and the external argument of any transitive construction (i.e. P_{DR} or A_{INV}) would yield the same results as that between S and P_{DR} we carried out above.

Table 4. Encoding of internal (A_{DR} , P_{INV}) and external (P_{DR} , A_{INV}) arguments in all transitive clauses

	internal argument (A_{DR} , P_{INV})		external argument (P_{DR} , A_{INV})	
lexical	102	7%	908	61%
pronominal	1384	93%	122	8%
zero	n.a.	n.a.	456	31%
total	1486	100%	1486	100%

We conclude from this that in Movima, it is not primarily the semantic role (A or P) that determines the lexical or nonlexical expression of an argument. If P favoured lexical and A non-lexical encoding, as argued by DuBois (1987), then we would expect relatively more inverse constructions with a lexical internal argument (P_{INV}) and a zero or pronominal external argument (A_{INV}). Rather, in Movima, the arguments are first assigned their syntactic position (internal or external) according to their relative position in the referential hierarchy (animacy, topicality), with the higher-ranking argument placed in the internal position (Haude 2014), where it is by default expressed pronominally (i.e. in 93% of the corpus). The referentially lower-ranking argument is placed in external position, where it is most often expressed lexically and least often expressed by a pronoun (see the schema in (19)). The existence of two transitive constructions in Movima makes it clear that in this language, the encoding preferences of A and P are a side effect of their different status in terms of referential prominence, i.e. animacy and discourse topicality.

5.2 Comparing S and A_{DR} : Topicality dissociated from syntactic privileges

As we have seen, a Movima transitive clause is shaped in such a way that the less topical argument aligns syntactically with the S argument of the intransitive clause. This “external” argument (P_{DR} , A_{INV}) is syntactically privileged in that it has exclusive access to relativization (see Section 2). By contrast, there is no sign that the internal argument (i.e. A_{DR} , P_{INV}) has any syntactic privileges (Haude 2019a). On these grounds, the external argument can be considered the syntactic subject in a Movima transitive clause. Since direct transitive clauses constitute

the most frequent and default transitive clause type, this means that Movima has a predominantly ergative syntax.

However, there is one property of canonical subjects (Keenan 1976: 318–319) that does not apply to the external argument of a Movima transitive clause: that of encoding the discourse topic. In a Movima two-participant event description, the external, i.e. syntactically privileged argument encodes the event participant that is *not* the discourse topic. The discourse topic, which is typically animate and most often an agent, is by default encoded by a pronoun in internal argument position. The inverse serves precisely the purpose of keeping up this pragmatic hierarchy when the topical referent is the patient. Since the internal argument is obligatorily overtly realized, topical referents are consistently overtly encoded in transitive clauses. This leads to sequences like (20), in which the discourse topic (the jaguar-woman) is constantly overtly expressed by the pronoun =*as* (similar to the pronoun =*is* in (15) above).

- (20) *ew-a-popojmo=as* \emptyset , *low-a-mot-a=as* \emptyset
 grab-DR-neck=3N.AB pull-DR-CL.bush=3N.AB
nosdé, *joy-a-le=as* \emptyset , *koj-a-mot-a=as* \emptyset
 over_there go-DR-CO=3N.AB put_in-DR-CL.bush-LV=3N.AB
n-os *duyup-mo* *lat daya* ‘
 OBL-ART.N.PST thicket-CL.bushEV DUR.NSTD
 ‘It grabbed (him) by the neck (lit. “neck-grabbed”), it pulled (him) over there, it took (him), it put (him) in the bush over there.’ [HRR_120808-tigregente 081]

The pattern in (20) is strikingly reminiscent of sequences like (17) above, where the S argument is overtly expressed in several subsequent clauses, even though zero encoding would have been possible as well. The relatively high frequency of pronominal S expressions encoding animates reflects a pragmatic association between a discourse topic in a single-participant event description and the topical referent in a two-participant event description.

Thus, pronominal rather than zero argument encoding seems to be the most important referent-tracking device in Movima (see 4.3). The frequency of pronominal vs. zero encoding of animate S arguments reflects an intermediate status of the S argument as being syntactically aligned with P_{DR}, on the one hand, and pragmatically compatible with A_{DR}, on the other. The quantitative data confirm that there is a discrepancy between the syntactic and the discourse-pragmatic status of the arguments of a transitive clause (see Haude 2019b): The syntactically privileged argument is not the one that encodes the discourse-topical referent.

6 Conclusion

In this paper we investigated the distribution of different encoding patterns of clausal arguments in Movima in a sample of altogether 3230 basic clauses (1486 transitive, 1744 intransitive) with third-person arguments. In a basic clause, the argument(s) can be expressed lexically (i.e. by a referential phrase, RP) or pronominally (i.e. by a pronominal enclitic). In addition, zero encoding is possible for the grammatical relations S, P of the direct transitive clause (P_{DR}), and A of the inverse transitive clause (A_{INV}). For most of the study we concentrated on direct transitive clauses, which show an ergative pattern and which are by far more frequent in discourse (94% of all third-person transitive clauses).

When only these direct transitive clauses are considered, the choice between the lexical and the nonlexical expression of arguments in transitive clauses seems to be linked to grammatical relation, similar to what is predicted by DuBois (1987): A is expressed nonlexically and P is expressed lexically. However, this is only an epiphenomenon of the fact that A_{DR} typically encodes animate referents, and animates tend to be encoded nonlexically (see Haig & Schnell 2016). In line with this, the lexical vs. nonlexical encoding of S ranges in between the lexical vs. nonlexical encoding of A and P, since S encodes animate and inanimate referents likewise. Thus, there is no ergative bias in Movima discourse patterns, and this study confirms the finding by Haig & Schnell (2016) that S and P do not *per se* align in terms of lexical vs. nonlexical encoding preferences.

Also regarding the alternation between two reduced referential devices in Movima, namely clitic pronouns and zero, there is no direct behavioural affinity between P_{DR} and S. P_{DR} is most frequently zero-encoded, independently of animacy (see Figure 8). S, in contrast, is slightly more often represented by a pronoun than by zero when animate, but less often represented by a pronoun when inanimate (see Figure 7). We argue that this affinity between an animate S and A_{DR} is due to the fact that especially animate S referents can be discourse topics, which are then treated like A_{DR} (or P_{INV} , for that matter), i.e. encoded by a pronoun, and that pronouns are the main reference-tracking device in Movima. P_{DR} , in contrast, is usually not a discourse topic, since in that case it would be encoded as P_{INV} . Furthermore, when P_{DR} is expressed as a pronoun in a third-person scenario, it is directly preceded by an A_{DR} pronoun, and we suppose that the juxtaposition of two pronouns tends to be avoided.

The hypothesis that pronouns are the main reference-tracking device in Movima provides a possible explanation for the fact that arguments which are most likely to be expressed lexically, i.e. P_{DR} and inanimate S, tend towards zero rather than pronominal encoding when

they are expressed non-lexically. It can be supposed that these referents are low in discourse topicality and therefore, are not likely to be tracked throughout longer discourse passages. However, a different kind of study, based on continuous discourse, is needed to confirm this.

Symbols and abbreviations

= internal cliticization; -- external cliticization; < > infixation; ~ reduplication; 2=second person; 3=third person; AB=absential; APPL=applicative; ART=article; CAUS=causative; CL=classifier; CO=co-participant; COP=copula; DEM=demonstrative; DR=direct; DSC=discontinuous; DUR=durative; EPIST=epistemic marker; EV=evidential; F=feminine; INV=inverse; LN=linking nasal; LV=linking vowel; M=masculine; MD=middle; MLT=multiple event; MOV=moving; N=neuter; NSTD=nonstanding; OBL=oblique; OBV=obviative; PL=plural; PRO=free pronoun; PST=past; R/R=reflexive/reciprocal; REL=relativizer; RETR=retreating; STD=standing; VALDEC=valency decreaser.

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