

Article

Variable Modality in Pintupi-Luritja Purposive Clauses

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Abstract: This paper investigates the modal and non-modal uses and readings of the purposive suffix in the Western Desert (Pama-Nyungan) language Pintupi-Luritja. It is shown that the suffix is associated with a range of root-modal readings, with some variability in modal force. The modal readings are investigated in a variety of non-upward-entailing environments and compared with those of other variable modal force languages as described in the literature. I suggest that the purposive suffix does not behave in the same way as in these languages, which suggests that the typology of variable force modality is not uniform. I conclude by suggesting a connection to the modality described in non-finite and nominalised environments in a number of other languages.

Keywords: modality; Australian languages; non-finite; nominalisation; semantics

1. Introduction

Natural languages allow their speakers to talk about aspects of their world that are not necessarily real or true. Some of the means by which speakers can do this involves modality, which relates a proposition to possible or necessary eventualities, evaluated according to particular speaker assumptions. This paper gives an overview of one strategy used to express root modality in the Western Desert (Pama-Nyungan) language Pintupi-Luritja [ISO 6393-3: piu; Glottocode: pint1250], namely via the so-called purposive suffix. This suffix and its associated clause are implicated in a range of modal readings, both in flavour and force. There has been a surge of interest in this kind of modal variability in recent years, and work on less well-studied languages has contributed a great deal to our developing understanding of variation in the typology of modality (Bochnak 2015a; Deal 2011; Peterson 2010; Rullmann et al. 2008). Traditional languages of Australia have not featured greatly in the discussion thus far, particularly outside of a number of Non-Pama-Nyungan languages of Northern Australia (Bednall 2019; McGregor and Wagner 2006; Nordlinger and Caudal 2012). In this paper, I document the modal contribution of this construction in Pintupi-Luritja and compare it to other examples of modal variability in the literature. I argue that its behaviour does not mirror that of languages described there, and suggest that it gives further evidence for non-uniformity in the typology of variable force modality (Yanovich 2014b). The modal character of the Pintupi-Luritja purposive suffix does however seem to mirror that of the modality found in a range of non-finite/nominalised environments described for a number of languages; these include the ‘BE to’ construction in English, for example “You are to stay home” (cf. “You must stay home”). The place of these types of modal expression in a typology of variable modality is not yet clear, but the fact that the Pintupi-Luritja purposive clause is itself a non-finite/nominalised construction suggests that the modality expressed in these environments patterns similarly cross-linguistically. This paper represents a case study in modal expression, which is greatly under-studied in languages of Australia.

This paper is structured as follows: the remainder of this section introduces the necessary background on modality; Section 2 introduces background on Pintupi-Luritja



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and the methods used here; Section 3 details the behaviour of modal and non-modal readings contributed by the purposive suffix; Section 4 compares this behaviour with other similar cases of variability of modal readings; Section 5 draws a connection to non-finite/nominalised ‘covert’ modality; Section 6 concludes.

1.1. Modality and Natural Language

The term modality refers to the ability to speak of situations and eventualities not as they necessarily are in the speaker’s world, but how they might, may, should, or must be. Modality is expressed by a wide variety of grammatical means cross-linguistically, including dedicated modal verbs, verbal morphology, particles, and lexicalised constructions. Two main parameters within modal expression will be relevant here: the modal *flavour*, and the modal *strength*, or *force*. The modal flavour concerns the basis against which a modal proposition is judged; for example, *epistemic* modality is concerned with what might or must be according to the speaker’s knowledge, whereas *deontic* modality is concerned with what might or must be according to a set of rules or norms. The distinction can be shown with the English modal verb ‘must’.

- (1) a. There’s no orange juice left– Alex must have drunk it all. *Epistemic*
 b. Shoes must be removed before entering the jumping castle. *Deontic*

Modal force concerns a relation of strength between the proposition and the modal flavour, and whether the modal statement deals with *necessity* or *possibility*; compare the force of ‘can’ in the following deontic examples with ‘must’.

- (2) a. You can claim the air compressor as a business expense. *Possibility*
 b. Anyone who finishes the juice must buy the next bottle. *Necessity*

A Kratzerian tradition in semantics (Kratzer 1977, 1981, 1991) considers modality to represent quantification over possible worlds (see also Matthewson 2016; Portner 2009; von Stechow 2006). What modal operators do is select and quantify over a set of possible worlds, which serve as the domain for evaluation for the proposition. Modal force is encoded in the quantificational strength; universal quantification corresponds to necessity and is represented with \Box , and existential quantification corresponds to possibility and is represented with \Diamond . There is recognition that there are shades between strict necessity and possibility that are relevant for capturing some modal behaviour, and there are a number of approaches on the market for dealing with this (see, e.g., Klecha 2014 for an example) but they will not be evaluated here. Modal flavour is determined through contextual restrictions on the set of worlds considered for quantification. The relevant set of possible worlds targeted for quantification therefore varies, and this variation corresponds to the modal flavour—(2b) for example states that *in all of the worlds that conform to the rules of the share-flat* (for example), the person who finishes the juice buys the next bottle (which may or may not correspond to our actual world– it does not mean that the culprit actually does buy juice, but that every world included in the set of share-house-rule-conforming worlds is one in which they do buy juice).

Despite theories of modality varying widely in the details, it is typical to make a distinction within modal flavours and split them into (at least) two groups: epistemic modals, and one or more non-epistemic groupings. A common overarching name for this non-epistemic grouping is *root* modality, which is often further split into deontic, ability modals etc. We will be concerned with root modality here; the expression of epistemic modality does not appear to overlap with the expression of root modality in Pintupi-Luritja at all.

Although it does not represent the only approach to analysing modality, this general framework will be important here in light of recent investigations into an emerging typology of variation in modal systems.

1.2. Cross-Linguistic Variation in Modal Expression

Particularly over the last decade or so there has been greater interest in investigating the distinctions languages make in expressing modality. Variation in modal expression, especially concerning modal force, was initially illuminated in work on languages of the greater Pacific Northwest (Deal 2011; Matthewson et al. 2005; Peterson 2010; Rullmann et al. 2008), but has expanded beyond this region in more recent work (e.g., Chen 2018; Jeretič 2021; Vander Klock 2013; Yanovich 2016). To give an example of what this looks like, recall that English (and other Germanic languages) have a set of modal verbs (including ‘can’, ‘must’, etc.), which are lexicalised for their modal strength, but not for their modal flavour; so ‘must’ is a necessity modal in all contexts, but is compatible with both epistemic and deontic readings, as shown in (1). However languages can pattern differently to the English-style encoding of modality; modal elements can be lexicalised for modal flavour, but variable in their strength (e.g., in St’át’imcets, Matthewson et al. 2005; Rullmann et al. 2008). There are a number of ways that variable-force modality is accounted for; for the moment I’ll use the term descriptively to refer to a particular construction/lexical item/etc. which can express both modal possibility and necessity. Taking modal force and flavour to be the two relevant parameters of variation has allowed linguists to work towards a typology of how modality can be encoded in grammar, and work in this framework has shown that the full range of possible patternings of modal force and flavour are attested (Bochnak 2015a, 2015b; Cable 2017; Deal 2011; Matthewson 2013; Peterson 2010; Rullmann et al. 2008; Vander Klock 2013).

It is as of yet largely unknown how traditional languages of Australia fit into this typology, as there are at present few systematic studies into how modality is expressed. Most of the existing work in this area explores modal and mood systems in non-Pama-Nyungan languages of northern Australia (Bednall 2019; McGregor and Wagner 2006; Nordlinger and Caudal 2012; Schultze-Berndt and Caudal 2016; Verstraete 2005); outside of Northern Australia there has been very little work on modal expression (Bell 1988; Bednall 2011, 2020 being some relevant exceptions). This paper is a step towards addressing this gap in the literature by exploring an expression that is used to express root modal meanings in Pintupi-Luritja (Western Desert, Pama Nyungan). We will see that although the purposive clause can express an array of root modal readings with variable force, its behaviour differs from those described for a number of other languages with variable modal force, which suggests that there is variation in the typology of variable-force modality.

2. Materials and Methods

2.1. Pintupi-Luritja

Pintupi-Luritja (sometimes called Papunya-Luritja) is the name used for a Western Desert language spoken in a small number of Central Australian communities and outstations, stretching roughly from Papunya (Warumpi) and Haasts Bluff (Ikuntji) in the east, to Kintore (Walungurru) in the west; further west are also a number of predominantly Pintupi speaking communities, including Kiwirrkura and Patjarr/Karilywara. The term Western Desert corresponds to the Wati subgroup in O’Grady et al. (1966), and is comprised of a number of closely-related languages, a number of which have been the subject of relatively extensive linguistic study, particularly Pitjantjatjara, Yankunytjatjara, Pintupi, Ngaanyatjarra, and Wangkajunga (Bell 1988; Bowe 1990; Douglas 1964; Glass and Hackett 1970; Goddard 1985; Hansen and Hansen 1978; Jones 2011; Langlois 2004; Rose 2001). As the name suggests, Pintupi-Luritja describes a relatively cohesive and stable mixing of the closely-related and overlapping Pintupi and Luritja languages/dialects, which have been in close contact through cohabitation of speakers since the establishment of communities like Haasts Bluff and Papunya starting in the 1930s and 1940s (Hansen 1984; Holcombe 2004; Myers 1991). The name Pintupi-Luritja is not typically used by speakers, who tend to differentiate between Luritja and Pintupi, while also acknowledging the extent that they converge. Through this sustained contact between Pintupi and more eastern Western Desert languages (as well as a number of other languages spoken in the communities such

as Warlpiri, Arrernte, and Anmatyerre), Pintupi-Luritja developed and largely stabilised as a distinct and relatively cohesive language variety. It is sometimes called a communilect, reflecting this fairly recent settlement-based history (Hansen 1984). The main linguistic sources for Pintupi(-Luritja) include a grammar (Hansen and Hansen 1978) and description of phonology (Hansen and Hansen 1969), a learner's guide (Heffernan and Heffernan 1996), and dictionary (Hansen and Hansen 1992).

Most grammars of Western Desert languages cited above address some modal properties of various pieces of morphology and constructions in the respective Western Desert languages, although rarely in great detail. (Bednall 2011, 2020) and Bell (1988) undertake comparisons of the morphology and semantics of a number of aspectual and mood markers, as well as some modal constructions between a number of Western Desert languages. This paper aims to contribute to this literature by detailing the modal behaviour found in purposive clauses in Pintupi-Luritja.

2.2. Methodology and Sources

Data for this paper comes from original fieldwork and locally produced literature, including the Luritja Bible (Bible Society of Australia 2006), local newsletters, books written and produced in local school literary centres, as well as some publicly available videos produced for/by local communities. Data from my own fieldwork includes a citation for the recording in which it was made, as well as a time stamp. Local literacy books cited in the bibliography are linked to copies scanned and archived by the Living Archive of Aboriginal Languages (Bow et al. 2014; Living Archive of Aboriginal Languages 2012). Local newspapers have been scanned and archived by the National Library of Australia; citations from these sources are similarly linked to the item in the archives. Bible passages include the Luritja names for the relevant sections; I have used the New Revised Standard Version to give the English translations where appropriate, but note since passages in the Luritja Bible often include lengthier discussion and paraphrase than the English version, Luritja examples often have no exact equivalent in the English version. I have retained the spelling used in the original sources, which sometimes results in slight inconsistencies. English translations not specified for their origin are my own.

In my own fieldwork, I mainly relied on eliciting translations of English sentences following a context structured in such a way to try and eliminate the ambiguity present in English modals, or would present a sentence in such a context and asking for judgements of felicity (Berthelin 2020; Matthewson 2004). Contexts and prompts used are included in the examples here.

2.3. The Expression of Root Modality in Pintupi-Luritja

In general, elicitation for many root modals in Pintupi-Luritja is met with non-modalised paraphrases. The expression of ability and circumstantial possibilities for example are typically translated with a habitual or future tense suffix, rather than with a dedicated modal marker or construction.

- (3) a. PROMPT: Tjakamarra can speak Luritja.
Tjakamarra-nya, paluru Luritji wangka-payi.
 Tjakamarra-NOM 3SG.ERG Luritja speak-HABIT

(lit.) Tjakamarra, he speaks Luritja.

[JAG1-20200315_ModalsMaNg; 28.49–28.54]

- b. *Palatja nganytja-lku-tarra nyuntu-panu mobile phone-akutu.*
 DEM stick-FUT-also 2SG-CONC mobile phone-ALL

It [COVID-19] will also stick to your mobile phone.

(Source translation): That germ [COVID-19] can stick to your mobile phone.

Video: (Northern Land Council 2020; 2.50–3.55)

However there are a number of lexical items and constructions that do often mark modal and modal-like properties; in this paper we will concentrate on just one of these. The purposive suffix and its associated clause are not purely modal constructions, but rather exhibit an array of both modal and non-modal properties, often with unclear boundaries.

3. The Purposive Suffix and Associated Clause

Now we will examine the modal and non-modal properties of the so-called purposive suffix, which has clear cognates across the Western Desert languages. Its use as a 'hortative' in Pintupi is noted in Hansen and Hansen (1978, pp. 174f, 200f), and the suffix in some (but not all) other Western Desert languages has similarly been described as expressing vaguely deontic modal readings (Bell 1988, pp.15, 62ff, 117f, Goddard 1985, pp. 32ff, 84). We will see that the modal character of the Pintupi-Luritja purposive suffix encompasses a range of root modal flavours and strengths, with varying degrees of variability. The purposive suffix is morphologically complex, consisting of a conjugation class marker $-\emptyset$, $-nku$, or $-ngku$, a nominalising suffix $-n(y)tja$, followed by the dative suffix $-ku$; however I will gloss this suffix as a single PURP here for ease of reading. The purposive suffix encodes switch-reference in a number of Western Desert languages, but this does not extend to Pintupi-Luritja; there do not appear to be any co-referentiality restrictions between arguments in the matrix and purposive clauses (Hansen and Hansen 1978, p. 65f).

The question of switch-reference is also relevant across Western Desert languages in clauses headed by the so-called intentive suffix $-kitja$ (seen here in 12b). In many Western Desert languages the purposive and intentive suffixes are tightly aligned in expressing purpose clauses and as kinds of non-finite complement marking, which is intertwined with switch reference; however, this does not apply in Pintupi-Luritja (e.g., Goddard 1985, p. 80ff; Bowe 1990, p. 74ff; see Hansen and Hansen 1978, p. 78 for Pintupi). The intentive suffix in Pintupi-Luritja does not exhibit the same modal readings as the purposive does. Thanks to an anonymous reviewer for highlighting the importance of this relationship in many Western Desert languages.

The purposive suffix and the clause it is contained within are not only, or even primarily modal; it has three main uses that we will examine here; (i) indicating the purpose or motivation for an action; (ii) marking subordinate non-finite clauses; and (iii) as a modal marking, typically deontic (weak) necessity. Although not all of these uses are necessarily modal in nature, they are not unrelated functions, so we will examine these three uses in turn.

3.1. The Purposive as a Purposive

Firstly, let us examine the purposive suffix in its namesake use as marking purposive clauses. These clauses act as unselected adjunct-like clauses and are separate from the argument structure of the main, tensed verb. These purposive clauses describe the purpose/motivation for, or end goal of the matrix predicate. Arguments that are co-referential between the clauses are sometimes omitted in the purpose clause (as in 4a and 4b), but they need not be, as in (4c).

- (4) a. *Ngurra-ngka nyina-rra paluru a-nu karru-kutu kapi manytji-nytjaku.*
camp-LOC sit-MV 3SG.NOM go-PST creek-ALL water get-PURP

After staying at the camp, he went to the creek to get water.

(Source translation): One day after staying in the camp for a while, he went to get some water.

Mamutjarra (Ferguson 1987b)

- b. *Ngurra kutjupa-nguru yanangu tjuta ngalya-nu puuta-rri-ngkunyjtaku.*
place other-ABL person many hither.come-PST vote-INCH-PURP

(Source translation): Some aboriginal people came from other places to vote here.
[Papunya Literature Production Centre \(1987a, p.16\)](#)

- c. *Palulanguru Katutja-lu Kayina-nya maakatju-nu, kutjupa-lu nya-kula wiya*
after.that God-ERG Cain-ACC mark-PST other-ERG see-MV NEG
palu-nya mirri pu-ngkunyjtaku.
3SG-ACC dead strike-PURP

After that, God put a mark on Cain, so that seeing him, others would not strike them dead.

(Source wording): And the LORD put a mark on Cain so that no one who came upon him would kill him. [Yurruntitja 4:15-16/Genesis 4:15](#)

This use of the purposive (which as discussed is morphologically a dative-marked nominalisation) is clearly related to a salient function of dative-marked nominals in the language, which can function as indicating the goal, purpose, or motivation for an action.

- (5) *Wati, kungka, wula wiima kuka-ku ya-nu.*
man woman boy little meat-DAT go-PST

A man and their wife and their small son went out for meat.

[Kukaku yanu \(Raggett 1982\)](#)

Correspondingly, verbs in purposive clauses are nominalised in order to bear this dative marking. These verbs retain their argument structure, and case marking of overt purposive arguments follows as it would in matrix clauses— for example, the purposive subject and object are ergative/accusative marked in (4c).

3.2. The Purposive as Marking Non-Finite Complementation

The second use of this suffix involves verbal marking in subordinate clauses semantically selected by a wide range of verbs including *yunyjtjurringanyi* 'want', *ngulurringanyi* 'become afraid', or in indirect speech with verbs of speech and communication like *watjani* 'say' and *tjapini* 'ask' (see (33) in Appendix A for further examples).

- (6) a. *Wati paluru kutjarra-ngku yunyjtju-rri-nyi witi-ntjaku naantja.*
man DEM two-ERG desirous-INCH-PRS catch-PURP horse

(Source translation): Two men were wanting to catch a horse.

[Yara wati kutjarratjarra naantja yini Ritakinganya \(Morris n.d.\)](#)

- b. *Palulanguru Payilata-lu watja-nu Parapatja-nya pakaltjinga-ntjaku.*
after.that Pilate-ERG say-PST Barabbas-ACC release-PURP

After that, Pilate said to release Barabbas.

(Source wording): So he released Barabbas for them. . .

[Maatjuwukunu/Matthew: 27:26](#)

Aside from the verbs of speech, which tend to ergative-mark their subjects (but cf. e.g., 7a), these verbs are intransitive; however the subjects sometimes bear ergative case if co-referential with the purposive subject, and there is an object present in the purposive clause, e.g., (6a, 9a). It is not clear whether there are any clearly transitive verbs that select clausal complements, or for that matter how meaningful the distinction is when the apparently intransitive subjects are ergative-marked.

This use as marking non-finite subordinate complement clauses is also reflected as complements of non-verbal predicates like ‘good’ or ‘how to’.

- (7) a. *Maringka-nya watja-ni palu-nya “piinta palya tju-nkunyjtaku.”*
Maringka-NOM say-PRS 3SG-ACC paint good put-PURP

(Source translation): Maringka said to her “That paint is good to put on.”

Papunya School (1986a, p. 8)

- b. CONTEXT: Title of an instructional list
Yaalytji yaalytji tjupi ngurri-nyjtaku.
how honey.ant seek-PURP

How to find honey ants.

(Source translation): Finding honeyants.

Papunya School (1986b, p. 13)

Dative-marking of clauses as complements is similarly analogous to purely nominal complements of the relevant verbs. As they are intransitive verbs (although cf. discussion above), nominal objects are dative marked.

- (8) *Ngayulu wiya yunytju-rri-ngkupayi warri-ku.*
1SG.NOM NEG desirous-INCH-HABIT cold-DAT

(Source translation): I don’t like the cold.

Rumiya warringka rumiya kulingka (Brown Napurrula 1986)

Although possible with both of these types of purposive clause, it is particularly clear with the clausal complement use of the purposive that these non-finite, ostensibly nominalised clauses do not need to appear at the edge of the matrix clause, indicating that they are integrated into the clause much the same as nominal objects are.

Nordlinger (2002) makes the point that non-finite ‘nominalised’ clauses in many Australian languages are not necessarily really nominal in a broader sense. Purposive clauses in Pintupi-Luritja have many characteristics that are unlike those of nominal phrases– they exhibit a great freedom of word ordering (unlike noun phrases, which have stricter ordering possibilities for at least some of their elements), they seem to sometimes allow elements to ‘escape’ into the matrix clause and be discontinuous with the purposive clause, they are marked as purposive on the verb regardless of its position in the purposive clause (unlike the edge-marking of case on noun phrases), and they allow a number of more typical clausal properties, such as clitic arguments (33a) and negation (4c). The question of how nominal these clauses are is not essential to the points addressed here.

- (9) a. *1970-ngka yanangu tjuta-ngku waarrka palu-nya palya-ntjaku*
1970-LOC person many-ERG work DEM-ACC do-PURP
yunytju-rri-ngu...
desirous-INCH-PST...

In the 1970’s people wanted to do this work...

Kantawarra, Sabrina & Papunya School (1994, p. 4)

- b. *Nganti-lpi yanangu tjuta wangka-ngu puuta-mila-nyjtaku tjana*
after-then people many say-PST vote-LOAN-PURP 3PL.NOM
ngulu-rri-ngu.
afraid-INCH-PST

(Source translation): However many people were saying afterwards that they were too frightened to vote.

Papunya Literature Production Centre (1987c, pp. 4–5)

3.3. The Purposive Expressing Root Modality

The final main use of the purpose suffix is a modal one. Typically these clauses mark deontic (weak) necessity (i.e., express a modal force in the realm of English ‘should’ to ‘must’). This use differs from the non-finite examples above in that there is no other tensed verb in the clause (see (34) in the Appendix A for further examples).

(10) Deontic: □P

‘It must be that P (in view of the rules/norms)’

- a. *Anangu tjuṯa-ngku kuwarri-tja irriṯi-tja-tarra palya-nytjaku.*
 people many-ERG now-NMLZ old.times-NMLZ-also do-PURP

(Source translation): The people **should** do the old ways and the new ways.

[Papunya Literature Production Centre \(1987e, pp. 22–23\)](#)

- b. *Nganana Katutja-ku wangka kutju kuli-ntjaku, yanangu-kunu wangka wiya.*
 1PL.ERG God-DAT speech only listen-PURP person-CONC speech NEG

We must listen only to the word of God, not to that of people.

(Source wording): We **must** obey God rather than any human authority.

[Tjakultjurinkunyntja/ Acts 5:29](#)

- c. *If nyuntu-paka mungatūmungatū ngalya a-nu overseas-tjanu,*
 if 2SG.NOM-perhaps recently hither come-PST overseas-ABL
nyuntu nyina-nytjaku ngurra-ngka...
 2SG.NOM stay-PURP home-LOC

(Source translation): If you’ve just come back from overseas you **must** also stay at home...

Video: [Northern Land Council \(2020, pp. 5.30–5.37\)](#)

In the examples above, the purposive suffix is clearly indicating (weak) deontic necessity; in many cases this usage is tantamount to an imperative. This seems to be the typical modal reading of the purposive clause, but the purposive can express (or is at least complicit in) a wider range of root modal readings.

One of these is deontic possibility (‘can’, or ‘may’). Although the purposive clause is judged as not appropriate in elicitation for deontic possibility, there are some examples where possibility readings are natural; in these cases the readings suggest that the actor ‘can’ rather than ‘must’ undertake the action in the clause (see (35) for further examples).

(11) Deontic: ◇P

‘It can/may be that P (in view of the rules/norms)’

- a. CONTEXT: Talking about rules for going on the dodgem cars.

Mutukayi wiima tjuṯa-ngka wiima tjuṯa kutju kalpa-nytjaku, yanangu tiṅa
 car little many-LOC little many only board-PURP person large
tjuṯa wiya.
 many NEG

(Speaker translation): In those little cars, only little kids **can** jump in, no big people.

[JAG1-20200815_ModalsLM; 32.57–33.07]

- b. *Ngayulu tjapi-lku nyuntu-nya ngana-lu-paka kuli-ntjaku wangka*
 1SG.NOM ask-FUT 2SG-ACC who-ERG-perhaps listen-PURP speech
ngaatja ngali palya-nu-tja...
 DEM 1DU.ERG make-PST-NMLZ

(Prompt): I will ask you who **can** listen to the recordings we make...

[JAG1-20200229_TranslatingIS3; 0.20–0.41]

[JAG1-20200303_TranslatingIS2; 28.24–28.34]

The modality imparted by the purposive also goes beyond deontic readings. The purposive suffix is also used for bouletic necessity (i.e., ‘must in order to fulfil a wish/desire’).

(12) **Bouletic:** □P

‘It must be that P (in order to fulfil a wish/desire)’

- a. *Tjupi-ku yunytju-rri-ngkula nyurrangarri ya-nkunyjtaku tjata-kutu*
 honey.ant-DAT desirous-INCH-MV 2PL.NOM go-PURP bush-ALL
watiya tjuta-wana ngurri-ri-nkunyjtaku.
 tree many-PERL search-?around-PURP

(Source translation): If you want to find some honey ants, you **should** go into the scrub and look around all the trees.

[Papunya Literature Production Centre \(1989, pp. 4, 7\)](#)

- b. *Katjita palu-nya kuli-lkitja unytju-rri-ngkula, piipa palu-nya*
 cassette DEM-ACC listen-INTENT desirous-INCH-MV paper DEM-ACC
nya-kukitja unytju-rri-ngkula, nyuntu kuula-kutu ngalya-nkunyjtaku.
 see-INTENT desirous-INCH-MV, 2SG.NOM school-ALL hither.come-PURP

(Source translation): If you want to listen to the cassette or read the books you **should** come to the school.

[Papunya Literature Production Centre \(1987a, p. 17\)](#)

Some uses of the purposive suffix also convey both strong (□) and weak (◇) ability/circumstantial readings (see (36) for further examples).

(13) **Circumstantial:** □P

‘It must be that P (in view of the circumstances)’

- Yanangu-ngku kala kutjukutju-ngku panya mara-ngku kutju palya-nyjtaku.*
 people-ERG PRT one.by.one-ERG PRT hand-ERG only do-PURP

(Source translation): Until this equipment comes, people **have to** share one hand pump.

[Papunya Literature Production Centre \(1982, p. 10\)](#)

(14) **Ability/Circumstantial:** ◇P

‘It can be that P (in view of general capabilities/circumstance)’

- a. MANTJI-NTJAKU: *Kantina-ngka nyurrangarri man-tjarr-angku*
 get-PURP canteen-LOC 2PL.ERG money-COMIT-ERG
mantji-ntjaku, kuka luuki-tarra, mangarri waru-tarra ngalku-nyjtaku.
 get-PURP meat chook-also food hot-also eat-PURP

TAKE-AWAY: In the canteen you can get (if you have money) chicken and hot food to eat.

(Source translation): TAKE-AWAY: The take-away food bar is going well. We have hot, juicy chickens, hot pies and pasties and hamburgers.

[Papunya Literature Production Centre \(1982, p. 16\)](#)

- b. CONTEXT: The characters in the story have gotten lost driving around, and now have had to stop because it is so dark that they can no longer see.

'Wiila *paṭa-ra=laka* *nyi-na!* *watja-ṅu=ṅa*. 'Nya-kunytaku [sic],
 well wait-MV=1PL.IMP sit-IMP say-PST=1SG.Subj see-PURP
piku paka-nytjala'.
 moon rise-CIRC

(Source translation): 'Well let's sit and wait,' I said, 'and we'll **be able to see** when the moon comes up'.

Papunya Literature Production Centre (1987b, p. 24)

Note that regarding (14a), a speaker suggested the original is missing a letter; it should read *manitjarrangku* 'having money'.

The modality in some of these examples likely involves the purposive use of the suffix, as the purposive-marked verb is accompanied by a tensed matrix verb—e.g., (14b) could be seen as spanning the verb of speech: "Let us stay here and wait (I said) in order to see when the moon comes up." However examples like (14a) show that this cannot explain every case of possibility readings.

It's worth mentioning the fluidity of expression some speakers use when discussing some of these examples. For example, when discussing examples of circumstantial ability (14, 36), speakers would sometimes reframe them as bouletic or teleological (wish or goal oriented, respectively). This would involve reframing the issue from (adapting from 36c for example) "If you light a fire you are *able* to have a warm shower" to "If you want a warm shower, then you *have* to light a fire." Circumstantial ability modals are often also easily understood as what Yanovich calls *symbolletic* modals, where the speaker is urging the addressee to take an action (Yanovich 2014a); adapting from (36b), "You can search for honey-ants after rain has fallen (because that's when you find them)" can easily be understood as "You should go looking for honey-ants after rain has fallen (I can really recommend it!)". An anonymous reviewer also points out the ease with which some of these modal readings tie in with interpretations of inevitability; (adapting from 14b) "Let us wait, we're bound to see when the moon comes up." The related connection to general future readings is discussed in Section 5.

In fact there is (at least) one other modal flavour the purposive covers, namely what we might call *prophetic* modality. This modal flavour concerns what must be (or come to pass) in order for a prophecy to be fulfilled. This seems essentially teleological (goal based) in nature, but without any agency in fulfilling the goal; it is instead fulfilled by the (potentially unguided) unfolding of events. See the following apocalyptic example from the New Testament.

- (15) *Ngaa-kutu ngalya ya-rra, katu-kutu! Ninti-lku=ṅa=nta ngula*
 DEM-ALL hither come-IMP up-ALL teach-FUT=1SG.Subj=2SG.Obj later
ilkari-wana ngara-nytjaku, manta-wana-ṭarra ngara-nytjaku.
 heaven-PERL stand-PURP earth-PERL-also stand-PURP

(Source wording): And the first voice, which I had heard speaking to me like a trumpet, said, "Come up here, and I will show you what **must** take place after this."
 Tjukurrrpa Nyangutja/Revelation 4:1

These kinds of natural connections between modal flavours and forces are difficult to control for, and are a complication in investigating the possible readings of particular constructions.

Although the purposive suffix is involved with a range of modal meanings, it is important to distinguish the three differing uses of the purposive as outlined above, as they can be complicit in different types of modal and quasi-modalised meanings. For example, a common technique used in translating English prompts with deontic possibility modals

does involve a purposive-marked verb, but in the complement/non-finite use. The source of the deontic ability in the following examples is *palya* ‘good/fine/acceptable/permitted’, followed by a non-finite purposive clause. These are analogous to the use of the purposive in (7).

- (16) a. *Katutja-lu watja-nu pala tjuta palya nyuntu ngalku-ntjaku.*
 God-ERG say-PST DEM many good 2SG eat-PURP
 God said that it is fine for you to eat these things. ~◇P
 (Source wording): What God has made clean, you must not call profane.
 Tjakultjurinkunyitja/Acts 10:15
- b. *Palya ngalku-ntjaku bush animal tjuta-nya anta plants tjuta-nya.*
 good eat-PURP bush animal many-ACC CONJ plants many-ACC
 (Source translation): It is ok to eat traditional bush animals and plants. ~◇P
 Video: [SecureNT \(2020, 0.36–0.41\)](#)

All together the examples given here show that although the typical modal reading of the purposive suffix is (weak) deontic necessity (10), the purposive suffix in its various uses can cover a wide range of both modal flavours and strengths, including deontic possibility (11), bouletic necessity (12), circumstantial necessity (13), and circumstantial/ability possibility (14). This is despite it being judged generally inappropriate in elicitation contexts as a response to prompts with weak modal force (possibility, ◇). The obvious question is whether there are any generalisations about the environments that facilitate the various types of available readings. This is investigated in the following section, where we will compare the modality in the Pintupi-Luritja purposive clause with other cases of variable modality as reported in the literature.

4. Comparison with Other Cases of Variable Modality

This main-clause modal use of the purposive suffix likely diachronically represents a case of insubordination, where the complement-marking use of the suffix has extended to main clauses (Evans 2007). The close interconnectedness of purposive markers with both non-finite and modalised meanings has been noted cross-linguistically (Evans 2007; Haspelmath 1989) (both of these authors in fact give examples of purposive, infinitival and modal uses of the purposive suffix from other Western Desert languages, Pitjantjatjara (there spelt Bidjandjadjara) and Yankunytjatjara). The borders between the three uses are often not well-defined and it is often ambiguous whether particular examples are modalised or not; for example cases of indirect speech can be ambiguous between a non-finite complement-marking purposive, and a deontic purposive (cf. also 6b).

- (17) a. *Yalatji=ni watja-nu, ngaparrtji=na=nta pu-ngkunyitjaku.*
 thus=1SG.Obj say-PST in.turn=1SG.Subj=2SG.Obj hit-PURP
 It [the voice of Abel’s blood] spoke to me thus: I am to strike you in turn.
 OR: It told me to now strike you.
 (Not translated directly from any line in Genesis) Yurruntitja/Genesis 4: 8–10

Although we have seen variability between modal flavours, in this section let us consider more closely the question of variable strength in the Pintupi-Luritja purposive clauses. As mentioned, variable modal strength has been the subject of some attention in recent years, and is particularly associated with languages of North America; however, variable modal strength has also been reported in a particular set of environments, namely the modality associated with a range of nominalised and non-finite clauses in a number of languages (Bhatt 1999; Hackl and Nissenbaum 2012; Holl 2010; Holvoet 2001 2003; Šimík 2011; van der Auwera and Plungian 1998, p. 100ff). Following Bhatt (1999), these are often

called ‘covert’ modals. Modality in these environments is quite under-researched, and most work so far has been on Indo-European languages. Considering that the Pintupi-Luritja purposive clause is itself a non-finite/nominalised construction, we might wonder about the connection of its modal character to other languages with non-finite/nominalised modal constructions.

The exact modal character imparted by these constructions can be somewhat variable, as the following English examples demonstrate (18, 19). This ambiguity is common in these covert modal environments in languages in which it occurs, and appears to be heavily dependent on context (see works cited above). Note too that the non-finite constructions in these examples are similarly those used in English as purpose clauses and as clausal complements.

(18) **Purpose clause**

I left some dinner on the table for them to eat.

◇/□

(19) **The ‘BE to’ construction**

a. The books on the syllabus are to be read by next Wednesday.

#◇/□

b. Dodgem cars are only for little kids to get in. (cf. 11a)

◇/#□

It is an important question whether the variable force in examples like (18, 19) is the same as that described for variable force languages of North America (Deal 2011; Matthewson et al. 2005; Peterson 2010; Rullmann et al. 2008, i.a.). To the best of my knowledge this question has not been investigated at length, although Hackl and Nissenbaum (2012) ruminate on a connection in a footnote. We will not solve this question here, but we can investigate whether the variable force and flavour of modality expressed by the Pintupi-Luritja purposive clause as discussed above is comparable to the North American-style variable modality. This is thanks to a set of behaviours attributed to the modal readings in particular environments.

There are a number of analyses that have been invoked to explain variable strength modality, each making different predictions for the modal behaviour. Deal (2011) argues that the variable modality in a particular Nez Perce (Sahaptian) modal suffix involves (a lack of) scalar implicatures, due to the behaviour of the modal reading in downward-entailing environments. Jeretič (2020, 2021) describes a quite similar phenomenon in Ecuadorian Siona; although not exactly parallel to Deal, the essential reasoning in the analysis is the same, namely that it involves the lack of a scalar implicature. Abstracting away from the analysis itself here, Deal’s argument predicts that the modal exhibits uniform behaviour in downward-entailing environments; namely, that the modal force will be weak (i.e., possibility, ◇).

Recall that Pintupi-Luritja purposive clauses are typically interpreted as necessity modals, although some examples exhibit weaker modal strength. Following Deal (2011) and following work assuming analyses in this vein, the crucial testing points are in non-upward-entailing environments. These include the modal embedded below negation, in the antecedent of a conditional, and in the restriction of a universal quantifier. Jeretič (2020, 2021) expands the relevant environments to include two non-upward-entailing environments (not just downward-entailing ones); these are polar and *wh*- questions. Not all of these environments are easily tested in Pintupi-Luritja for reasons to be made clear, but some can be tested. We will see that these environments do not produce the same uniform readings reported for these other languages.

4.1. Negation and the Purposive Suffix

A Dealian account of the interaction between negation and the modal in question should result in a $\neg\Diamond P$ (‘it is not possible that P’) reading, or the logically equivalent $\Box\neg P$ (‘it must be that not P’). This is because negation is scoping above the modal, the force of which is taken to be underlyingly weak (◇). When the Pintupi-Luritja negative particle *wiya*

is included in the clause, the typical resulting reading is indeed a $\neg\Diamond P$ reading ('it is not possible that P'), often paraphrased as a $\Box\neg P$ reading. These constructions are very similar in their semantics to negative imperatives, and are often used as such. Note that the scope configuration is independent of the relative position of negation and the purposive-marked verb in the clause (e.g., as shown in 20b; see (37) for further examples). Note that the scope-taking properties of negation in Pintupi-Luritja awaits detailed investigation, but it is clear that it distinguishes itself from the behaviour of negation in the closely-related Pitjantjatjara (cf. e.g., Wilmoth 2020).

(20) **Deontic:** $\Box\neg P$ ($\equiv \neg\Diamond P$)
'It must be that not P'

- a. *Nyuntu nyina-ma watiya katu, wiya ngalya tjaru kati-nytjaku.*
2SG.NOM stay-IMP.CONT tree top NEG hither IDIOM climb-PURP

(Source translation): ... you stay sitting high up in the tree, **don't** come down...
Kungka mamu (Ferguson 1987a)

- b. *Papa tjuta payi-la payi-la yunngu tjarrpa-nytjaku wiya.*
dog many shoo-IMP shoo-IMP inside enter-PURP NEG

(Source translation): Animals are **not allowed** in the store.

Papunya Literature Production Centre (1986c, p. 12)

- c. *Tjintirtjintirrpa-ngku kapi yila-lpayi, "Wiya runga-ntjaku*
willie.wagtail-ERG water extract-HABIT NEG pelt-PURP
kapi=lampa wiya-lpayi-ngka.
water=1PL.DAT NEG-HABIT-LOC

(Source translation): The willie wagtails cause the rain clouds to come close by.
"You **should not** throw stones at them in case the clouds go away."

Hansen et al. (2011, p. 105)

Unfortunately due to the main-clause nature of these constructions, I have no examples where the negation is in a higher clause, which would ensure that it scopes above the modal reading. It is worth noting however that these readings reported here seem to be a recurring pattern with non-finite/nominalised modality; Holvoet (2003, p. 473) notes the triumph of $\Box\neg P$ readings over $\neg\Box P$ readings in the languages considered there, and the same holds for the English 'BE to' construction.

(21) You are not to leave this room. $\#\neg\Box P/\Box\neg P$

It is not totally clear whether negation can scope above deontic necessity ($\neg\Box P$ 'not have to') in Pintupi-Luritja purposive clauses. Although this construction (negation with the purposive suffix) would also occur in elicitation for deontic $\neg\Box P$, it was often ambiguous between a $\neg\Box P$ ('not have to') and $\Box\neg P$ ('must not') reading. This is presumably due to the illocutionary circumstances around uttering a $\neg\Box P$ sentence; often this is interpreted as the speaker telling the addressee not to do something—either as a politeness strategy, or due to other general circumstances relating to (not) actualising the event. Although the following prompts do say 'do not have to', in illocutionary terms they are closer to negative imperatives.

- (22) a. PROMPT: It's really busy at work and your boss says you have to do some extra work because it's so busy. The next day they come and tell you that they hired an extra person to work there, and say: "You don't have to do all that extra work

anymore!”

Nyuntu wiya palya-ntjaku warrka ngayulu nyuntu-nya tjapi-nu-tja,
 2SG.ERG NEG do-PURP work 1SG 2SG-ACC ask-PST-NMLZ
ngayu-ku malpa kutjupa-ngku ngayu-nya haalpa-mila-lku.
 1SG-DAT associate other-ERG 1SG-ACC help-LOAN-FUT

[Do not/You do not have to] do that work I asked you, my other associate will help me.

[JAG1-20200830_Modals; 10.08–10.20]

- b. PROMPT: A friend has a sore leg and finds it hard to walk, but wants to go to the shops. I tell him: “You don’t have to walk! I’ll drive you.”

Ayi! Tjina wiya ya-nykunyjtaku! Paṭa-la! Kuwarripa. Ngaatja Toyota
 INTJ foot NEG go-PURP wait-IMP soon DEM Toyota
ngalya a-nanyi.
 hither come-PRS

(Speaker translation): Hey! Don’t walk, wait! There’s a Toyota coming.

[JAG1-20200815_ModalsLM; 23.08–23.15]

Regarding the phrase *tjina wiya yanykunyjtaku!* in (22b), the speaker commented “Don’t walk! Or like you’re saying, You don’t have to go. . . You don’t have to walk, there’s a car there!” [22.30–22.50].

However, some examples can be found where negation does seem to scope above the modal, giving a $\neg\Box P$ ‘not have to’ reading. This example involves circumstantial rather than deontic modality.

- (23) **Circumstantial:** $\neg\Box P$ ‘It is not that it must be that P’ ($\equiv \Diamond\neg P$)
Ngayulu palya-nu ngali Tjiipana-lu mungatu=litju palya-ningi palatja
 1SG make-PST 1DU Steve-ERG recently=1DU.excl make-PST.CONT DEM
raka-pala waala-ngka tjilpi tjuta-ku tuulita palya-nyjtaku yila-nguru
 five-CARD house-LOC old.men many-DAT toilet do-PURP nearby-ABL
wiya tjata-kutu ya-nkunyjtaku.
 NEG dense.bush-ALL go-PURP

(Source translation): I built them— Steve and me, we built them a while ago, by the five houses for the old men, nearby so they **don’t have to** go out to the bush to go to the toilet.

Papunya Literature Production Centre (1987c, p. 7)

However, a factor which complicates the reading of (23) is that the purposive is being used as a purposive— this is not a main clause usage. The relevant clause, *wiya tjatakutu yankunyjtaku* ‘(for them) not to go into the bush’, occurs as an adjunct-like addition to the sentence, rather than the main-clause usage typically associated with modal readings. In this case then it is possibly more akin to “We built the toilets. . . for the purpose of not going into the bush.” If that is correct, then it’s unclear to me to what extent a modal reading is involved in this example, and whether it truly represents a $\neg\Box P$ reading.

This leaves open the question of how to unambiguously produce ‘not have to’ readings in Pintupi-Luritja. Bowen (2019) details the evidence for and consequences of misunderstandings of this sort in legal contexts in the Northern Territory. That kind of work shows the importance of a detailed understanding of modal expression in these kinds of linguistic environments, including traditional languages.

Although the possible scopal configurations with deontic modality are not clear, if we accept examples such as in (23) as *bona fide* modal readings, then we can conclude that both scope configurations are possible. Either way, there is a clear preference for $\Box\neg P$ ($\equiv \neg\Diamond P$) readings.

4.2. Other Non-Upward Entailing Environments

Several of the other non-upward-entailing environments mentioned are difficult to test in Pintupi-Luritja. Firstly, there are no unambiguously universal quantifiers. There are a number of quantifiers used across Western Desert languages that are ambiguous between meaning ‘all’, ‘many’, and just generally ‘a plurality of’; *tjuṭa* being the most commonly used in Pintupi-Luritja. These therefore seem similar to descriptions of Warlpiri *panu* (Bittner and Hale 1995; Bowler 2017). Although there are a small number of other elements in Pintupi-Luritja that look like possible candidates for expressing universal quantification, I have not investigated their syntax and semantics enough to be confident. Thanks to Sasha Wilmoth for pointing these elements out to me as possible candidates.

There are similarly no clear conditional structures in Pintupi-Luritja; occasionally an English-style conditional structure is used that borrows English ‘if’ (as in 10c), or a structure akin to ‘perhaps x; so y’. It’s also not clear whether the antecedent in the conditional structures borrowed from English maintain their downward entailing characteristics in Pintupi-Luritja as they are in English. Either way, I have no corpus examples of purposive clauses in these environments, and attempts to construct them are not obviously interpreted as modalised at all, but instead seem to involve general future-oriented readings.

- (24) PROMPT: (Sentence constructed by author)
If nyuntu Pupanyi-lakutu trayip-mila-ntjaku, watja-la ngayu-nya!
 if 2SG.NOM Papunya-ALL drive-LOAN-PURP say-IMP 1SG-ACC

(Speaker translation): If you want to go to Papunya, just tell me.

[JAG1-20201003_MaN2; 01.28–01.35]

In *wh*- questions, purposive clauses appear variable; some examples (25a, 25b) suggest more of a necessity reading, whereas examples such as (25c) more naturally suggest readings of possibility.

(25) *Wh*- question

- a. *Nyaa-ku-tarra=nyurra ninti-rrinytjaku?, Yitju-ku*
 what-DAT-also=2PL.NOM knowledgeable-INCH-PURP Jesus-DAT
wangka-ku=nyurra puntura ninti-rrinytjaku.
 word-DAT=2PL.NOM important knowledgeable-INCH-PURP

What else should you all learn of? You should learn deeply of Jesus’ word.
 (No direct translation from 2 Peter)

2 Piitakuṇu/Peter 1:5

- b. *Yaalytjiyaalytji Yitju-ku waarrkana nyina-nytjaku?*
 how Jesus-DAT worker be-PURP

How should Jesus’ workers live?
 (No direct translation from 1 Corinthians)

Heading introduction to 1 Kurinytjyalakutu/Corinthians 9

- c. (=11b)
Ngayulu tjapi-lku nyuntu-nya ngana-lu-paka kuli-ntjaku wangka
 1SG.NOM ask-FUT 2SG-ACC who-ERG-perhaps listen-PURP speech
ngaatja ngali palya-nu-tja...
 DEM 1DU.ERG make-PST-NMLZ

(Prompt): I will ask you who can listen to the recordings we make...

[JAG1-20200229_TranslatingIS3; 0.20–0.41]

[JAG1-20200303_TranslatingIS2; 28.24–28.34]

Polar questions similarly seem to be preferably interpreted as necessity modals (26a, 26b); however again some examples are much more naturally read as possibility modals (26c) (see (39) for more examples).

(26) **Polar question**

- a. PROMPT: (Sentence constructed by author) If you take your car to the mechanic, and you're not sure if it's ok to drive or not, could I go to the mechanic and ask:
Ngayulu mutukayi ngaatja trayip-mila-ntjaku?
 1SG.ERG car DEM drive-LOAN-PURP

(Speaker comment): *Ngayulu mutukayi ngaatja trayipmilantjaku*, that means "Do I have to drive this car?"

[JAG1-20201003_MaNg; 17.08–17.15]

- b. PROMPT: (Sentence constructed by author) You want to know if someone is able to swim when you take them to the pool. Can you ask:
Nyuntu tjurrpi-nytjaku?
 2SG.NOM swim-PURP

(Speaker comment): *Nyuntu tjurrpinytjaku*– that means "You have to swim." ... That means I'm a little bit forcing her to swim.

[JAG1-20201003_MaNg; 18.11–18.18, 19.08–19.23]

- c. *Yaalytji nyuntu kuli-ŋi? Tjarrityi-angka tjinguru ngangkari-tjarra-ngku*
 how 2SG.NOM think-PRS Saturday-LOC maybe healer-COMIT-ERG
miinta palya-ntjaku, tjinguru wiya?
 sickness fix-PURP maybe NEG

What do you think? Can the healer perhaps cure a sickness on Saturday or not?

(Source wording): ... and they asked him, "Is it lawful to cure on the Sabbath?"...

Maatjuwukunu/Matthew 12:10

An anonymous reviewer wonders whether the addition of *palya* 'good/fine/acceptable/permitted' to the sentences in (26) would change the reading to possibility, analogous to the complement-marking use to achieve possibility readings seen in (16). Unfortunately I do not have an answer to this, but if so would demonstrate the importance of understanding exactly which use of the purposive in each instance is determining meaning (i.e., main clause modal, or complement marking).

These examples suggest prevailing variability in non-upwards-entailing environments, with a tendency towards strong (□) readings. This does not mirror the more unified behaviour as possibility modals reported for other languages.

4.3. Interactions with the Exclusive Particle 'Kutju'

It's worth recalling that some of the clearest sentences shown to have weak modal readings (◇) include the exclusive particle *kutju*, such as (11a) repeated below, or (27b). These sentences naturally exhibit readings of possibility, rather than necessity. Note that *kutju* associates with material immediately to its left.

(27) a. (=11a)

CONTEXT: Talking about rules for going on the dodgem cars.

Mutukayi wiima tjuṭa-ngka wiima tjuṭa kutju kalpa-nytjaku, yanangu tina
 car little many-LOC little many **only** board-PURP person large
tjuṭa wiya.
 many NEG

(Speaker translation): In those little cars, only little kids **can** jump in, no big people.

≠ 'Only little kids have to jump in.'

[JAG1-20200815_ModalsLM; 32.57–33.07]

- b. *Nyurrangarri mara paltji-ra kutju ngalku-ntjaku, luwu=lampa yalatji*
 2PL.ERG hand wash-MV **only** eat-PURP law=1PL.DAT thus
ngara-nyi.
 stand-PRS

Only having washed your hands can you eat, thus stands our law.

(Source translation): For the Pharisees, and all the Jews, do not eat unless they thoroughly wash their hands, thus observing the tradition of the elders.

≠ 'Only having washed your hands do you have to eat.'

Maakakuṇu/Mark 7:3

We might wonder why this is the case; one possibility we could consider is a connection to downward entailingness. Although material associated with exclusives like 'only' (or here, *kutju*) is not downward-entailing in the classical sense, it has been argued that they do constitute a special type of downward entailment, namely Strawson Downward Entailment (von Fintel 1999), which has been argued to be relevant in, e.g., NPI licensing. Since we are investigating the role of downward-entailing environments it is worth considering whether this is behind the possibility reading of examples with *kutju* like (11a).

However there is a complication here; some sentences including the purposive and an exclusive particle seem to more naturally maintain a strong (\square) reading, as in the following.

- (28) "Ngayulu Katutja-nya yilta nyina-nyi, nyurrangarri ngayu-nya **kutju**
 1SG.NOM God-NOM true sit-PRS 2PL.ERG 1SG-ACC **only**
pulkapu-ngkunyjtjaku."
 praise-PURP

I am truly God, you all must praise only me.

(Source wording): ...so that he takes their seat in the temple of God, declaring himself to be God.

2 Tjitjaluniyalakutu/Thessalonians 2:4

However this appears to be symptomatic of a more general relationship between modal readings and exclusives; another paraphrase for the English translation of (28) that I would deem equivalent is 'You only can praise me', with a possibility modal. There is unfortunately no space for detailed investigation here, but this connection between modal strength and exclusives appears to be a more general phenomenon; the role of (Strawson) Downward Entailment in determining this relationship is not clear at the moment.

The examples in these sections have shown that there is non-uniformity in modal readings in non-upward-entailing contexts. Although several of the non-upward-entailing contexts are compatible with the purposive suffix having an underlyingly weak modal reading (\diamond), particularly negation, the facts are not conclusive. Firstly, although negation in these cases strongly prefers a 'must-not'/'not-can' reading ($\square\neg \equiv \neg\diamond$), we have seen that some examples hint that the opposite scope pattern ('not-must'/'can-not', or $\neg\square \equiv \diamond\neg$) might also be possible (23); although the somewhat unclear boundaries between *bona fide*

modal readings and purpose clauses make these examples less conclusive. Examples of *wh*-questions (25) and polar questions (26) show variability, with a tendency towards strong readings. The antecedent of conditionals, to the extent that they have been investigated, do not clearly exhibit a modal reading at all (24).

5. The Connection to Modality in Non-Finite and Nominalised Contexts

The examples given here demonstrate a greater degree of non-uniformity in modal force than reported elsewhere. However this behaviour does bear resemblance to non-finite/nominalised ‘covert’ modals as described by Bhatt (1999) and others. Firstly, the range of modal flavours found in the Pintupi-Luritja purposive clauses mirrors those described for covert modals; as Bhatt (1999, chp. 4) notes, these are typically deontic, ability/circumstantial, and bouletic modal flavours. Secondly, the scope interaction between the modal and negation similarly bears resemblance to interactions between negation and covert modal readings, as mentioned above (Holvoet 2003), which similarly prefer $\square \rightarrow P$ ‘must not’ readings. Furthermore, finally, the modal force in non-upward-entailing environments is similarly variable for non-finite/nominalised modals (at least in English). Let us compare examples (24–26) with the possible modal and non-modal readings in the following English ‘BE to’ examples. These demonstrate that the modal character conveyed can similarly fluctuate between possibility, necessity, and future readings in non-upward entailing environments (examples are from the British National Corpus (distributed by the University of Oxford on behalf of the BNC Consortium), and include text and sentence identifiers. All rights in the texts cited are reserved).

(29) ‘BE to’– *Wh*- question

a. $\# \diamond / \square / \text{future}$

Furthermore, **who is to run up and down after you**, in that event? Who is to answer your demands and cook for you and carry your meals?

(AD1 2536, 2537)

b. $\diamond / ? \square / \text{future}$

Their ability to withstand high G-forces, extreme disorientation and lack of oxygen will be key factors in deciding **who is to travel** to the Soviet space station Mir.

(A3G 485)

c. $\diamond / \# \square / \text{future}$

Certainly promises were made when Michael Knighton came to the club and doubts have now been cast on their ability to fulfil these, but if he does everything he has said **who is to complain**?

(A4P 106)

d. $\diamond / \square / ? \text{future}$

How then am I to counsel Mary in her distress and fascination?

(B2G 1732)

e. $\diamond / \square / \text{future}$

However, **what am I to do** when someone asks me for everything I know on Lake Malawi Cichlids (as happens fairly often).

(C96 1012)

(30) ‘BE to’– Polar question

a. $\# \diamond / \square / ? \text{future}$

Besides, she is to be got downstairs, and how is that to be managed? **Am I to sling her across my shoulders** in a fireman’s lift?

(AD1 2117)

b. $\diamond / \# \square / \text{future}$

Since therefore I am able to get from myself greatness of soul and nobility, **am I to get a farm or money or some office from you?** Far from it!

(B1F 154)

c. $? \diamond / ? \square / \text{future}$

By Satan's sweetbreads! **Am I to be troubled** by a skinny old fool in mirror shades? Away before I eat you! (CHA 312)

(31) 'BE to'– Antecedent of conditional

a. #◇/#□/future–desire

If you are to move about in the senior echelons of industry, this is an important ability to develop. (A6L 1200)

b. #◇/#□/future–desire

If you are to finish any piece of woodwork you must learn to live with faults and find ways to disguise them. (EFH 652)

Note the variability in readings in these environments compared to the corresponding unembedded, upwards-entailing versions (an anonymous reviewer also points out that the examples in (31) pragmatically function as purpose clauses). The overlap with future readings is also seen in a small number of Pintupi-Luritja examples such as the following, which do not have an obvious modal reading, but where the purposive-marked verb is the only verb in the clause (although it is plausible that this conveys a possibility reading, as "Perhaps you can tell a story?" Examples such as this further demonstrate the difficulty in teasing apart what are often quite fluid modal readings).

(32) *Nyuntu-paka yara watja-nytjaku?*
2SG.ERG-perhaps story tell-PURP

(Source translation): Perhaps you have a story you would like to tell?

[Papunya Literature Production Centre \(1987a, p. 17\)](#)

Because of this, I suggest that the modal behaviour described here in Pintupi-Luritja purposive clauses is aligned more closely with non-finite/nominalised modals than those known from languages of North America. This may suggest that the source and nature of the modality in purposive clauses is different to those approaches. The fact that purposive clauses themselves are nominalised/non-finite clauses hints at a certain cross-linguistic uniformity in the environments that trigger covert modality, and to their behaviour. However the causes, nature, and variety of modality in these contexts cross-linguistically is still under-researched. Work towards a typology of variable-force modality (e.g., [Yanovich 2014b](#)) does not mention data from nominalised/non-finite 'covert' modals. I have suggested here that the behaviour of modality in Pintupi-Luritja purposive clauses points to it being of a different nature to these other cases described.

6. Conclusions

In this paper, we have seen the range of modal readings the Pintupi-Luritja suffix and its associated clause exhibit. Typically it expresses deontic necessity, but is implicated in a range of root modal readings, including (at least) deontic possibility, bouletic necessity, circumstantial necessity and possibility. We compared its behaviour to descriptions of some variable-force modals and tested the readings in non-upward-entailing environments ([Deal 2011](#); [Jeretič 2021](#)). These environments showed a range of readings which go against an analysis of the purposive being underlyingly a possibility modal. A connection was instead drawn to non-finite/nominalised 'covert' modals, both in terms of variable force and the range of modal flavours that the purposive suffix covers: deontic, ability/circumstantial, and bouletic ([Bhatt 1999](#), ch. 4). The fact that the purposive is a nominalised/non-finite clause suggests that there are deeper cross-linguistic facts about modality in these environments. A salient object of future research is then how nominalised/non-finite 'covert' modals figure into a typology of cross-linguistic variation in the behaviour of variable-force modality. The data here suggest that non-upward-entailing environments are important testing grounds for this variation.

I hope that this paper can also contribute to a greater understanding of the grammars of Western Desert languages, and other languages of the region. Modal expression seems to be one area where there is significant (micro-)variation between Western Desert languages (Bednall 2011, 2020; Bell 1988), and there seems to be parallels with neighbouring languages—the purposive suffix in Arrernte for example seems to mirror the patterns described here for Pintupi-Luritja (Wilkins 1989, p. 236f). Comparative work on this subject will also require further in-depth studies on a language-by-language basis. I hope that more in-depth research on individual languages can contribute to and facilitate further pan Western Desert studies and comparative work across traditional languages of Australia.

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Abbreviations

The following abbreviations are used in this manuscript:

□	Modal necessity
◇	Modal possibility
#	Infelicitous in this context
?	Questionable felicity
¬	Negation
≡	Logical equivalence
1, 2, 3	First, second, third person

ABL	Ablative case
ACC	Accusative case
ALL	Allative case
CARD	Cardinality
CIRC	Circumstantial
COMIT	Comitative case
CONC	'Concerning'
CONJ	Conjunction
CONT	Continuous
DAT	Dative case
DEM	Demonstrative
DU	Dual
ERG	Ergative case
excl	Exclusive
FUT	Future
HABIT	Habitual
IDIOM	Idiom
IMP	Imperative
INCH	Inchoative
INTENT	Intention
LOAN	Loan
LOC	Locative case
MV	Medial Verb
NEG	Negation
NMLZ	Nominalisation
NOM	Nominative case
Obj	Object
PERL	Perlative case
PL	Plural
PRS	Present tense
PRT	Particle
PST	Past tense
PURP	Purposive
Q	Question
SEM	Semblative
SG	Singular
Subj	Subject

Appendix A. Further Example Sentences

(33) Purposive marking non-finite complements (see 6)

- a. *Palulanguru=na tjapi-lku kungka kutju-lu=ni kapi yititju-*
 after.that=1SG.Subj ask-FUT woman one-ERG=1SG.Obj water give.water-
nkunytjaku, yalatji, "Turaama tju-rra!"
PURP thus drum place-IMP

Then I will ask a woman to give me water, like this: "Put down your vessel!"
 (Source wording): Let the girl to whom I shall say, "Please offer your jar that I
 may drink"...

Yurruntitja 24:10–14/Genesis 24:14

- b. *Walungurru-nya ngurrara tjuṯa piyuku wangka-ngu, yini panya*
 Kintore-NOM inhabitant many again say-PST name DEM
kuula-ku wiya waka-ntjaku yalatji “Kintuwa-nya”, waka-ntjaku yalatji,
 school-DAT NEG write-PURP thus Kintore-NOM write-PURP thus
 “Walungurru-nya”
 Walungurru-NOM

The people from Kintore again said not to name the school Kintore but rather Walungurru.

(Source translation): Finally, it was agreed in the meeting that the school should become known as Walungurru School to reflect the local community name...

[Papunya Literature Production Centre \(1987, pp. 36, 37\)](#)

(34) **Purposive marking expressing (weak) deontic necessity** (see 10)

- a. *Yanangu-ngku wangka walytja kanyi-nytjaku, wiya wangka*
 people-ERG language own keep-PURP NEG language
walyapala-kunu tju-nkunyjtaku, wangka Luritji kutu
 white.people-CONC put-PURP language Luritja continually
kunpu-ngka kanyi-nytjaku.
 strong-LOC hold-PURP

(Source translation): Furthermore, people said that Aboriginal people **must** look after their languages, and not mix up their languages with English. To keep Luritja strong forever, keep it separate from English.

[Papunya Literature Production Centre \(1987b, pp. 4–5\)](#)

- b. *Yulytja puntu-tjarra-ngku maralpa palu-mpa tjiipi ngulytju*
 belongings great-COM-ERG poor.man 3SG-DAT sheep tame
tjulya-ṅu-tja-ngka mirri pu-ngkunyjtaku.
 seize-PST-NMLZ-LOC dead strike-PURP
Maralpa palu-mpa tjiipi puu-pala ngaparrtji-ngku yu-ngkunyjtaku.
 poor.man 3SG-DAT sheep four-CARD in.turn-ERG give-PURP

The rich man, having taken the poor man's sheep, should be struck dead.

He must make amends and give the poor man four sheep.

(Source wording): “As the LORD lives, the man who has done this deserves to die;

he shall restore the lamb fourfold, because he did this thing, and because he had no pity.”

2 Tjamiyula 12:1-12/2 Samuel 12:5-6

- c. *Ngayulu kutu Katutja-ku waarrka manta-ngka palya-ntjaku.*
 1SG.ERG continually God-DAT work earth-LOC do-PURP

(Source wording): We/I **must** do the works of them who sent me.

Tjaanakunu/John 9:4

(35) **Purposive marking expressing deontic possibility** (see 11)

- a. *Tjilpi tjinguru ulkumanu wangka walytja wanga-payi. Paluru*
 old.man maybe old.woman language own speak-HABIT 3SG.NOM
ngalya-nkumytjaku ninti-ntjaku wiima tjuta-nya. Kuula ngaa-ngka
 hither.come-PURP teach-PURP little many-ACC school DEM-LOC
Anangu tjuta warrka-rri-nytjaku Literacy Centre ngaa-ngka.
 people many work-INCH-PURP literacy centre DEM-LOC

(Source translation): Old people who speak only Luritja **can** come to school to teach the children. Anangu **can** work in the literacy centre.

[Papunya Literature Production Centre \(1999, pp. 4, 6\)](#)

(36) **Purposive marking expressing ability/circumstantial possibility** (see 14)

- a. *Alatji-ku pipirri tina-nya nganana-tju tjungu-ngku watja-nytjaku*
 thus-DAT child big-ACC 1PL-EXCL together-ERG say-PURP
puntura-lingku, ngula tjana tjalpa-ngku rana-mila-nytjaku
 important-INTENS later 3PL.ERG self-ERG run-LOAN-PURP
ngurra-paka.
 community-perhaps

(Source translation): They said we should send our children to school with other white children to really learn these things and later they will **be able to** run their Communities.

[Papunya Literature Production Centre \(1986a, pp. 12, 14\)](#)

- b. *Tjiwiri-ngku pu-ngkula wiya-rri-ngkumytja-la nyurrangarri ya-nkumytjaku*
 water-ERG hit-MV NEG-INCH-NMLZ-LOC 2PL-NOM go-PURP
tjupi-ku.
 honey.ant-DAT

(Source translation): After rain has fallen, that is the time you **can** go looking for honey ants.

[Papunya Literature Production Centre \(1989, pp. 4, 7\)](#)

- c. *Tjaawa nyuwana-lpi ngara-nyi Yamunturrngu-la. Umpi nyuntu*
 shower new.one-then stand-PRS Mt.Liebig-LOC warm 2SG.NOM
kutja-nytjaku yunngu-tjayiti tjiwiri umpi-ngka-paka tjuti-ni-ngka.
 heat-PURP inside-side water warm-LOC-perhaps dribble-PRS-LOC

(Source translation): There are some new showers like this one at Mt Liebig. You **can** light a fire under the heater on the left and get hot water in the shower.

[Papunya Literature Production Centre \(1987c, p. 18\)](#)

- d. *Kaanytjala waarka-rri-payi tjuta-nya tjana waarka-tjanu*
 council work-INCH-HABIT many-ACC 3PL-NOM work-ABL
mangarri yinytja-nku tjana mangarri ngalku-nytjaku yuputju-ngka
 food gift-?? 3PL.NOM food eat-PURP office-LOC
wilurarra-tjayiti.
 west-side

(Source translation): These workers **can** get a good meal of stew everyday from behind the office because they work at the Council.

[Papunya Literature Production Centre \(1987a, pp. 2, 3\)](#)

- e. *Tjatalayiti tiitji kaanytjala-ngku ngalya-kati-ngu-tju yanangu tjuṭa-ngku*
 satellite dish council-ERG hither-bring-PST-NMLZ people many-ERG
nya-kunytjaku tiipiyi ngaa-ngka tawunu-ngka nguwanpa.
 see-PURP tv here-LOC town-LOC SEM

(Source translation): The satellite dish that the Council has bought means that people **can** watch television programs here like in Alice Springs.

[Papunya Literature Production Centre \(1987d, p. 2\)](#)

- f. *Anangu pipirri-tarra ngalya ya-nkunytjaku Rikiriyayitjin tjinta-kutu.*
 people children-also hither come-PURP recreation centre-ALL

Adults and children can come to the recreation centre.

(Source translation): The Centre will be open after school and on the weekend, for kids and anyone else interested.

[Papunya Literature Production Centre \(1986b, p. 4\)](#)

(37) **Purposive marking plus negation:** ‘Should/must not’ (see 20)

- a. *Wiima tjuṭa nyurrka-rri-nyi-lpi wiya wanti-nytjaku miinta-rri-payi-ngka.*
 little many weak-INCH-PRS-then NEG leave-PURP sick-INCH-HABIT-LOC

(Source translation): All the children are getting sick, **don’t** leave them to become ill.

[Papunya Literature Production Centre \(1986b, p. 21\)](#)

- b. *Yanangu tjuṭa nyurrangarri marrku-ntjaku, tjana wiya tjaatji*
 person many 2PL.ERG dissuade-PURP 3PL.NOM NEG church
ngaa-ngka tjarrpa-nytjaku.
 DEM-LOC enter-PURP

You must ward many people off, they **cannot** enter this church.

(Source wording): ... and no one could enter the temple...

[Tjukurrpa Nyangutja/Revelation 15:8](#)

- c. *Wiya pampu-ntjaku nyuntu-mpa-nu kuru kutjarra, mulya, tjaa.*
 NEG touch-PURP 2SG-DAT-CONC eye two nose mouth

(Source translation): **Don’t** touch your eyes, nose or mouth.

Video: [\(Northern Land Council 2020; 3.50–3.56\)](#)

(38) **Ability:** $\neg\Diamond P$ (It is not that it is possible that P) ($\equiv \Box\neg P$)

- a. *Kanya Kalitji-ngka tjana wiya ranuwayi-rri-nytjaku kutu*
 CONJ college-LOC 3PL.NOM NEG run.away-INCH-PURP continually
nyina-nytjaku kuula-ngka.
 sit-PURP school-LOC

(Source translation): Furthermore, if they go away to a college, they **can’t** run away and they’ll have to stay at school to learn.

[Papunya Literature Production Centre \(1986a, pp. 12, 14\)](#)

(39) **Polar questions**

(see 26)

- a. PROMPT: You and your friends decided to draw straws, and whoever pulls the short straw has to buy lunch for everyone. You do it but are not sure of the outcome and ask: “Do I have to buy lunch?”

Ngayulu-mpa payi-mila-ntjaku?
1SG.ERG-Q pay-LOAN-PURP

[JAG1-20201209_MaNg; 38.56–39.00]

- b. *Paluru Yiitju-nya tjapi-nu, “Katutja-lu watja-nu-tja nyaa-ku*
3SG.NOM Jesus-ACC ask-PST God-ERG say-PST-NMLZ what-DAT
ngayulu tjukaruru nyina-nytjaku?”
1SG.ERG correct be-PURP

He asked Jesus “Which of those things that God has spoken, do I need to live correctly for?”

(Source wording): “... If you wish to enter into life, keep the commandments.”
He said to him, “Which ones?”

Maatjuwukunu/Matthew 19:18

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