Managing expectations: Referential expectedness and uncertainty in a non-configurational language

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One of the central goals of human language is to convey intended messages successfully to the addressee. However, communication inherently involves uncertainty or unexpectedness which hinders this delivery. Different languages have different strategies to mitigate this uncertainty. In this article, we explore the strategies used in Murrinhpatha, a non-configurational Australian Aboriginal language. We argue that Murrinhpatha speakers utilise the language's syntactic flexibility to manage referential uncertainty and unexpectedness in communication. Highly unexpected referents tend to be expressed preverbally, while expected referents which need to be 'reinforced' are usually expressed postverbally, and those which are uniquely expected are usually syntactically omitted. We also argue that expectation and uncertainty provide a more convincing account of the Murrinhpatha evidence compared to an alternative account of cognitive accessibility. Our findings shed new light on several aspects of non-configurational syntax, including pragmatic salience and newsworthiness, and the functional distinctions between postverbal constituents and syntactic omission.

One of the central goals of human language is to convey intended messages successfully to the addressee. Thus, when shaping utterances, speakers often take addressees' needs into account (Chafe, 1994; Clark & Murphy, 1982; Ferreira, 2019; Givón, 1983a; Grice, 1975; Gundel et al., 1993). This addressee orientation is at work in speakers' choice between referential expressions, as demonstrated by two major findings: first, the reduction of the use of third-person pronouns in the presence of competing referents in favour of lexical NPs (Arnold et al., 2000; Karmiloff-smith, 1985; for an overview see Arnold & Griffin, 2007). Second, conversely, speakers prefer pronouns over lexical NPs if they believe that the addressee is relatively less uncertain about the forthcoming referents (Tily & Piantadosi, 2009). These findings suggest that referential choice is exploited to manage referential uncertainty, a situation where addressees are "unable to select a unique referent for an anaphor from multiple candidates" (Nieuwland & Van Berkum, 2008:606; see also Kibrik, 2011).[2]

The body of research cited above tends to focus on English and other languages which show relatively rigid clausal syntax, demanding a constituent for each argument on the one hand, and relatively fixed constituent order which encodes grammatical relations on the other. This naturally opens the question of how referential uncertainty is managed in languages that do not meet these conditions; in particular, 'non-configurational' languages where constituents are both flexibly ordered and omissible (Hale, 1983), may present a different kind of evidence for referential uncertainty management.[3] Despite the extensive discussion of flexible constituent order and argument omissibility in non-configurational languages (see §2), there has been relatively little discussion of how these two characteristics are connected with referential uncertainty. In this article, we use expectation and uncertainty as a lens to study flexible constituent order and argument omissibility in Murrinhpatha, a non-configurational Australian Aboriginal language (Non-Pama-Nyungan; Southern Daly) spoken in and about Wadeye in the Northern Territory. This framework, we argue, provides a convincing explanation of basic clausal patterns

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[2] In the literature the term referential ambiguity or conflict is often used instead. In this article, we adopt the term referential uncertainty in order to highlight its relationship with the field of probabilistic pragmatics (Franke & Jäger, 2016).
[3] Flexible constituent order and argument omissibility (null or zero anaphora) constitute what Reinöhl (2016:54) calls 'low-level' non-configurationality. Hale's (1983) earlier formulation of non-configurationality also includes discontinuous NPs, though we do not discuss it in this article.

in this language. In particular, we will argue that referential uncertainty explains both preverbal and postverbal positions in a clause, while the latter has received relatively little attention in the non-configurationality literature (Beeching & Detges, 2014:2; Poletto & Bocci, 2016:649).

As a non-configurational language (e.g., Bresnan & Mchombo, 1987:742; Hale, 1983; Nordlinger, 2014:228), Murrinhpatha does not use constituent order to encode grammatical relations, and arguments are omissible in this language (Blythe, 2009:97; Mansfield, 2019:4; Walsh, 1976). Furthermore, there is no regular case-marking of core grammatical relations (Nordlinger, 2011:717). A recent experimental study shows that Murrinhpatha constituent order is indeed highly variable when speakers are invited to describe a scene with no preceding discourse context, suggesting that there is no 'basic constituent order' in this language (Nordlinger et al., 2022:214). These findings are complemented by the current study, where we focus instead on the ways in which constituent order, and the omission of nominal constituents, are shaped by discourse context.

While Murrinhpatha syntax does not directly encode grammatical relations, Murrinhpatha verbs are richly inflected and may index one or more participants of the clause. Nonetheless, this inflectional information is only sufficient to uniquely identify first- and second-person referents (1a). The (highly frequent) third-person category leaves open a wide choice of possible referents, and third-person singular object is not morphologically marked (1b) (Mansfield, 2019:121). However non-singular third-person referents do generally have overt marking for number and/or gender (1c). Thus, verbal inflection provides clear information when speech-act participants are involved in an event, but for other referents it provides only partial information in narrowing down the field of potential candidates. This will become clearer in our illustrative examples below, which mostly involve third-person referents.

1

    a.   *nga-nhi-rtiwak-nu*[4]
           1SG.SBJ.PIERCE.IRR.-2SG.OBJ-follow-FUT
           'I will follow you.'

    b.   *dam-rtiwak*
           3SG.SBJ.PIERCE.NFUT-follow
           '(She/he/it/somebody) is following (she/he/it/somebody).'

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[4] Murrinhpatha verbs exhibit extensive morpho-phonological juncture effects, such that for example *nga-nhi-rtiwak-nu* is pronounced as *nganhiriwaknu*, with lenition of a medial stop (for details see Mansfield 2019). In this study we show just the morph-by-morph constructions.

c. *pubam-pun-ngkardu-neme*
    3NS.AFFECT.NFUT-3PL.OBJ-see-PAUC.M
    'They (paucal, masc.) see them (pl.)'[5].

In clauses like 1b and 1c, NPs may be required to provide further information about the third-person participants, though as we will see, this depends crucially on the available candidate referents, and whether they match any number and gender features that are specified. It is the ordering and omission of such NPs that we focus on in this study, while also highlighting the role of inflectional morphology where relevant. For NPs, we distinguish three main possibilities, namely, preverbal constituents, postverbal constituents and omission. These three possibilities can be understood in terms of expectations and uncertainty on the part of the addressee, as judged by the speaker. Our core analysis can be briefly summarised as follows. A preverbal constituent (2) is used either when the addressee has no reason to expect the intended referent, or there is competition between potential intended referents. By contrast, preverbal position will not be used if the speaker judges that their intended referent will also be the addressee's expected referent. This typically results in a clause beginning with a verb. A postverbal constituent (3) is used when the intended referent is the expected referent, but there are also other reasonable candidates and therefore the expected candidate is 'reinforced' to mitigate this degree of uncertainty. Omission occurs when there is a uniquely expected referent, with little or no uncertainty, resulting in a verb-only clause (4).

2

17.1 *i*   ***nukunu***   ***ini=ka***   *dem-pirnturt*
      CONJ   3SG.M   ANAPH=KA[6]   3SG.SBJ.PIERCE.RR.NFUT-arise
      '**The man** gets up'[7].

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[5] The abbreviations used in this paper follow Leipzig rule wherever possible. Additional abbreviations are as follows: 1 'first person', 2 'second person', 3 'third person', ANAPH 'anaphora', CLF:ANIM 'noun classifier, animates', CLF:FIRE 'noun classifier, fire', CLF:HUMAN 'noun classifier, humans', CLF:LANG 'noun classifier, language', CLF:PL/T 'noun classifier, times and places', CLF:THING 'noun classifier, neuter/residue class', CLF:VEG 'noun classifier, non-meat food', CLF:WATER 'noun classifier, water', CLF:WEAPON 'noun classifier, weapons', CLS 'clause ending', CONJ 'conjunction', DAT 'dative', DIST 'distal', DU 'dual', FaFa 'grandfather', F 'feminine', FUT 'future', IMPF 'imperfective', INTJ 'interjection', IRR 'irrealis', ITER 'iterative', LOC 'locative', M 'masculine', NFUT 'non-future', NS 'non-singular', NSIB 'non-sibling', OBJ 'object', OBL 'oblique', PAUC 'paucal', PL 'plural', PROX 'proximal', PST 'past', RECN 'recognitional', RR 'reflexive/reciprocal', SBJ 'subject', SG 'singular', TAG 'confirmation request', WH '*wh*-words'.

[6] In the Murrinhpatha literature *=ka* is glossed as the topic marker. But we find the discourse function of it is still unclear, and therefore do not provide a functional gloss for it in this article.

[7] *Nukunu* is a personal pronoun but as we'll see later in section 6, the English pronoun *he* is not always a felicitous translation.

3

31. *wurdam-mardarlart-warda*   *ne*   ***nukunu=yu***

3SG.SBJ.IMPEL.RR.NFUT-tremble-now   TAG   3SG.M=CLS

'Now **he**'s shaking, right?'

4

2. *dem-pirnturt*

3SG.SBJ.PIERCE.RR.NFUT-arise

'(**He**) gets up.'

We will argue below that this uncertainty-driven clausal scheme is consistent with earlier observations of non-configurational languages but provides a stronger explanation of the distinction between postverbal constituents and omission.

2   *Referential choice in non-configurational languages*

One of the crucial observations in the literature on non-configurational languages is that argument expressions, including flexible constituent order and argument omissibility, are influenced by discourse-pragmatic considerations rather than grammatical relations (Mithun, 1992, 2006; Payne, 1987; Swartz, 1991; see also papers in Adamou et al., 2018; Downing & Noonan, 1995; Mushin & Baker, 2008; Payne, 1992). Despite variable terminology employed by different researchers, the general idea is to connect the surface syntax of these languages with discourse-pragmatic 'salience' or 'prominence', which can roughly be understood as 'importance': a constituent which appears earlier in a clause, e.g., preverbal or clause-initial, usually expresses a referent which is considered discourse-pragmatically salient. A constituent which appears later in a clause, e.g., postverbal or clause-final, on the other hand, usually expresses a referent which is less salient(Austin, 2001; Givón, 1983a, 2011; Hale, 1992; Mithun, 1992; Payne, 1987; Swartz, 1991). Omission in the syntax is generally used for non-salient referents, though (partial) information about these referents may be morphologically marked on the verb (Bowern, 2008; Evans, 1985; Gordon, 2016; Gürer & Göksel, 2019; Hale, 1992). The precise meaning of 'salience' is not always explicitly explained in these studies.

The connection between discourse-pragmatic salience and the surface syntax is exemplified, for instance, by Mithun's (1992) newsworthy-first principle. Using the concept 'newsworthiness' (i.e., discourse-pragmatic salience; Mithun, 1992:32-34),

Mithun explains the clausal syntactic pattern in Cayuga, Ngandi and Coos. In particular, she argues that newsworthiness descends within a clause in these languages, giving rise to an ordering pattern where the clause-initial constituent refers to the most newsworthy referent, and the clause-final constituent the less newsworthy referent. As for the least newsworthy referent, it may be omitted (Mithun, 1992:43). The examples of (more) newsworthy referents include significant new referents, contrastive referents, and new topical referents. The least newsworthy referents, which, as mentioned, tend to be omitted, are best exemplified by continuous topics (Mithun, 1992:43). The application of Mithun's newsworthy-first principle is also found in studies on other non-configurational languages such as those spoken in America like Seneca and Mohawk (Chafe, 2015:147; Mithun, 1996:172) and in Australia (Simpson & Mushin, 2008).

The newsworthiness approach identifies the broad pragmatic contour of non-configurational clause structure, but it remains somewhat unclear about the cognitive underpinnings of this structure. The concept of "accessibility" is one way that researchers have attempted to develop a more cognitively explicit account. Accessibility refers to "the ease with which the mental representation of some potential referent can be activated in or retrieved from memory" (Bock & Warren, 1985:50; see also Tachihara & Goldberg, 2020). The degree of referential accessibility is dependent on various factors, such as givenness (whether a referent has been previously introduced into the discourse), humanness or animacy, narrative centrality, recency or referential distance (how far is the last mention of the referent), and syntactic prominence (the grammatical relation of the last mention of the referent, where subject is said to be more prominent than other grammatical relations); see Arnold (2010) and Vogels and colleagues (2019) for an overview on accessibility.[8] An interesting question raised in this body of research is whether accessibility is in the mind of the speaker or the addressee, that is, whether a specific referent is accessible to the speaker, the addressee, or both parties.

The general claim in accessibility research is similar to Mithun's newsworthy-first principle, but in a mirroring fashion; accessibility increases within a clause: the clause-initial constituent usually refers to a less accessible referent, whereas the clause-final constituent a more accessible referent. For a referent which is highly accessible, the speaker also has the option of omitting it, very much like the least newsworthy referents in Mithun's framework. This pattern has been reported in studies on various non-configurational languages, including those spoken in Australia (*Bardi*: Bowern, 2008; *Kayardild*: Evans, 1985; *Bininj Gun-wok*: Evans, 2003; *Warlpiri*: Hale, 1992; *Garrwa*: Mushin, 2005) and others (*Siouan languages*: Gordon, 2016; *Turkish*: Gürer & Göksel,

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[8] In the experimental literature (e.g., Gleitman et al., 2007), accessibility is also measured by perceptual properties such as the size and colour of the referent. This is not discussed in the present study.

2019 and İşsever, 2019; *Klamath*: Meyer, 1992; *Papago*: Payne, 1987; *Nez Perce*: Rude, 1992); see also studies in Givón (1983c). The oft-found examples in this body of work include that a referent which has been introduced into the discourse yet does not participate for some time – what is generally called a discontinuous topic – tends to be reintroduced by a preverbal constituent, because its accessibility diminishes during the time when it is absent from the scene. A continuous topic, on the other hand, tends to be expressed either by a postverbal constituent or simply be omitted, since it is highly accessible. Table 1 below provides a visual scheme of the relationship between newsworthiness and accessibility on one hand, and modes of argument expressions on the other:

Modes of expression / Discourse-pragmatics	Preverbal or clause-initial position	Postverbal or clause-final position	Omission
Newsworthiness	Newsworthy	Less newsworthy	Less/Least newsworthy
Accessibility	Less accessible	Accessible	(Most) accessible

Table 1. Relationship between discourse-pragmatic concepts of newsworthiness and accessibility, and modes of argument expression.

The work cited above raises some issues which warrant clarifications and further research. We focus on two in the present article. First, the very nature of discourse-pragmatic salience is not always clearly articulated and defined in the literature. Claims like "this referent is pragmatically salient and therefore appears clause-initially" are often made without elaboration. Some studies, such as Mithun (1992), provide a list of properties that make a referent salient (e.g., newness, contrastiveness, topicality). However, the enumeration of many properties that constitute salience risks creating a category that is so heterogeneous as to be applicable to almost any referent. Although the notion of accessibility may promise to create a unified concept of salience, as we will show below (§5), this notion has some implausible implications in Murrinhpatha. Second, the distinction between the functions of postverbal constituents and omission requires more elaboration. Although a gradient distinction in terms of discourse-pragmatics between these two referential options is suggested in some studies, as shown in Table 1 above, the criteria for determining what is "less newsworthy" and "least newsworthy" are not always clear. In some other studies, this type of gradient distinction is not found, and as a result the functional difference between these two distinct types of referential options

is unexplained. Hale (1992), for instance, suggests that in Warlpiri both postverbal position and omission are used for "elements out-of-focus" (see also Simpson, 2007:421). Gürer and Göskel (2019:233) observe that in Turkish what "can be omitted or put in the post-verbal, deaccentuated domain" is of the same type, namely, discourse-given referents. In Bardi, Bowern (2008:68) suggests that omission targets *old* information, whereas clause-final position is used to *reintroduce old* information (Bowern, 2008:69-70) – though this leaves open the question of why some old information can be tacitly assumed, and other old information must be overtly reintroduced. Similar observations are made for Kayardild (Evans, 1985:53-54) and Siouan languages (Gordon, 2016:400-402 & 409). However, as suggested by neo-Gricean pragmatics (Levinson, 2000), there should be a clearer difference between postverbal constituents and omission, since omission should by default be favoured as a matter of economy, and any overt postverbal constituents should therefore require some functional motivation (Levinson, 2000:114 & 136). We will argue below that referential expectation and uncertainty can shed light on the functional difference between postverbal constituents and omission, and can also provide a more unified account of discourse-pragmatic salience.

Our focus on uncertainty does have some precedents in research on non-configurational languages, notably Mithun (1992), Rude (1992), Givón (Givón, 1983b, 2011) and McGregor (2013), who have noted to a certain extent the influence of expectedness or (un)certainty of referents on various aspects of language, including constituent order, omission and optional case-marking. For instance, Mithun (1992:43) argues that when the speaker believes their intended referent to be expected by the addressee, it is not pragmatically prominent, and will either be postverbal or omitted. Both Givón (Givón, 1983b:195, 2011) and Rude (1992), in their studies on Ute and Nez Perce, suggest that less expected referents are likely to be preverbal, whereas more expected referents are likely to be postverbal, whilst the most expected referent will be syntactically omitted and only indexed by verbal agreement morphology.[9] Whilst their proposals are similar to the one made in the present study, we will show that some details are not entirely compatible with the Murrinhpatha data. This is especially true for Givón's proposal, in which expectedness is entirely linked to referential distance. In our analysis, referential distance can play a role in increasing uncertainty, but this is subsumed within a more general model of expectation and uncertainty.

3   *Addressees' expectation and uncertainty*

As explained above, audience-oriented pragmatics has largely been investigated with respect to English, while non-configurational languages have been researched

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[9] Givón (1983b) uses the term 'predictable', whereas Rude (1992) uses the term 'expected'. However, these terms can be seen interchangeable since Rude adopts Givón's methodology.

using a range of other concepts such as newsworthiness and accessibility. In this study we work towards bridging this gap.

One particularly fruitful topic for studying addressees' expectation and uncertainty in English is the use and interpretation of pronouns (for an overview see Kehler & Rohde, 2013). Comprehension experiments show that the interpretation of English pronouns depends upon inferences regarding the flow of events, whereby addressees develop expectations about who or what is going to be mentioned next, and interpret pronouns accordingly (Hobbs, 1979). This is a multifaceted inference involving agency, event structure and other factors. For example, following a verb of transfer, addressees expect that the recipient will be the next-mentioned referent in the following clause, and interpret a subject pronoun accordingly (Stevenson et al., 1994:525):

5
   a) John seized the comic from Bill. He… (he = John)
   b) John passed the comic to Bill. He… (he = Bill)

At the same time, English speakers have a greater tendency to use a pronoun subject when the intended referent is identical to the previous subject, as opposed to a previous object or other grammatical roles. This has been demonstrated in passage-completion experiments (Fukumura & van Gompel, 2010). For example, speakers were given stimuli such as 6a and 6b, where the semantics of 6a biases the speaker to complete the passage by talking about John, and the semantics of 6b biases them to talk about Bill (Rohde & Kehler, 2014). This reiterates the same 'flow-of-events' principle demonstrated above, but here the experimental participants were additionally invited to select the form of referring expression, either reusing the name of their chosen referent, or using a subject pronoun. Speakers whose continuation had the same subject as the preceding clause (i.e., John), were more likely to use the pronoun form, compared to speakers who switched subjects. This preference was exhibited both by speakers who conformed to the flow-of-events principle, and by those who went against the trend, indicating that the same-subject pronoun effect operates independently of the flow-of-events effect.

6
   a) John amazed Bill. _____
   b) John detested Bill. _____

While the experiments above show that English pronoun use and interpretation is a multifaceted process, this body of work has succeeded in showing how these distinct principles interact, using a probabilistic model of expectation and

uncertainty. The model quantifies addressees' expectations about whether a given candidate is the speaker's intended referent, taking into account the speakers' biases for pronominalisation as described above (Franke & Jäger, 2016; Kehler & Rohde, 2019). This is also the approach taken in the aforementioned experiment by Tily and Piantadosi (2009), showing that English speakers prefer pronouns when they believe that their addressee has less uncertainty about the intended referent. These studies have provided substantial experimental support for a model in which referential choice and interpretation is shaped by expectation and uncertainty, between rational agents who form beliefs about each other's beliefs. The approach is quite different from the accessibility literature above, which is based on ease of memory retrieval, as opposed to expectation.

We will show below that expectation provides powerful insights into clausal structure in at least one non-configurational language, Murrinhpatha. For this language we do not have the kind of controlled experimental data that can be used for probabilistic modelling, but we can provide different types of insights by drawing on naturalistic data, where a range of factors influence referential uncertainty. We draw on a range of narrative and conversational data from the 100,000-word Murrinhpatha corpus, though we draw most heavily upon narrative explanations of silent videos.[10] In our discussion we further compare this approach to the concept of accessibility, arguing that the expectation approach is a more plausible theory, and should be further explored with respect to non-configurational languages.

4   Expressing unexpected referents

As mentioned above, Murrinhpatha speakers use preverbal position to express referents which they do not think the addressee will be expecting, thus avoiding referential uncertainty on the addressee's part. There are two main types of situations in which referents can be considered highly uncertain: 1) when there are multiple candidate referents and the addressee has no reason to expect any one in particular to be the intended referent; and 2) when the addressee has no expectations at all regarding candidate referents, for example in answer to a *wh*-question. Example 7 illustrates the first situation: there are two competing referents for the subject of line 17.1: *he* or *she*. These two referents are competing because of their morphosyntactic and semantic compatibility. Both of them are third-person singular referents. As such, the verb *dem-pirnturt* '3SG.SBJ.PIERCE.RR.NFUT-arise' itself does not distinguish the intended subject referent amongst the candidate referents because it inflects for a third-person singular subject. One feature that distinguishes the candidates is gender, but this is not encoded in this verb (it is only encoded for oblique inflections and non-

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[10] The silent videos used in the present studies included film clips and video stimuli developed by the MPI.

singulars). Semantically, both referents are a possible candidate for the action 'get up', and the preceding context does not give any obvious reason to expect one candidate or the other. Thus, at line 17.1 a preverbal constituent *nukunu* 'he' is used to express the referent in the absence of any uniquely expected candidate.

7

16.1   *i*   *mam-na*
        CONJ   3SG.SBJ.SAY.NFUT-3SG.M.OBL
        'And (she) said to (him)…'

16.2   "*yuwu…*   *mi*   *patha*   *mi*   *kanhi=yu*
        yes   CLF:VEG   good   CLF:VEG   PROX=CLS

        ngarnamka-murrk-ngime"   *mam*
        1PAUC.SBJ.be.NFUT-eat-PAUC.F.NSIB   3SG.SBJ.SAY.NFUT
        '"Yes, the food is good, this good food (we)'re eating." (She) says.'

17.1   *i*   **nukunu**   *ini=ka*   *dem-pirnturt*
        CONJ   3SG.M   ANAPH=KA   3SG.SBJ.PIERCE.RR.NFUT-arise
        'And **he** gets up…'

                                              (CM-DB_3-1; Video narration)

Example 8 demonstrates the same situation with an object referent. In the preceding lines (not shown), three inanimate referents are introduced, namely water, box and cloth, all of which are candidate object referents for the verb *manganart* 'grab' in this clause. Like the previous example, the competing referents and the intended referent have the same person and number features (third-person singular). Since third-person singular object is unmarked in Murrinhpatha (Nordlinger, 2011:710), this means that as far as verbal morphology is concerned all of these three referents are candidates for the object of this example. More importantly, these three referents are also semantically compatible with the meaning of the verb, because they are all things that can be grabbed. As such, the object in example 8 is uncertain since the addressee cannot expect any particular candidate to be grabbed. As the example shows, a preverbal constituent *nanthi-warda thingkelet* 'CLF:THING-now cloth' is used, which avoids this potential uncertainty.

8

15.   *i*   **nanthi-warda**   **thingkelet**
       CONJ   CLF:THING-now   cloth

       mangan-art
       3SG.SBJ.USE.HANDS.NFUT-grab

'And now he grabs a cloth.'

<div align="right">(CM-DB_2-1; Video narration)</div>

The examples above illustrate the avoidance of uncertainty when there is no uniquely expected candidate, but instead several roughly equal candidates. Another type of uncertainty is when there are no obvious candidates at all, and one particular context for this type is in answers to *wh*-questions. One of the main (though by no means only) pragmatic functions of *wh*-questions is to request information about unknown referents. The response to this uncertainty is expressed preverbally in Murrinhpatha, as illustrated by the preverbal pronoun *ngay* '1SG' in example 9 (note that this is an instance where the verbal inflection does not distinguish 1SG from 3SG subject), and the preverbal constituent *kangkurl ngay* 'my father' in example 10 (which frames a question/answer pair within a reported speech passage).

9

386. *nangkal*   *mam*   *me-patha-dha?*
      who   3SG.SBJ.SAY.NFUT   3SG.SBJ.DO.PST-make-PST
      'Who did he/she say made it (the damper)?'

387. **ngay** *me-patha-dha*
      1SG   1/3SG.SBJ.DO.NFUT-make-PST
      '**I** made it.'

<div align="right">(LAMP_20140422_WF_01_V1; Conversation)</div>

10

42.   "*nangkal*   *mam*"
       who   3SG.SBJ.SAY.NFUT
      '"Who said that?"' (asked the father)

43.   "*kangkurl*   *ngay* *mam-nga*"
       FaFa   1SG   3SG.SBJ.SAY.NFUT-1SG.OBL
      '"**My grandfather** said it to me."'

<div align="right">(CS1-001-B-sm-06; Personal narration)</div>

Wh- questions also provoke preverbal position for locative expressions, even though locatives are usually postverbal in Murrinhpatha (Ma, in prep). As shown in example 11, the location *ngarra thay* 'in the tree', is expressed preverbally in the answer to the *wh*-question, which highlights the addressee's uncertainty about the location.

11

910.   *ngarra*   *kanam*

         WH   3SG.SBJ.BE.NFUT

         'Where is it (a fork-tailed kite)?'

911.   **ngarra**   **thay**   *yibim-ngurrkurrk*

         LOC   tree   3SG.SBJ.LIE.NFUT-sleep

         '**In the tree** it is lying.'

                                               (LAMP_20130502_WF_01_V1; Conversation)

Finally, there are contexts where the addressee may have a uniquely expected candidate, but this is not in fact the intended referent. This potential for misunderstanding is also avoided by a preverbal constituent which identifies the intended referent. In example 12 there is a continuous subject referent, *ku were ngala* 'the lion', expressed at line 27 and omitted at lines 28-30, while Charlie Chaplin, who is avoiding the lion, is involved but omitted at line 28. At line 31 the lion is the expected referent based on topic continuity, but also because the action *pirriwirlbirldha* 'looking around' echoes the lion's recent action at line 28. But since Charlie Chaplin is in fact the intended subject referent at line 31, this is expressed preverbally with the masculine personal pronoun *nukunu*. This pronoun implies a human referent, and is perhaps more felicitously translated into English as a lexical noun rather than a pronoun.

  12

     27.   *ku*   *were*   *ngala=yu*

            CLF:ANIM   pawed.animal   big=CLS

            'The lion…'

     28.   *i*   *manangka*   *be-ngkardu=ya*

            CONJ   not   3SG.SBJ.AFFECT.IRR-see=INTJ

            'But it didn't see him.'

     29.   *wurdam-wurl-de=ya*

            3SG.SBJ.SHOVE.RR.NFUT-return-ITER=INTJ

            'It goes back.'

     30.   *i*   *kanam-wit=ya*

            CONJ   3SG.SBJ.BE.NFUT-lie.down=INTJ

            'And it lies down.'

     31.   **nukunu=ka**   *pirri-wirlbirl-dha*

3SG.M=KA   3SG.SBJ.STAND.PST-turn

'**The man** was looking around.'

<div align="right">(2015-07-01_Christina-Mullumbuk_2-11; Video narrative)</div>

5   *When referents match addressees' expectations*

Unlike unexpected referents, expected referents are generally not expressed in preverbal position in Murrinhpatha. As stated in §1, this leads to two further possibilities, either syntactic omission, or a postverbal constituent. We describe each of these referential strategies below.

5.1. *Omission of a uniquely expected referent*

When the speaker judges that their intended referent is also the unique referent expected by the addressee, this leaves little or no uncertainty about the target of the reference. In this case, the speaker usually omits the referent. This situation is more common than the other two referential strategies (a preverbal and postverbal constituent), which results in the prevalence of omission in Murrinhpatha, like many other Australian languages and polysynthetic languages across the globe. An example is shown in 13. Here *yelngay* 'my father' is omitted at line 41.2, immediately after its overt expression at line 41.1. Since the action involved at both lines are the same, namely 'laugh', the speaker believes that the addressee can identify the target referent at line 41.2 due to the repetition of action and the lack of other candidates.

13

41.1   *yelngay=ka*   *dim-nga-kampa*
        my.father=KA   3SG.SBJ.SIT.NFUT-1SG.OBL-laugh
        'My father laughed (at me),'

41.2.   *dim-kampa*
        3SG.SBJ.SIT.NFUT-laugh
        '(**He**) laughed.'

<div align="right">(CS1-001-B-sm-06; personal narration)</div>

Likewise, in example 14 the holder of the gun (line 4) and the participants of the shooting event (line 5) are of little or no uncertainty. The possible referents for line 4 and line 5 are *yelngay* 'my father' or *murntuykuy* 'bush turkey'. The addressee's real-world knowledge tells them that it is more likely that the father had a gun and shot the bush turkey, instead of the other way around (note that this is not a fairy tale). Since the participants of line 4 and 5 are uniquely expected – and therefore are of no uncertainty – they do not need to be overtly expressed.

14

3. *ku*   *murntuykuy* *yelngay* *bam-ngkardu*
    CLF:ANIM   bustard   my.father 3SG.SBJ.AFFECT.NFUT-see
    'My father saw a bush turkey.'

4. *thungku*   *kan*
    CLF:FIRE   gun
    '(**He** had) a gun.'

5. *bangam-rde*
    3SG.SBJ.AFFECT.NFUT[11]-hit
    '(**He**) shot (**it**).'

<div align="right">(1974_CS1-4A_02; Personal narration)</div>

In §4 we have shown that a preverbal constituent is usually used to indicate the intended referent amongst multiple candidates. By contrast, as shown in this section, if the intended referent is a uniquely expected referent, omission is used. We will now show that this does not require same-subject continuity. In example 15, line 10, the subject argument is omitted. In Murrinhpatha this often means that the subject is the same as that in the previous clause (e.g., in example 13 and 14), in this case, water. However, this interpretation is considered unlikely because of the semantics of the verb at line 10: *wurdam-wurl* 'return/goes back' typically requires an animate agent. That water returns or goes back is unlikely. Therefore, the subject referent at line 10, that is, the only human referent at this point of the narration, is relatively certain and as such is omitted, despite it being a switched subject.

15

8. *a*   *kura*   *patha* *kura*   *patha-nu=yu*
    oh   CLF:WATER   good   CLF:WATER   good-DAT=CLS
    'Oh drinking water, (he's going) for drinking water.'

9. *dem-ralal*   *kura*   *patha*
    3SG.SBJ.PIERCE.RR.NFUT-thirsty   CLF:WATER   good
    '(He's) thirsty for water.'

10. *puy*   *wurdam-wurl*
    keep.going   3SG.SBJ.IMPEL.RR.NFUT-return
    '(**He**) goes back.'

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[11] *Bam* and *bangam* are glossed the same because /ba/ AFFECT has two inflectional patterns (Mansfield, 2019:114).

Inanimate referents can also be considered certain because of verbal semantics. In example 16, the object water is seen as certain because it is the only liquid in the narration which fulfils the selectional restriction of the verb 'pours out'. This explains why omission is used at line 14, despite the fact that the referent water has not been involved for 10 lines prior to line 22.2 (that is, a discontinuous referent).

16

22.2 *dam-pinhipak*
3SG.SBJ.PIERCE.NFUT-pour.out
'(He) pours out (**the water**).'

Finally, Murrinhpatha syntactic omission is also used for referents that are expected due to event structure, similar to the English pronominal interpretation examples mentioned above as 5a and as 5b. Example 17 shows an example of syntactic omission at line 3, which is not motivated by subject- or topic-continuity. There are two protagonists at this point, a man and a woman, both omitted throughout the fragment. The man can be understood as the subject of lines 1-2, based on preceding context not shown here, but crucially at these lines he demands an action from an unexpressed other person, who by deduction must be the woman. Since the woman has been asked to act, she is therefore the uniquely expected subject referent for the 'fail (to open door)' event at line 3. The object referent 'door' is also omitted throughout this fragment, as it is the only candidate referent for the opening event, and by inference is also the object of the failure. This example shows the extent to which referents in Murrinhpatha can be omitted, even with subject-switches and omission in preceding clauses, as long as the speaker judges that their intended referents are also the addressee's uniquely expected referents.

17

22.1 "*na-nga-dharl*"
2SG.SBJ.USE.HANDS.FUT-1SG.OBL-open
'"Open it for me!"'

22.2 "*na-nga-dharl*"
2SG.SBJ.USE.HANDS.FUT-1SG.OBL-open
'"Open it for me!"'

22.3   *mam-kanam*
        3SG.SBJ.SAY.NFUT-BE.IMPF
        'He's saying.'

23.   *wurda*   *wurdam-bay*
        no   3SG.SBJ.SHOVE.RR.NFUT-fail
        'But no, (she) fails (to open the door).'

                        (2015-07-01_Christina-Mullumbuk_2-11; Video narrative)

5.2. Reinforcing an expected referent

Postverbal constituents are perhaps the most difficult to characterise in Murrinhpatha. This position appears to have several functions, including as a way of indicating episode boundaries (Ma, in prep), but here we focus on its use for reinforcing expected referents. This occurs when the intended referent is one that the speaker believes the addressee to expect, but where it is not a *uniquely* expected referent because there are other reasonable candidates. In example 18, line 6.2 identifies a knife instrument, which is manipulated by an unidentified man who continues as protagonist throughout the fragment. A stick has been identified some lines earlier, and this is involved as object of the durative chopping actions of lines 7-10, though it is not overtly identified since it can be easily inferred by the principles described in the previous section. At line 6 the man puts something down, but what? The knife can reasonably be seen as the most expected candidate, since it has been overtly expressed a few lines earlier, and continuously manipulated as an instrument ever since. But the knife is not a *unique* candidate, as the stick has also been involved in preceding events and is also put-down-able. The speaker mitigates this uncertainty using a postverbal reference to the knife, which is also followed by a locative expression.

18
6.2.   *thu*   *naif-warda*   *mangan-art*
        CLF:WEAPON   knife-now   3SG.SBJ.USE.HANDS.NFUT-grab
        'Now (he) picks up a knife.'

7.   *bangam-rtal*
        3SG.SBJ.AFFECT.NFUT-chop
        '(He) chops (a stick).'

8.   *ini*   *bangam-rtal*
        ANAPH   3SG.SBJ.AFFECT.NFUT-chop
        'He chops it.'

9.   *ini*   *bangam-rtal*
       ANAPH   3SG.SBJ.AFFECT.NFUT-chop
       'He chops it.'

10.   *ini*   *bangam-rtal*
       ANAPH   3SG.SBJ.AFFECT.NFUT-chop
       'He chops it.'

11.   *ban-pak*   **thu**   **naif**   **ngala** *pangu=yu*
       3SG.SBJ.PUT.NFUT-put.down   CLF:WEAPON   knife   big   DIST=CLS
       '(He) puts **the big knife** down over there.'

                                (2011_10-10_LD-RD_3-1; Video narration)

A very similar example is shown in 19, where again a postverbal constituent is used for the theme of the verb *ban-pak* 'put down'. Again the intended referent is also an expected referent, but since the verb *ban-pak* can also apply to any inanimate physical object in the scene, the postverbal constituent is used to reinforce that the expected referent is indeed the intended referent.

19

18.   *bere*   *mam-nge*   *"puy=ya*
       so   3SG.SBJ.SAY.NFUT-3SG.F.OBL   keep.going=INTJ

       puy=ya,"   *mam-nge…*
       keep.going=INTJ   3SG.SBJ.SAY.NFUT-3SG.F.OBL

       "mi-gathu-nu   *ngi-mpa-mardamarda"*
       CLF:VEG-hither-DAT   1SG.SBJ.SIT.FUT-2SG.OBL-wait
       'So (he) says (to her), "come on… (I)'m waiting (for you) to give (me) food".'

19.   *ini*   *ban-pakwak-dim*   **mi**
       ANAPH   3SG.SBJ.PUT.NFUT-put.down-SIT.IPFV   CLF:VEG
       'And (she) is putting **the food** down.'

                                   (CM-DB_3-1; Video narrative)

A slightly different type of example is shown in 20, where the verbal semantics already provides explicit, but somewhat ambiguous, information about the object. The verb *memkapurl* at line 14 uses an incorporated body-part nominal *-ngka*, which can denote either the eyes specifically, or the face more generally. The human actor in this

passage has recently woken from sleep, and by world knowledge the speaker might believe that the addressee will expect his face to be the object of washing. Nonetheless, the use of an (English borrowing) postverbal constituent reinforces the specific intended referent 'face' as opposed to the candidate 'eyes'. This example has interesting parallels with 'afterthought' constructions, which are sometimes said to provide further clarification or elaboration on the information in the core clause (López, 2014:414; see also Baker & Mushin, 2008:10-11 for references in the Australian context). In Murrinhpatha there is no obvious reason to treat the postverbal position as outside the clause (e.g., they do not form separate intonational units), and the usage illustrated here is part of a wider pattern of mitigating potential uncertainty, in this case involving progression from ambiguous reference to something more specific.

20
2. *dem-pirnturt*
3SG.SBJ.PIERCE.RR.NFUT-arise
'He gets up.'

(12 lines not shown)

14. *mem-ngka-purl*   *feis*
3SG.SBJ.USE.HANDS.RR.NFUT-eye/face-wash face
'He washes his **face**.'

(2011-07-25_LP-GM_2-1; Video narrative)

The most frequent use of postverbal reinforcement in our data occurs in topic chains. Dixon (1972:71) describes topic chains in Dyirbal as the following:

> A number of consecutive sentences in such a sequence have a common NP, with common referent, then they will form a topic chain: this entails each sentence being transformed into a form in which the common NP is a topic NP… This NP may only be stated once, at the beginning of the topic chain; optionally all or part of it may be repeated later in the chain.

In a topic chain, the topical referent is frequently omitted since it tends to be uniquely expected, as described in §5.1. However, successive omission may increase uncertainty of the referent, since it opens the possibility for other referents which are compatible to the verbal inflection but have not been introduced (that is, new referents). It is in this way that we see Givón's (1983a) concept of referential distance as being subsumed under a theory of expectation and uncertainty. To reinforce a topical referent after successive omissions, Murrinhpatha speakers sometimes use a

postverbal constituent, as exemplified by the postverbal pronoun *nukunu* '3SG.M' at line 31 of example 21 below.

21

25.   *nukunu*   *mam-ngkarr-kanam*
     3SG.M   3SG.SBJ.USE.HANDS.NFUT-be.dizzy-BE.IMPF
     'He's dizzy.'

26.   *kanam-wit-warda*
     3SG.SBJ.BE.NFUT-lie.down-now
     '(He) lies down now.'

     [0.89 Second]

27.   *nukunu*   *yuwu*
     3SG.M   yes
     'Yes, him.'

28.1 *aa*   *dem-nham*
     oh   3SG.SBJ.PIERCE.RR.NFUT-fear

     da   *kangkarl*   *pangu*
     CLF:PL/T   above   DIST
     '(He)'s scared up there.'

28.2 *mam-ngkarr-dim*
     3SG.SBJ.USE.HANDS.NFUT-be.dizzy-SIT.IMPF
     '(and) dizzy.'

29.   *mi-yerr-nu-warda*   *na*
     3SG.SBJ.LOOK.IRR-peak-FUT-now   TAG
     '(He) peaks down, right?'

30.1 *mim-yerr*
     3SG.SBJ.LOOK.NFUT-peak
     '(He) looks down,'

30.2 *mam*   *da*   *kangkarl*
     3SG.SBJ.SAY.NFUT   CLF:PL/T   above
     'and (he) thinks, "this is high up."'

31. *wurdam-mardarlart-warda*　　　　　*ne*　　**nukunu=yu**
    3SG.SBJ.IMPEL.RR.NFUT-tremble-now　　TAG　　3SG.M=CLS
    '**He**'s shaking.'

32. *yuwu*
    yes
    'Yes.'

33. *Mr. Bean?*
    '*Mr Bean?*'

34. *murrinh*　　*nukunu=yu*
    CLF:LANG　　3SG.M=CLS
    'That's his name.'

<div align="right">(CM-DB_2-3; Video narration)</div>

This example shows a series of clauses which describe Mr. Bean's actions and feelings. As such, these clauses form a topic chain of Mr. Bean. At line 25, Mr. Bean is expressed by a preverbal pronoun *nukunu*.[12] This is followed by omission of this referent at line 26. Line 27 is a confirmation where the speaker confirmed that he was still talking about Mr. Bean. Then from line 28.1 to line 30.2 there are five successive clauses in which Mr. Bean is involved but omitted. After this successive omission, at line 31 a postverbal pronoun *nukunu* is used. We suggest that the function of this postverbal constituent is to reinforce the topical referent, Mr. Bean. Although there are no other overt candidates in this fragment, we suggest that the number of successive omissions in itself gradually raises uncertainty about whether any other candidates are at play. This is because communication always has some inherent potential for mishearing, misunderstanding etc., which may be small but has an incremental effect over multiple clauses. Postverbal reference is used to keep the addressee on track as to which referent is being talked about after multiple clauses with omission. Further evidence comes from line 32 to line 34, where the speaker confirmed that he was still talking about Mr. Bean.

This example also suggests a limitation of the notion of accessibility in explaining constituent order and argument omissibility. Mr. Bean can be regarded as (highly) accessible in this example. Recalling that same-subject humans are considered to have very high accessibility (see §2), Mr Bean should be highly accessible at line 31. Mr Bean has a referential distance of just one at this point, which is calculated based

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[12] This line is an interesting example of preverbal expression, since Mr Bean is also the subject of preceding clauses. However, there is a long pause (8 seconds) between this line and the previous, after which the speaker may judge that the addressee expects a change of topic. The preverbal expression would then indicate that, counter to this expectation, the speaker is continuing to talk about Mr Bean.

on involvement, not overt encoding (Givón, 1983a:14), and persists in Givón's (1983a) term. Mr. Bean is also the protagonist here and in the entire narrative. If the addressee has understood the meaning of the preceding clauses at all, then Mr Bean should be 'easily retrieved from memory'. As such, accessibility alone should predict omission at line 31, and cannot explain the postverbal pronoun *nukunu* at this line. However, as argued above, the perspective of referential uncertainty management does provide a plausible explanation for why referents should be overtly expressed after several clauses in which they are involved but omitted. Furthermore, the use of postverbal position, as opposed to preverbal position, is motivated. If the speaker were to use preverbal position, at a point where Mr Bean is the expected referent, then this would suggest to the addressee that there was some *other* expected referent at play, thus sowing confusion about the intended referents of the preceding clauses.

Example 22 again shows postverbal reinforcement of a topical human referent after successive omissions. Here there are two instances, both using the pronoun *nukunu*, at lines 11 and 14. There are no other human referents in this fragment, so again no other overt candidates. Interestingly, each instance of postverbal *nukunu* in this passage occurs after exactly three successive clauses in which the same referent is active but omitted (the same situation can be observed also in example 21). Although there is obviously some variation in the number of clauses that precede a postverbal reinforcement where syntactic omission occurs, these examples suggest that there may be a relatively consistent number of omission clauses required to induce the reinforcement function.

22

    9.1   *nanthi*   *brick*   *karrim*
            CLF:THING   brick   3SG.SBJ.STAND.NFUT
            'There's a brick,'

    9.2   *pana* *thungku*   *thay* *ban-pak*
            RECN   CLF:FIRE   wood 3SG.SBJ.PUT.NFUT-put.down
            '(He) puts the firewood there.'

    10.   *i*   *naif*   *ban-pak*
            CONJ knife   3SG.SBJ.PUT.NFUT-put.down
            'And (he) puts down the knife.'

    11.   *dam-dhakthuk*   ***nukunu***
            3SG.SBJ.PIERCE.NFUT-collect   3SG.M

            thungku   *thay*

CLF:FIRE   wood
'**He**'s collecting the firewood.'

12.   *nhini*   *kanam-kut*
      ANAPH   3SG.SBJ.BE.NFUT-collect
      '(He) collects it.'

13.   *thungku*   *thay*   *murr-de*
      CLF:FIRE   wood   more-ITER
      'more firewood.'

14.   *wurrini-dha*   **nukunu**
      3SG.SBJ.GO.PST-PST   3SG.M
      '**He** walked off.'

                                   (2011-07-21_KM-AB_3-1; Video narration)

In contrast to 21 and 22, which involve relatively long topic chains, example 23 below shows that when a topic chain is short, postverbal reference is not needed. In this example, the two clauses between line 64 and line 66 form a topic chain, with *pernintha* '3DU.M.NSIB = two (non-sibling) men' being the topical referent, which is overtly encoded in the first clause of the chain (line 64), and is omitted in the final clause of the chain (lines 65 – 66). *Kardu terert* 'everybody' becomes the new topical referent in line 67. The short length of the topic chain may explain why 'the two of them' is not expressed by a postverbal expression in line 65. If topic-chain reinforcement is indeed the motivation for the examples of postverbal reference above, then two-clause chains do not provide the sequence of omissions that would motivate a postverbal reference.

23
64.   *bere*   *pernintha=ka*   *kaykay-warda*
      so   3DU.M.NSIB=KA   call.out-now
      'Then the two (men) called out.'

65.   *pa-nintha-ret*
      3SG.SBJ.SLASH.NFUT-DU.M.NSIB-start
      '(They) started calling out.'

66.   *kardu*   *ngarra terert-nu*   *warda*
      CLF:HUMAN   LOC   many-DAT   now
      'to everybody.'

67. *kardu*   *terert* *kardu*   *ku-warra*
CLF:HUMAN   many CLF:HUMAN   CLF:ANIM-first

punni-dha   *i*   *mi-nu*
3PL.SBJ.USE.FEET.PST-PST   and CLF:VEG-DAT
'Everybody was out hunting or collecting fruits.'

(CS1-015B_02; Personal narration)

6 Discussion

In §§4–5 we showed how Murrinhpatha speakers manage their addressee's uncertainty about intended referents by selecting from three possibilities of modes of argument expression, namely, preverbal constituents, postverbal constituents and omission. We showed that speakers' beliefs about addressee expectations, and in particular the alignment or misalignment of these expectations with the intended referents, can explain a wide range of phenomena in Murrinhpatha constituent order and omission. In fact, we propose that this sort of 'expectations management' is the main guiding principle in Murrinhpatha clause structure. This is not to say that it is the *only* principle, and several other patterns have been investigated (Ma, in prep; Nordlinger et al., 2022). This adds to the previous body of literature arguing that non-configurational or 'free word order' languages have a clausal syntax largely driven by pragmatics (Austin, 2001; Kiss, 1981; Mithun, 1992; Payne, 1987), but also sheds new light on the matter by drawing on insights from recent pragmatic research on languages with rigid configurational syntax, where interlocutors' beliefs about each other's beliefs also play a central role (Frank & Goodman, 2012; Franke & Jäger, 2016). Our focus on addressee's expectations also provides a relatively unified approach, compared to the somewhat heterogeneous concept of newsworthiness.

In our analysis of topic chains above, we noted that these present a challenge to accounts based on accessibility of referents. To reiterate, a referent is said to be 'accessible' if it can be easily retrieved from memory, and entities referenced in a discourse are highly accessible if they have been continuously or recently involved in the action. But we found that in Murrinhpatha, continuously involved actors are sometimes overtly referenced in longer topic chains. We argue that this mitigates the uncertainty associated with multiple clauses where the referent is omitted. We propose that uncertainty is a more plausible explanation of this phenomenon than accessibility, because the series of clauses with omission have potential to increase uncertainty, but the accessibility of the referent should not change at all, as long as the addressee is following the story. The subject referent in topic chains such as example 21 above should indeed be the most highly accessible referent.

Since we reviewed some pragmatic research on English pronouns above, it is worth considering how this does or doesn't line up with our findings on Murrinhpatha clausal syntax. We highlight the fact that Murrinhpatha pronouns such as *nukunu* '3SG.M' should not be assumed to have the same function as English pronouns like *he*. As shown in Table 2, we might consider the Murrinhpatha preverbal position to be roughly equivalent to the English use of lexical NPs, either common nouns or proper names, where the speaker does not assume that their intended referent is also the addressee's uniquely expected referent (cf. Tily & Piantadosi, 2009). When a referent is uniquely expected, English speakers use a pronoun, which may not provide any information as such, but is required by the clausal syntax. In this situation Murrinhpatha does not impose a syntactic requirement, though the verb must still be inflected for the appropriate person/number/gender categories. As for Murrinhpatha postverbal position, this is more difficult to equate with an English referential strategy – perhaps this is a variable equivalence, where English speakers might use either a noun/name, or a pronoun. The more rigid syntax of English may also imply other types of strategies are preferred for expectations management, such as definite/indefinite articles, or prosodic prominence.

INTENDED REFERENT	MURRINHPATHA	ENGLISH
Not uniquely expected	Preverbal nominal	Noun or proper name
Uniquely expected	Syntactic omission	Pronoun
Expected but with other possible candidates	Postverbal nominal	? Noun, name / Pronoun

Table 2. Comparison between modes of argument expression in Murrinhpatha and English

The observations above suggest that there is some functional equivalence between Murrinhpatha pronominal inflection on verbs, and English independent pronouns. At the same time, an important difference is that Murrinhpatha verbal inflections are *also* used when there is a coreferential nominal constituent (e.g. *nganki ngu-bam-ngkardu* 'we see'), whereas in English it is usually a mutually exclusive choice between pronoun vs. noun/name, e.g. **John he went there* (where *John* and *he* refer to the same referent). Similarly, Murrinhpatha personal pronouns do not appear to be functionally similar to English personal pronouns: in English, a personal pronoun is used to fill a syntactic slot when the intended referent is the expected referent, whereas the evidence we have shown above for Murrinhpatha pronouns such as *nukunu* '3SG.M' (as in example 12, for instance) suggests that this is more typically used when the intended referent is not a uniquely expected referent, but the masculine gender and implied humanness of the pronoun is sufficient to distinguish the intended referent from other candidates.

We also mentioned in §3 that in English, it has been shown that referents which are the subject in consecutive clauses favour pronoun use, compared to subject switches, which favour full NPs. However, we have not found any clear evidence for this in Murrinhpatha; indeed in 17 we showed an example where syntactic omission is used for a switched subject. This suggests that in Murrinhpatha, subject switches are not always signalled by a 'heavier' referring option. That said, using pronouns to indicate subject switches is still possible in English, when preferred by event structure (see 5 above), so Murrinhpatha syntactic omission may yet align with English pronouns on this point. Further research, including perhaps controlled experimental conditions, would be required to investigate the probabilistic structure of Murrinhpatha referential choice and omission, and thus give us a clearer picture of the pragmatic similarities and differences between languages with very different syntactic patterns.

7 Conclusion

In this article we have demonstrated a relationship between referential uncertainty management and syntax in Murrinhpatha. We showed that Murrinhpatha speakers often utilises the language's flexibility of syntax, in terms of constituent order as well as (non-)expression of arguments, to mitigate such uncertainty to assist addressees in keeping track of discourse referents. In particular, we illustrated the functions of preverbal position, postverbal position and syntactic omission in Murrinhpatha syntax. Preverbal position is used to indicate unexpected referents; postverbal position is to reinforce referents which need to be reinforced, and syntactic omission occurs when the referent is uniquely expected. We have argued that uncertainty accounts for spontaneous narrative evidence better than an alternative account based on accessibility, while at the same time providing a more concrete psychological account than the existing literature on 'newsworthiness'. Expectation and uncertainty also make connections between patterns of referential expression in languages as typologically different as English and Murrinhpatha, and we propose that this conceptual framework will provide a fruitful approach for further research on non-configurational syntax.

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