The meaning of antipassive: Evidence from Australian languages^{*}

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Existing semantic analyses of the antipassive morpheme capture scope facts but are unable to handle the non-culminating event reading which is found in Australian languages (among others). I develop a meaning for the antipassive that is able to capture this reading, and also account for the unexpected high-volitionality reading also found in some Australian languages. Finally, I turn to a typologically rare situation in two languages in which the antipassive construction is interpreted as denoting a culminated event with a fully affected object. I provide an account for this and show that there are formal similarities between the two kinds of antipassive, which may explain why the antipassive operator is used in the latter case even though it produces an interpretation of events which is apparently opposite to the more common non-culminating reading.

1 Introduction

The aim of this paper is to develop a formal semantic account of the antipassive operator (AP) as it occurs in Australian languages that is able to account for the various meanings conveyed by the antipassive construction. Given the wide variety of functions that antipassives display cross-linguistically, accurate generalisations regarding its meaning, let alone precise formal accounts, are notoriously difficult to make. Australian languages are no exception. In contrast with a corresponding transitive, antipassive clauses may have the following readings: non- or partially-affected object, no referential object, non-culminated, iterative, habitual, potential or desired events. These functions are typical in cross-linguistic typological surveys of antipassives, however the descriptions and details vary considerably (Heath, 1976; Hopper & Thompson, 1980; Foley & Van Valin, 1985; Cooreman, 1994; Givón, 1994; Spreng, 2010; Polinsky, 2017). Another reading that is exceptional for both formal and functional reasons is found in two Australian languages; in these languages the antipassive has a fully-affected, culminated reading with an object that appears to be headed by the universal quantifier. Clearly this function is at odds with those previously listed. I pursue a formal account of AP that builds on previous work by Wharram (2003) and Deal (2008) in which AP mediates the composition of a verb with a property-type object while also introducing modality based on the agent's intentions or goals for an event. I expand the kinds of modality available to AP by including bouletic and non-interruption ordering sources. I make the notion of non-culmination precise by introducing the *STAGE* relation proposed for the progressive operator (Landman, 1992), and show that many of the readings associated with antipassives arise from a requirement that a proper stage of the VP-event be instantiated in the actual world. Finally, I propose a situation-based framework to account for the exceptional readings. This allows us to formulate a meaning for this second kind of antipassive that is of

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the same type as the first, and which preserves the analysis of the object as a property that is existentially closed within vP.

1 Australian languages referred to in this paper

The languages referred to in this paper are listed in Table 1. All are members of the Australian language family. With the exception of Gangalidda they are also part of the large Pama-Nyungan family which stretches over the continent from the north-east to the south-west. So called “non-Pama-Nyungan” languages, which are in fact a set of families, are located in the northern parts of Australia. Most languages referred to in this paper are endangered, and some extinct.

Table 1: Language families and status (from Ethnologue.com)

Language	Language Family	Language Status
Djabugay	Pama-Nyungan, Yidinic	8a Moribund
Djapu	Pama-Nyungan, Yuulngu, Dhuwal	6a Vigorous (for Dhuwal, Djapu is a dialect)
Dyirbal	Pama-Nyungan, Dyirbalic	8a Moribund
Gangalidda (Yukulta)	Tangic	8b Nearly extinct
Guugu Yimidhirr	Pama-Nyungan, Guugu Yimidhirr	6b Threatened
Kala Lagaw Ya	Pama-Nyungan, Kala Lagaw Ya	5 Developing
Kalkatungu	Pama-Nyungan, Galgadungic	10 Extinct
Kuku Yalanji	Pama-Nyungan, Yalandyic	6b Threatened
Nyawaygi	Pama-Nyungan, Dyirbalic	10 Extinct
Pitta Pitta	Pama-Nyungan, Karnic, Palku	10 Extinct
Wargamay	Pama-Nyungan, Dyirbalic	10 Extinct
Warrongo	Pama-Nyungan, Maric	9 Dormant

These languages exhibit a range of antipassive functions which are summarised in Table 2. I have not included a column for non-referential object, as I assume this function is present in all languages. Extensive data on antipassives is lacking for most languages, therefore the blank spaces in the table may simply indicate that there is no evidence available that clearly indicates this function.

Table 2: Antipassive functions

Language	Non-culmination (accomplishments)	Preparatory- stage (achievements)	Iterative	Habitual	Desire	Universally quantified O	Syntactic
Djabugay							(✓)
Djapu		✓					
Dyirbal		✓		✓			✓
Gangalidda							✓
Guugu Yimidhirr	✓			✓			
Kala Lagaw Ya						✓	
Kalkatungu	✓	✓	✓	✓			✓
Kuku Yalanji						✓	
Nyawaygi		✓					
Pitta Pitta	✓	✓			✓		
Wargamay	✓						
Warrongo		✓		✓			

2 Overview of antipassives

2.1 Definition and morphological characteristics

The antipassive is a construction that contrasts with the transitive by demoting the argument corresponding to the transitive object¹ and thereby deriving an intransitive predicate (Polinsky, 2017). The term *antipassive* refers to the analogical demotion of the subject in a passive.² Morphological realisation of the construction varies considerably across languages. Canonical antipassives are found in morphologically ergative languages and are identified by the occurrence of absolutive case on the subject (instead of ergative), an oblique case such as dative on the object (instead of absolutive), and often some kind of marking on the verb. The example from Djabugay in (1) illustrates these features. The absolutive subject in the antipassive clause in (1b) particularly identifies it as intransitive, since this is also a feature of regular intransitive clauses (2).

- (1) DJABUGAY³
a.	Bama-lu	gurraa	duu-ny.
	man-ERG	dog.ABS	hit-PST
	‘The man hit the dog.’ (TR)		
b.	Bama	gurraa-nda	duu-yi-ny.
	man.ABS	dog-DAT	hit-INTRANS-PST
	‘The man hit the dog.’ (AP) (Patz, 1991: 299)		

- (2) DJABUGAY
Gulu	bama	gurraa-jada	gali-ng.
this.ABS	man.ABS	dog-COM	go-PRES
‘This man goes with a dog.’ (Patz, 1991: 270)			

Many Australian languages have a morphologically split-ergative case system based on nominal type. In Guugu Yimindhirr, for example, pronouns display a nominative-accusative case pattern (syncretism between transitive subject and intransitive subject) while common nouns are ergative-absolutive

¹ I continue to use the term *object* to refer to this demoted argument; this should be understood as “antipassive object” or “logical object”. The abbreviation “O” can likewise refer to either transitive or antipassive object.

² Dixon (1994: 149) says that Michael Silverstein coined the term *antipassive* in 1968 to describe the *-nga-y* construction in Dyirbal, a construction he had learned about during a course on Australian languages taught by Dixon. The first cross-linguistic commentary on the construction was a conference paper presented by Jacobsen in 1969 entitled “The analogue of the passive”, subsequently published as Jacobsen (1985).

³ Australian language examples have been converted to the standard practical orthography used by Australianists. I have modified case glosses throughout to reflect the surface morphological case patterns (not abstract/structural case, Legate, 2008) as follows: ergative-absolutive pattern (syncretism between intransitive subject and transitive object), nominative-accusative pattern (syncretism between transitive subject and intransitive subject), tripartite ergative-nominative-accusative pattern (no syncretisms). I have also segmented case suffixes from nouns in instances where the original source does not indicate the morpheme break. Where pronouns are glossed in the original source as ‘I’, or ‘you’, etc. I have given explicit person and number glosses, ‘1SG’, etc. Other modifications are noted where relevant. Abbreviations: ABL, ablative; ABS, absolutive; ACC, accusative; ADES, adessive; AP, antipassive; AUX, auxiliary; COMP, complementiser; CONST, constructive; CONT, continuous; DAT, dative; DEF, definite; DELOC, delocative; DES, desiderative; DIST, distant; DU, dual; EMPH, emphasis; ERG, ergative; F, feminine; FUT, future; GEN, genitive; HAB, habitual; IM, immediacy; INCH, inchoative; IND, indicative; INDF, indefinite; INST, instrumental; INTR, intransitive verbaliser; INTRANS, intransitiviser; IPFV, imperfective; IR, irrealis; LIG, ligative; LOC, locative; M, masculine; MNVAL, monovalent; NEG, negative; NF, non-feminine; NFUT, non-future; NOM, nominative; NP, noun phrase; NPAST, non-past; NPRES, non-present; NSG, non-singular; PART, participle; PASS, passive; PAST, past; PL, plural; PRES, present; PT, potent; PURP, purposive; R, realis; REDUP, reduplication; REM, remote past; SG, singular; TR, transitive; UNMKD, unmarked.

(syncretism between intransitive subject and transitive object). In this language therefore, a pronoun subject of an antipassive clause will be identical to the subject of the corresponding transitive clause (3). In (3b), only the verb marking and object case identifies the clause as antipassive.

(3) GUUGU YIMIDHIRR

- a. **Ngayu** ngalgal dubi.
1SG.NOM smoke.ABS leave.PAST
'I left my cigarettes/tobacco [lit. smoke]' (i.e., I didn't bring them). (TR)
(Haviland, 1979: 130)
- b. **Ngayu** ngalgaal-ga (/ngu) dubi-idhi.
1SG.NOM smoke-GOAL (-PURP) leave-REF.PAST
'I left off smoking; I've given up smoking.' (AP) (Haviland, 1979: 130)

Certain nouns in other languages display a tripartite pattern in which each grammatical function is marked distinctly and there are no formal syncretisms; Pitta Pitta (4) is an example. The key point is that in all systems the subject of an antipassive clause will exhibit the same case as the subject of an intransitive clause of the same nominal type.

(4) PITTA PITTA

- a. Nga-thu thaji-ka i-nha-ka kathi-nha.
1SG-ERG eat-PAST 3SG.M-ACC-HERE meat-ACC
'I ate the meat.' (TR) (Blake, 1979b: 207)
- b. Nganyja thaji-li-ya kathi-ku.
1SG.NOM eat-li-PRES meat-DAT
'I want to have a feed of meat.' (AP) (Blake, 1979b: 207)

Verbal marking in antipassive clauses varies cross-linguistically. In some languages the verb is marked with a distinct morpheme, such as *-yi* in Djabugay (1b) and *-li* in Pitta Pitta (4b). It is common for this morpheme to also occur in other kinds of detransitivised constructions such as reflexives and passives (Terrill, 1997), and as such receives varied glosses (or is left unglossed). In Guugu Yimidhirr the detransitivising morpheme forms a portmanteau that also indicates tense (3b). In Wargamay a verb will appear in a different conjugation in an antipassive clause as opposed to a transitive clause (5). Finally, antipassives in Kalkatungu lack any special verb marking when they occur as matrix clauses 0.

(5) WARGAMAY⁴

- a. Nyulangga bada **ngundalgani**.
3SG.ERG dog.ABS look.at.CONT
'He is looking at the dog.' (TR) (Dixon, 1981: 67)
- b. Nyunga **ngundabali**.
3SG.ABS look.at.CONT
'He is looking around.' (AP) (Dixon, 1981: 68)

(6) KALKATUNGU

- a. Martu-yu **thuyi** wakari nga-ji-wa-thangu.
mother-ERG cook fish.ABS 1SG-DAT-LIG-ABL
'Mother is cooking the fish from my [sc. wife].' (TR) (Blake, 1979a: 28)
- b. Martu maa-ji **thuyi**.
mother.ABS food-DAT cook
'Mother is cooking (food).' (AP) (Blake, 1979a: 27)

⁴ My glosses; these examples were not glossed in the original source.

Although antipassives are traditionally considered to be associated with ergative languages, this is no longer a widely accepted generalisation. Rather, antipassives are easier to identify in ergative languages due to the case change on the subject. Polinsky (2017) considers pseudo noun incorporation and noun incorporation to be expressions of antipassive, although she excludes differential object marking constructions on the grounds that these are not syntactically intransitive and therefore do not involve the demotion of the object. Opinion varies on the status of conative alternations (*I hit the dog* versus *I hit at the dog*); Polinsky suggests that these are best accounted for by lexical rules due to their restriction to certain lexical items; alternatively Deal (2008) proposes that conative alternations in English contain a covert antipassive operator. Certain Australian languages such as Warlpiri (Hale, 1973), Djaru (Tsunoda, 1981) and Goonyandi (Tsunoda, 1988) have a construction which has dative marking on the object and a similar semantics to antipassives, but which retains ergative marking on the subject. An example from Warlpiri is (7). I consider these to be a kind of conative alternation or differential object marking construction which remains transitive.

- (7) WARLPIRI⁵
a.	Nyuntulu-rlu	φ-npa-ju	pantu-rnu	ngaju.
	2SG-ERG	φ-2SG-1SG	spear-PST	1SG.ABS
	‘You speared me.’			
b.	Nyuntulu-rlu	φ-npa-ju-rla	pantu-rnu	ngaju-ku.
	2SG-ERG	φ-2SG-1SG-rla	spear-PST	1SG-DAT
	‘You speared at me; you tried to spear me.’ (Hale, 1973: 336)			

2.2 Antipassive functions

Antipassives perform a diverse set of functions cross-linguistically, with much of the literature dedicated to attempts to characterise and categorise these often disparate functions. Polinsky notes repeatedly that none of these functional correlates can be taken as defining, since none occur in all languages with antipassives. Nevertheless, certain generalisations do emerge. The kind of antipassive that concerns us in this paper has been variously labelled “semantic” (Cooreman, 1994), “backgrounding” (Foley & Van Valin, 1985) and “indefinite/category-linked” (Health, 1976). It participates in meaningful contrasts with corresponding transitive clauses and is generally considered to indicate low transitivity. The seminal paper that makes this claim is Hopper & Thompson (1980). In this paper the authors claim that antipassives are correlated with features that they classify as low transitivity indicators 0; transitives are conversely correlated with high transitivity indicators.⁶ Under their Transitivity Hypothesis, low and high features should not be systematically correlated with each other.

(8)	ERGATIVE	ANTIPASSIVE
	Verb codes two participants	Verb codes only one participant
	Perfective Aspect	Imperfective Aspect
	Total involvement of O	Partitive O
	Definite O	Indefinite O
	Kinetic/volitional V	Stative/involuntary V
	Active participation of A	Passive participation of A (Hopper & Thompson, 1980: 268)

⁵ “φ” represents a phonologically null auxiliary base (Hale, 1973: 310).

⁶ In Hopper & Thompson (1980) “A” stands for “Agent” and “O” for “Object”; these labels refer to the two participants in a two-participant clause and are not intended to reflect grammatical relations. “Ergative” refers to a transitive clause in an ergative language.

Semantic antipassives are commonly found when the object is non-referential or indefinite, or when the object is suppressed altogether. In Australian languages they are often described as allowing for the free omission of the object. Polinsky (2017) notes that while the object may not be expressed in antipassives it is still presupposed, making this a case of implicit object rather than pro-drop (Rizzi, 1986); antipassives remain semantically transitive (in the sense of implying an object). Givón (1994) treats these cases as indicating the low topicality of the object.

Semantic antipassives are also frequently correlated with some kind of atelic or imperfective reading, which also gives rise to the interpretation of the object as partially-affected or non-affected. These readings can be described as having an activity focus. A more detailed overview of the literature relating to this function is given in section 5.1; this is the main kind of semantic distinction focused on in this paper.

Another kind of antipassive that I will not be dealing with has been labelled “syntactic” (Dixon, 1994), “structural” (Coorman, 1994) or “foregrounding” (Foley & Van Valin, 1985), among others. This antipassive does not normally contrast meaningfully with the transitive. Instead, it is found in syntactically ergative languages and is used when the subject of a transitive verb is coreferential with an absolutive argument in another clause, ensuring the coreferential arguments both have absolutive case. This has been referred to as an “S/O pivot” (Dixon, 1994). Blake (1978) argues that Kalkatungu’s syntactic antipassive developed from a semantic antipassive. An alternate function which falls under the category of syntactic antipassive is its use as a marker of inverse argument relations as in Gangalidda (Keen, 1983; Denniss, 2007).

Certain languages have antipassives which seem to perform neither semantic nor syntactic functions. An example is Djabugay for which no discernable difference could be identified between the antipassive and transitive constructions, as seen in (9).

(9) DJABUGAY

- a. Bama-lu gurraa duu-ny.
man-ERG dog.ABS hit-PST
‘The man hit the dog.’ (TR)
- b. Bama gurraa-nda duu-yi-ny.
man.ABS dog-DAT hit-INTRANS-PST
‘The man hit the dog.’ (AP) (Patz, 1991: 299)

Patz (1991) suggests that there may have been a syntactic function which has been lost. For languages that have both a semantic and syntactic antipassive it is of course possible that the antipassive operator is a different but homophonous lexical item in each case. The presence of two phonologically distinct antipassive morphemes in Dyirbal, *ngay* and *rriy*, which correspond roughly to the syntactic and semantic functions respectively suggests this might be plausible. Another possible explanation is that the contrasting antipassive readings arise through conversational implicature when competing with the transitive. When an antipassive is required for syntactic reasons it is not in competition with the transitive and its meaning is strengthened. I leave aside these issues in this paper.

2.3 Previous semantic analyses

In formal semantic literature such as Wharram (2003) and Van Geenhoven & McNally (2005), many of the object-related features of antipassives are captured through treating the object as a property of type $\langle e, t \rangle$ rather than a type e individual. Deal (2008) further assumes that the property-type object is an NP instead of a DP, and that this is the source of its oblique case marking (for an overview of the various syntactic analyses of antipassives see Polinsky, 2017). The introduction of an antipassive operator (AP) mediates the composition of a property-type object with a verb by converting the verb’s basic entity-type object position to a property-type position. In Wharram’s denotation for AP in Inuktitut (10), AP composes first with a verb then with a property, providing existential closure over that property (Wharram follows Kratzer, 1996 in introducing the external argument through a higher voice head).

- (10) $[[AP]] = \lambda P_{\langle e, vt \rangle} \lambda Q_{\langle e, t \rangle} \lambda e. \exists x[P(x)(e) \ \& \ Q(x)]^7$
 (Wharram, 2003: 69)

This approach traps the existential low under vP, giving it an obligatory narrow-scope, non-specific interpretation (also known as the *de dicto* or opaque reading; see for example, Zimmermann, 1993). This is observable in West Greenlandic in the presence of higher sentential operators such as a modal operator (11), negation (12), and intensional verbs (13) (West Greenlandic examples via Deal, 2008).

(11) MODAL OPERATOR

- a. Atuartut ilaat ikiur-tariaqar-pa-ra.
 of.students one.of.them.ABS help-must-TR.INDIC-1SG.E/3SG.A
 ‘I must help one of the students.’
 $\exists x[x \text{ is one of the students} \ \& \ \text{it is necessary that (I help } x)]$
- b. Atuartut ilaa-nnik ikiu-i-sariaqar-pu-nga.
 of.students one.of.them-OBL help-ANTIP-must-INTR.INDIC-1SG.A
 ‘I must help one of the students.’
 It is necessary that ($\exists x[x \text{ is one of the students} \ \& \ \text{I help } x]$) (Bittner, 1987: ex 29)

(12) NEGATION

- a. Suli uqaasia puii-nngi-la-a.
 yet his.utterance.ABS forget-NEG-INDIC-3SG.ERG/3SG.ABS
 ‘He_i had not yet forgotten his_j utterance.’
 $\exists x[x \text{ is an utterance of his}_j \ \& \ \text{not yet (he}_i \text{ has forgotten } x)]$
- b. Suli uqaasia-nik puii-0-nngi-la-q.
 yet his.utterance-OBL forget-ANTIP-NEG-INDIC-3SG.ABS
 ‘He_i had not yet forgotten his_j utterance.’ (Bittner, 1987: ex 38)
 not yet ($\exists x[x \text{ is an utterance of his}_j \ \& \ \text{he}_i \text{ has forgotten } x]$)

(13) VERB WITH INTENSIONAL OBJECT POSITION

- a. Juuna-p atuagaq ujar-p-a-a.
 J.-ERG book.ABS look.for-INDIC-TRANS-3SG.3SG
 ‘Juuna is looking for the book/a specific book.’
- b. Juuna atuakka-mik ujar-lir-p-u-q.
 J. book-OBL look.for-ANTIP-INDIC-INTRANS-3SG
 ‘Juuna is looking for any book.’ (Van Geenhoven & McNally, 2005: 892)

In these cases the antipassive object is interpreted with narrow scope, contrasting with the wide scope interpretation of the transitive object.⁸ Since the existential is introduced by AP rather than a quantifier, the object is not able to quantifier-raise (QR) over the higher operator to take wide scope. Deal notes that this morphological contrast between wide-scope and narrow-scope holds even when there is no higher scope bearing element in the clause 0.

⁷ Semantic types used in this paper are as follows: *e* is the type of an individual, *s* is the type of worlds and situations, *v* is the type of events, *t* is the type of truth values.

⁸ It is unclear from Deal (2008) whether a narrow scope reading is also available for transitives.

(14) ANTIPASSIVE ALTERNATION WITHOUT HIGHER SCOPAL OPERATOR

- a. Jakku-p ujarak tigu-a-a.
 J-ERG stone.ABS take-TRANS.INDIC-3SG.E/3SG.A
 ‘Jacob took a/the stone.’
- b. Jakku ujaqqa-mik tigu-si-vu-q.
 J stone-OBL take-ANTIP-INTRANS.INDIC-3SG.ABS
 ‘Jacob took a stone.’ (Bittner 1987)

Property-type analyses have also been proposed for other constructions such as noun incorporation (Van Geenhoven, 1998; Van Geenhoven & McNally, 2005; Chung & Ladusaw, 2004) and Russian genitive of negation/intensionality, the alternation of accusative and genitive case under the scope of negation or intensional operators (Partee et al., 2012). These constructions share certain similarities with antipassive, including de-transitive morphology and the generalisation that the logical object is less-referential (indeed, Polinsky, 2017 treats noun incorporation as a morphological expression of antipassive). Under Van Geenhoven’s (1998) semantic incorporation account, verbs that participate in noun incorporation have an additional lexical entry that has an $\langle e, t \rangle$ argument position and that introduces existential closure over this argument. Chung and Ladusaw (2004) propose that property-type objects (such as indefinite NPs) compose with a predicate via predicate restriction (Restrict), an operation which does not saturate the internal argument position of the predicate but rather restricts its meaning. This argument position may be saturated later in the composition (giving rise to structures such as *I fruit-picked lemons*) or it may be closed by existential closure before the composition of the aspect head in AspP. Under both of these accounts existential closure occurs low, preventing the object from taking wide-scope, and giving rise to the non-specific interpretations.

There is a general assumption in the literature that property-type objects are not full DPs. However, pronouns, demonstrative phrases and even proper names can occur in these constructions, and in antipassives. Partee et al. (2012) investigate this issue and conclude that type-shifting to $\langle e, t \rangle$ occurs in these cases, causing a qualitative interpretation of the object and often a concomitant meaning shift in the verb, depending on its meaning-shift potential. Consider the different meanings of *ljubit* ‘love’ with human versus inanimate or abstract nouns; with humans, *ljubit* refers to the typical human to human love relation, whereas with inanimates it relates to a quality and commonly occurs in the genitive of negation construction. When a human DP such as ‘that singer’ occurs in GEN NEG, as in (15), it is interpreted as relating to some manifest qualities of the singer. This shift is assisted by the role-noun, but is also possible for some speakers with a regular human DP such as *èta ženščina* ‘that woman’ (16).

- (15) Ja ne ljubljù ètoj pevicy.
 I NEG love that.GEN singer.GEN
 ‘I don’t love that singer.’ (Partee et al., 2012: 17)
- (16) Ja ne ljubljù ètoj ženščiny, osobenno v bol’six dozax.
 I NEG love that.GEN woman.GEN especially in large doses
 ‘I don’t love that woman, especially in large doses.’ (Partee et al., 2012: 17)

Even proper names, the prototypical type *e* referential noun, can shift to a property meaning in a GEN NEG construction. In (17b), Maši is interpreted as ‘being Masha’, causing the verb *videl* ‘see’ to shift to ‘get visual evidence of the presence of something which is *P*’. With negation, this produces ‘didn’t glimpse any trace of Masha’ (Partee et al. 2012: 18). The authors note that this shift is particularly easy with verbs of perception.

(17)

- a. Ne videl Mašu.
 NEG saw Masha.ACC
 ‘He didn’t see Masha.’ (didn’t take the time to go see her, or ...)
- b. Ne videl Maši.
 NEG saw Masha.GEN
 ‘He didn’t see Masha.’ (no visual evidence ...) (Partee et al., 2012: 18)

Antipassive proper name objects appear to exhibit a similar interpretative shift. Deal (2008: 93) reports that in Nez Perce, names are interpreted as ‘somebody called x ’ instead of referentially. In West Greenlandic, as in (18), the name refers to ‘the concept of Jesus’. Names, pronouns and demonstrative phrases are all possible antipassive objects in this language.

- (18) Jesusi-mik taku-si-vu-q.
 Jesus-OBL see-ANTIP-INTRANS.INDIC-3SG.A
 ‘He saw Jesus.’ (Bittner, 1987: 196)

Deal (2008) develops the property-type analysis of antipassives further, observing that Wharram’s AP denotation creates the wrong scope relation when AP composes with an intensional verb. Consider the representation of (13b) in (19), which composes Wharram’s (2003) AP operator and Deal’s (2008: 101) denotation for the intensional verb ‘look for’.

Since AP composes with the intensional verb as its first argument, the existential that AP introduces scopes over the universal operator introduced by the intensional verb, resulting in $\exists x > \forall w$ instead of the attested $\forall w > \exists x$. This is also a problem for the semantic incorporation and Restrict operations. To fix this problem, Deal adds a layer of modality to AP itself following observations by Bittner that all antipassives

are world-creating: “The sets of worlds that the antipassives create are subjective worlds of the agent—worlds in which things are as he perceives them or intends them to be.” (Bittner, 1987: 225). This can be observed in (20): only the transitive entails that the agent left an actual hunting hut; the antipassive refers to anything the agent used as a hunting hut, such as a cave.

(20)

- a. Illuigaq qimap-pa-a.
hunting.hut leave-TRANS.INDIC-3SG.ERG/3SG.ABS
'He left a hunting hut.'
- b. Illuikka-mik qimat-si-vu-q.
hunting.hut-MOD leave-ANTIP-INTRANS.INDIC-3SG.ABS
'He left a hunting hut.' (Bittner, 1987: ex. 80)

Deal (2008: 97) proposes that this notion of intent can be incorporated into the meaning of AP via an accessibility relation: “There is some condition that holds in all the worlds in which the agent’s intent for that event is fulfilled. The event which is performed with some purpose in mind might then have this modal relation of intent directly associated with it. It is an event with telos” (Deal, 2008: 97). The formal expression of this teleological relation, a function from events to propositions, is in (21). The amended denotation of AP is (22).

(21) $\text{INTENT} = \lambda e. \lambda w. w$ is compatible with the intentions of the agent of e .

(22) $\llbracket \text{AP} \rrbracket = \lambda P_{\langle e \langle v, st \rangle \rangle} \lambda Q_{\langle e, st \rangle} \lambda e. \lambda w. \forall w' \in \text{INTENT}(e): \exists x. Q(x)(w') \ \& \ P(x)(e)(w')$
(Deal, 2008: 97)

Once this extra layer of modality is added, the correct scope is achieved in all cases. Since the property-type interpretation only occurs with intensional verbs that compose with the derivational antipassive morpheme *-si*, Deal notes that this is evidence against Zimmermann’s (1993) claim that intensional verbs in English take property-type objects in their basic form.

Note that in what follows I adopt some slight adjustments to (21) and (22). Firstly, to avoid the vacuous binding of w in (22), and to anchor e in w , I amend the type of the INTENT function to $\langle v \langle s, st \rangle \rangle$, as in (23).

(23) $\text{INTENT} = \lambda e. \lambda w. \lambda w'. w'$ is compatible with the intentions of the agent of e in w .

I also distinguish the event e that is asserted to occur in the actual world by the antipassive from the event described by the VP. The meaning of AP that I adopt henceforth is (24).

(24) $\llbracket \text{AP} \rrbracket = \lambda P_{\langle e \langle v, st \rangle \rangle} \lambda Q_{\langle e, st \rangle} \lambda e. \lambda w. \forall w' [\text{w' is compatible with the intentions of the agent of } e \text{ in } w] \rightarrow \exists e' \exists x [Q(x)(w') \ \& \ P(x)(e')(w')]$

3 Object drop

I now turn to Australian languages, seeking to build on Wharram and Deal’s approach by developing the meaning of AP in order to capture the facts as they pertain to these languages.⁹ The general property-type approach seems to be on the right track for antipassives in Australian languages, though direct evidence is difficult to obtain. Grammatical descriptions of the construction generally do not mention scope directly,

⁹ I assume that a phonologically null AP operator is present in languages which have no special overt verbal morphology in antipassive clauses.

nor do they provide negative evidence or describe additional possible interpretations. Further, Australian languages do not make an overt definite/indefinite distinction with nouns, a distinction which can be helpful in identifying specific and non-specific interpretations (though in many languages nouns can optionally occur with a demonstrative, see for example (4a)). One clear instance is illustrated by (25) and (26) from Kalkatungu, discussed by Blake (1978: 165).

- (25) Nga-thu nyini pati-nha thina-a a-ni lha-yi.
 I-ERG you tell-PST them-DAT COMP-you hit-AP
 ‘I told you to hit them.’ (AP) (Blake, 1978: 164)

- (26) Nyini-ti thuku pati-nha a-ngi ija?
 you-ERG dog tell-PST COMP-me bite
 ‘Did you tell the dog to bite me?’ (Blake, 1978: 164)

In (25) and (26) the matrix object is coreferential with the subordinate transitive subject; such a situation usually requires the (syntactic) antipassive to convert the transitive subject to an intransitive subject, as occurs in (25). In (26) however, the antipassive is blocked by the presence of the object clitic *=ngi*, since clitics can only cross-reference definite nouns.

The kinds of interpretations associated with antipassives in Australian languages are often contexts in which a generic or opaque object is typical, such as with habitual and intensional verbs (for example, ‘look for’, discussed in section 5.3). The clearest pattern consistent with the property-type analysis is the use of antipassive to allow for the free omission of the object, which is the case in (5), repeated here as (27).

- (27) WARGAMAY
 a. Nyulangga bada ngundalgani.
 3SG.ERG dog.ABS look.at.CONT
 ‘He is looking at the dog.’ (TR) (Dixon, 1981: 67)
 b. Nyunga ngundabali.
 3SG.ABS look.at.CONT
 ‘He is looking around.’ (AP) (Dixon, 1981: 68)

Although in Wargamay the object can also be dropped in a transitive clause when recoverable from context, Dixon (1981: 87) notes that it is usually expected to be overt. There is no such expectation in antipassives; in (27b) the verb is interpreted generically. This contrast is illustrated clearly in the Kalkatungu example (28), in which only the transitive clause receives a default third-singular object interpretation.

- (28) KALKATUNGU
 a. Thuku-yu ijayi.
 dog-ERG bite
 ‘The dog bit him/her/it.’ (TR)
 b. Thuku ijayi.
 dog.ABS bite
 ‘The dog bites.’ (AP) (Blake, 1982: 87)

This example illustrates the difference between pro-drop in transitive clause and implied objects in antipassives, discussed by Polinsky (2017). Antipassives that lack an overt object may receive a ‘something’ interpretation, as in the first clause of (29) and (30). I assume that in these cases there is a null element of type $\langle e, t \rangle$ rather than pro.

- (29) DJABUGAY
 Bama duu-yi-ng, guja-nggu jama gunday du-l.
 man.ABS hit-INTRANS-PRES 3SG.DIST-ERG snake.ABS perhaps hit-PRES
 ‘The man is hitting (something), perhaps he is hitting a snake.’ (Patz, 1991: 298)

- (30) DJABUGAY
 Ngawu buga-yi-ng, ngawu-nggu buga-ng minya.
 1SG.NOM eat-INTRANS-PRES 1SG-ERG eat-PRES fish.ABS
 ‘I am eating (something), I am eating fish.’ (Patz, 1991: 298)

4 Bouletic modality

At least two Australian languages have an antipassive that closely resembles the kind of teleological modality that Deal proposes for West Greenlandic. In Pitta Pitta (31–33) and Warrongo (34) the antipassive conveys the desire of the agent.

- (31) PITTA PITTA
 a. Pithi-ya nga-thu ina.
 hit-PRES 1SG-ERG 2SG.ACC
 ‘I am hitting you.’ (TR)
 b. Pithi-li-ya nganyja in-ku.
 hit-li-PRES 1SG.NOM 2SG-DAT
 ‘I feel like to hit you.’ (AP) (Blake, 1979b: 207)

- (32) PITTA PITTA
 a. Ingka-ka ina nga-thu.
 kiss-PAST 2SG.ACC 1SG-ERG
 ‘I kissed you.’ (TR)
 b. Ingka-li-ya nganyja in-ku.
 kiss-li-PRES 1SG.NOM 2SG-DAT
 ‘I desire you.’ (AP) (Blake, 1979b: 207)

- (33) PITTA PITTA
 a. Nga-thu thaji-ka i-nha-ka kathi-nha.
 1SG-ERG eat-PAST 3SG.M-ACC-HERE meat-ACC
 ‘I ate the meat.’ (TR)
 b. Nganyja thaji-li-ya kathi-ku.
 1SG.NOM eat-li-PRES meat-DAT
 ‘I want to have a feed of meat.’ (AP) (Blake, 1979b: 207)

- (34) WARRONGO
 a. Kuku-Ø ngawa-yal.
 talk-ABS hear-PURP
 ‘Sit and listen [to the talk].’ (TR)
 b. Kuku-wu ngawa-kali-yal.
 talk-DAT hear-AP-PURP
 ‘Want to listen [to the talk] properly.’ (AP) (Tsunoda, 1988: 604)

These examples can be understood as involving a bouletic relation which selects those worlds in which the agent's desires, rather than intentions, are fulfilled. This variation can be accommodated by allowing AP to compose with a DESIRE function such as (35), which differs minimally from INTENT.

(35) $\text{DESIRE} = \lambda e. \lambda w. \lambda w'. e \text{ is agentive and } w' \text{ is compatible with the desires of the agent of } e \text{ in } w.$

Note that since these relations appear to require an agentive event, I have made this explicit in (35). The denotation of AP is thus updated to (36), with the functions INTENT (23) and DESIRE (35) being attested instantiations of R .

(36) $\llbracket \text{AP} \rrbracket = \lambda P_{\langle e \langle v, st \rangle \rangle}. \lambda Q_{\langle e, st \rangle}. \lambda e. \lambda w. \forall w' [[R(w')(w)(e)] \rightarrow \exists e' \exists x [Q(x)(w') \& P(x)(e')(w')]]$

Applying this analysis to example (33b) above yields (37), which means roughly: there is an event e of which I am the agent, and in all worlds w' that are compatible with my desires in w , there is an event e' and an x such that x is meat and e' is an event of me eating x in w' .

(37) $\lambda w. \exists e [\text{Agent}(I)(e) \& \forall w' [[e \text{ is agentive and } w' \text{ is compatible with the desires of the agent of } e \text{ in } w] \rightarrow \exists e' \exists x [\text{meat}(x)(w') \& \text{eat}(x)(e')(w')]]]$

5 Atelic, non-affected interpretations

In addition to a desiderative meaning, the antipassive predicate *thaji* ‘eat’ in (33b) is translated as ‘have a feed’, while in the transitive it is translated as ‘eat’. This particular contrast is found in a number of other languages such as Guugu Yimidhirr (38) and Wargamay (39).

(38) GUUGU YIMIDHIRR

- a. Nyulu yarrga gada-y mayi buda-y.
 3SG.NOM boy.ABS come-PAST food.ABS eat-PAST
 ‘The boy came and ate the food.’ (TR) (Haviland, 1979: 129)
- b. Nyulu yarrga gada-y mayi-wi buda-adhi.
 3SG.NOM boy.ABS come-PAST food-DAT eat-REF.PAST
 ‘The boy came and had a good feed of food.’ (AP) (Haviland, 1979: 130)

(39) WARGAMAY

- a. Ngaja gun.gul mujalgani.
 1SG.ERG vegetables.ABS eat.CONT.UNMKD
 ‘I’m eating vegetables.’ (TR)
- b. Ngayba gun.gul-ndu mujabali.¹⁰
 1SG.NOM vegetables-INST eat.CONT.UNMKD
 ‘I’m having a feed of vegetables.’ (AP) (Dixon, 1981: 65)

Dixon notes that (39) represents his consultant’s exact translations. The difference in meaning is most clearly observable in the contrasting pair in (38). The transitive (38a) describes a culminated event in which all of the relevant food is consumed. In contrast, the antipassive (38b) lacks this notion of culmination, asserting only that an eating event took place; whether or not all the food is consumed is unknown from the description.

These examples illustrate the correlation of antipassives with atelic, or non-culminating, readings, in which the object is not fully affected by the described event. This correlation is typical cross-linguistically, and features prominently in the various attempts in the literature to categorise the functions of antipassives. Heath (1976) labels this function “category-linked” (to aspect). Hopper & Thompson (1980: 268) link antipassives to certain parameters they identify as indicating low transitivity, including imperfective aspect (a term they use interchangeably with atelicity) and partitive O. They cite Anderson’s (1976: 22) description of this function as it occurs in the West Circassian dialect, Bzhedukh: “the antipassive form in each case indicates that the action is carried out less completely, less successfully, less conclusively, etc. or that the object is less completely, less directly, less permanently etc. affected by the action.”

Terrill (1997: 82), discussing Australian languages, writes that antipassives often indicate “the unboundedness of the action; a continuous action, progressive action, habitual, action or irreality; and they often indicate a focus on process rather than result.” Polinsky (2017: 315–316) reports that “antipassives often have a special ASPECTUAL meaning: inchoative, inceptive, durative, progressive, imperfective or even iterative...in each case the antipassive may be associated with atelicity (the antipassive ~ imperfective correlation)”, though she notes that this association is not found in all languages. In addition, “whereas use of a prototypical transitive verb entails a change of state in the object participant, the corresponding antipassive cancels such an entailment...when a clause lacks overt mention of a participant affected by the event (incremental theme), the event is likely to be interpreted as incomplete” (Polinsky, 2017: 329). The link between telic predicates, which describe a culminating event, and fully affected objects is well-established (see, for example, Dowty, 1979, 1991; Tenny, 1987, 1994; Kratzer 2004; Krifka, 1986, 1989,

¹⁰ Dixon (1981) leaves *gun.gul-ndu* unsegmented, and glosses it ERG/INST since ergative and instrumental case are identical (as is the case in many Australian languages). I have glossed it INST as I reserve ERG for nominals in transitive subject function.

1992, 1998). Kratzer (2004: 393) puts it this way: “events culminate when the activity described by the verb has affected all relevant parts of the direct object referent.”

As is evident from these generalisations, the precise aspectual meaning contributed by the antipassive construction varies considerably across languages, and has been associated with both low aspect (atelicity) and viewpoint aspect (imperfective). The aim for the remainder of this section is to describe in more detail the facts as they pertain to certain Australian languages, and to provide a semantics for the antipassive operator that is able to capture these facts and while allowing for cross-linguistic variation.

5.1 Non-culmination

As observed for (38) and (39) above, clauses in the antipassive construction appear to describe a non-culminating event. This property is independent of their interpretation as perfective or imperfective: in (38), both transitive and antipassive are past tense and interpreted as perfective (I assume due to a null perfective operator); in (39) both clauses receive overt continuative morphology. Another example from Guugu Yimidhirr is (40) below; both clauses are past progressive (indicated by verbal reduplication), however in the antipassive the object treated as a goal rather than a theme.

(40) GUUGU YIMIDHIRR

- a. Nyulu ngamu-ugu gaymbaalmba-y.
3SG.NOM mother.ABS-gu curse.REDUP-PAST
‘He was cursing his mother.’ (TR)
- b. Nyulu ngamu-ugal gaymbaalmba-dhi.
3SG.NOM mother.ADES curse.REDUP-REF.PAST
‘He was cursing against his mother.’ (AP) (Haviland, 1979: 130)

Discussing this and other examples in Guugu Yimidhirr, Haviland (1979: 133) describes the antipassive as being used to “demote specific O NPs to the status of peripheral accessories to a generalised sort of action.” Thus the meaning contrast between the two types of construction appears to arise from the description of the VP event rather than from the relation between event time and reference time which is normally considered to be a core element of viewpoint aspect (Reichenbach, 1947).

Non-culmination can be observed both in the conceptualisation of the event as incomplete, and in the non- or partial affectedness of the object. Example (41) from Djapu illustrates.

(41) DJAPU

- a. Bala bu-ma-n nganya.
then hit-UNMKD-IM 3SG.ACC
‘Then (he) hits him.’ (TR)
- b. Bala bu-ma-n nhanngu.
then hit-UNMKD-IM 3SG.DAT
‘Then (he) hits at him [but does not touch him].’ (AP) (Morphy, 1983: 38)

In the transitive, there is a successful hitting event in which contact is made with the object; the object changes state from being not hit to being hit. In the antipassive, however, the hitting event was unsuccessful; no contact was made with the object, and the object has not been hit. Morphy (1983: 116) concludes: “In the TR construction the activity is conceptually completed. The goal is achieved: the object is ‘hit’ or ‘heard’. In the SEMITR construction the activity is conceived of as incomplete: the DAT-marked object is merely the goal towards which the activity is oriented.”

Kalkatungu also exhibits this contrast. Blake (1976: 286) says that the antipassive is “favoured if reference is to an action that is being directed towards a goal, as opposed to one that has been successfully completed.” (42) illustrates.

(42) KALKATUNGU

- a. Thuku-yu yuru ityai-nha.
 dog-ERG man.ABS bite-PST
 ‘The dog bit the man.’
- b. Thuku nguli ityai ruupu-wu ai ingka.
 dog.ABS CONT bite rope-DAT COMP.3s go
 ‘The dog keeps chewing at the rope to get away.’ (Blake, 1977: 79)

In the transitive sentence, the biting event is complete; the man is bitten. In the antipassive, the event is conceptualised as incomplete; the rope is not yet bitten through. Note that although this sentence also contains overt continuous marking (*nguli*), it expresses more than just the ongoing nature of the biting event. The agent has a particular purpose in mind when performing this action, namely to bite through the rope; it is an event with a telos that has not yet been reached.¹¹ This recalls Deal’s INTENT function, which retrieves the telos from the description of the event. The antipassive is also interpreted as iterative, involving multiple consecutive biting events; I will return to this point in section 5.2.

In his grammar of Kalkatungu, Blake (1979a: 44) characterises the distribution of antipassives in terms of focus: antipassives are used when “the patient is not the focus, and is of low information value”. As such, they express “indulgence in activity rather than a specific act of impingement on a patient”. (43) illustrates with the verb *thuyi* ‘cook’.

(43) KALKATUNGU

- a. Martu-yu thuyi wakari nga-ji-wa-thangu.
 mother-ERG cook fish.ABS 1SG-DAT-LIG-ABL
 ‘Mother is cooking the fish from my [sc. wife].’ (TR) (Blake, 1979a: 28)
- b. Martu maa-ji thuyi.
 mother.ABS food-DAT cook
 ‘Mother is cooking (food).’ (AP) (Blake, 1979a: 27)

A transitive clause is chosen to express the event of cooking a particular fish (43a), whereas an antipassive is used with a generic object (43b). Discussing this example, Blake (1979: 27) writes: “P is virtually redundant (and hence bracketed in the translation). One is not expressing what is being done to any particular food, but rather mother is ‘food-cooking’.” Note the link between the non-specificity of the object, a hallmark of antipassives, and the shift in the conceptualisation of the event as processual rather than resultative. Additional examples with an activity focus are in (44) and (45).

(44) KALKATUNGU

- Maa-yi ngai ari-li-nyin-ta unungkarti-ka yuan thuna.
 food-DAT 1SG.ABS eat-AP-PART-LOC wind.ABS-? big blow
 ‘While I was eating, a strong wind was blowing.’ (AP, INTR) (Blake, 1979a: 60)

(45) KALKATUNGU

- Haka nyin-ti jaa pirla-pirla uthantiyi maa-ji
 why.ABS 2SG-ERG here child-REDUP.ABS keep food-DAT
 ngunha thu-yi-mi-thi.
 ? cook-AP-FUT-LOC
 ‘Why do you have your kid with you while you are cooking the tucker?’ (TR, AP)
 (Blake, 1979a: 116)

¹¹ The antipassive is also required in this clause since its subject is coreferential with the subject of the intransitive subordinate clause; this is the syntactic or foregrounding function of the antipassive.

5.2 Iterative

With achievement verbs of contact, such as ‘hit’ and ‘bite’, the antipassive may cause an iterative activity reading, similar to what occurs in the English progressive. Examples from Kalkatungu are in (46–49).

(46) KALKATUNGU

- a. Thuku-yu thuarr ijayi.¹²
 dog-ERG snake.ABS bite
 ‘The dog bites/bit the snake.’ (TR) (Blake, 1982: 86)
- b. Thuku thuarr-ku ijayi.
 dog.ABS snake-DAT bite
 ‘The dog is biting the snake.’ (AP) (Blake, 1982: 86)

(47)

- a. Kuntu nga-thu lha-mi.
 not 1SG-ERG hit-FUT
 ‘I’m not going to hit him.’ (TR)
- b. Kuntu ngai lha-yi-mi kurlukurlu.
 not 1SG.ABS hit-AP-FUT again
 ‘I’m not going to hit him again.’ (AP) (Blake, 1979a: 54)

(48)

- a. Kupanguru-rtu jaa kalpin lhai-nha.
 old.man-ERG here young.man hit-PST
 ‘The old man hit the young man.’
- b. Kupanguru jaa kalpin-ku lhai-**minha**.
 old.man here young.man-DAT hit-IPFV
 ‘The old man is hitting the young man.’ (Blake, 1976: 286)

(49)

- a. Pirla-pirla marapai-thu lhayi-nha a-i ulyji-nta.
 child-REDUP.ABS woman-ERG hit-PAST COMP-3SG.NOM blood-INTR
 ‘The woman hit the child and he bled.’ (TR) (Blake, 1979a: 86)
- b. Nyini lhai-**minha**-n jurr-ku a-i ulyjinta.
 2SG.ABS hit-IPFV-2SG.NOM man-DAT COMP-3SG.NOM bleed
 ‘You are hitting him and making him bleed/so that he’s bleeding.’ (AP) (Blake, 1979a: 55)

Note that (48) and (49) additionally contain an overt imperfective morpheme *-minha*. The antipassive construction is in fact obligatory in clauses containing *-minha*, and near obligatory with the habitual suffix *-nyjangu*, though these overt morphemes are not necessary to create an iterative or habitual reading. I will return to the interaction with imperfective morphology in section 6.3. Note the contrast with *bu* ‘hit’ + AP in Djapu (41), which has a conative rather than iterative reading.

5.3 Achievement verbs of perception

With achievement verbs of perception, the effect of the antipassive is somewhat different. Consider the Kalkatungu sentences in (50) which contain the verb *nganthamayi*.

¹² Although the plain present ‘bites’ in English results in a habitual reading, it seems that the intention of the translation is to indicate a single biting event, thus the additional use of ‘bit’.

(50) KALKATUNGU¹³

- a. Jaa-ka lhuu nganthamayi jaa juruyan-ka kuntu ngarrpa-thu-ka
 here-Ø INT find here echidna.ABS-Ø not other-ERG-Ø
 jaa lhuu jipa-yi.
 here INT this-ERG
 ‘He found the echidna, no one else did. He found it himself.’ (TR) (Blake, 1979a: 96)
- b. Pirla-pirla mathu-unyji-ya-ku nganthamayi-nha panyjayi-nha.
 child-REDUP.ABS mother-his-LIG-DAT look.for-PAST very-PAST
 ‘The child searched very hard for his mother.’ (AP) (Blake, 1979a: 109)

In the transitive this verb is interpreted as ‘find’, whereas in the antipassive it is interpreted as ‘look for’. This pattern also occurs in Warrongo (51) and Nyawaygi (52).

(51) WARRONGO

- a. Nyula jaympa-n kajarra.¹⁴
 3SG.NOM find-NFUT possum.ABS
 ‘He found possums.’ (TR)
- b. Yinta jaympa-kali-ya yampa-wu.
 2SG.NOM find-AP-IMP camp-DAT
 ‘Look for the camp.’ (AP) (Tsunoda, 1988: 606)

(52) NYAWAYGI¹⁵

- Nyayba nyanggan-gu baarra-nya / ngaja nyangga-nya baarra-la-nya.
 1SG.NOM 3SG-DAT look.for-UNMKD 1SG.ERG 3SG-ACC find-I-PAST
 ‘I’m looking for it, I’ve found it.’ (AP / TR) (Dixon, 1983: 502)

The connection between the two interpretations could be expressed by paraphrasing ‘look for *x*’ as ‘aiming or trying to find *x*’. An event of looking for something can be understood as a preparatory stage of a (volitional) finding event; it is something the agent is doing in order to achieve their goal. Note that the predicate that the antipassive produces, ‘look for’, is a classic intensional verb in English which under one reading has an opaque, non-specific object (Zimmermann, 1993; Moltmann, 1997).

The verb ‘see’ also displays a meaning shift in the antipassive. In Djapu (53) it shifts to ‘look for’, in Nyawaygi (54) to ‘wait for’ and in Pitta Pitta (55) to ‘be on the look out’. These interpretations can all be characterised as preparatory stages to a seeing event: ‘looking for (in order to see)’, ‘waiting for (in order to see)’. *Ngaa* ‘hear’ is another verb that displays a similar shift in Djapu (56).

(53) DJAPU

- a. Ngarrij-thu nhaa-ma waayin.
 subsection.term-ERG see-UNMKD animal.ABS
 ‘Ngarrij sees the animal(s).’ (TR)
- b. Ngarrij nhaa-ma waayin-gu.
 subsection.term.ABS see-UNMKD animal-DAT
 ‘Ngarrij is looking for animal(s).’ (AP) (Morphy, 1983: 38)

¹³ “Ø” represents “a morpheme without referential content” (Blake, 1979a: x).

¹⁴ *n* NFUT is glossed P/P (past/present) in Tsunoda (1988).

¹⁵ I have indicated morpheme breaks in the verbs in Ngawaygi examples; these are unsegmented in the original source.

(54) NYAWAYGI

- a. Ngaja nyangganya nyaa-nya / minya-mbi-nya nyangga mujumuju.
 1SG.ERG 3SG.ACC see-UNMKD what-INCH-UNMKD 3SG.NOM woman.ABS
 ‘I’m watching the woman (to see) what she does.’ (TR) (Dixon, 1983: 499)
- b. Nyangga ngaygun-gu nyaa-gi-nya.¹⁶
 3SG.NOM 1SG-DAT wait-AP-UNMKD
 ‘He’s waiting for me.’ (AP) (Dixon, 1983: 497)

(55) PITTA PITTA

- Pipa-li-ya nganyja.¹⁷
 see-li-PRES 1SG.NOM
 ‘I’m on the look out.’ (AP) (Blake, 1987: 59)

(56) DJAPU

- a. Ngaa-ma nhii yurru rirrakay jamarrkurli-n.
 hear-UNMKD 2SG.NOM FUT voice.ABS children-ACC
 ‘You will hear the children’s voices.’ (TR) (Morphy, 1983: 115)
- b. Ngaa-ma nhuma yurru baapa-w rirrakay-wu.
 hear-UNMKD 2NSG.NOM FUT father-DAT voice-DAT
 ‘You will listen for your father’s voice.’ (AP) (Morphy, 1983: 115)

What counts as a preparatory event stage may vary across languages and predicates and give rise to subtle differences in the meaning of antipassives. Consider Dyirbal’s *rriy*-antipassive, which contrasts with the *ngay*-antipassive. Dixon (1972: 66) says that *ngay*-antipassives have the same cognitive meaning as transitives, and are used primarily in a syntactic function to feed Dyirbal’s S/O pivot. According to Dixon (1972: 91), *ngay*-antipassives refer to “actual action” while *rriy*-antipassives refer to the “potentiality of some action taking place”. This contrast is illustrated in (57).

 (57) DYIRBAL¹⁸

- a. Bayi yara jaban-du waga-na-nyu.
 there.ABS.I man.ABS eel-INST spear-*ngay*-NFUT
 ‘Man is spearing eels.’ (*ngay*-AP)
- b. Bayi yara jaban-du waga-y-marri-nyu.
 there.ABS.I man.ABS eel-INST spear-y-*rriy*-NFUT
 ‘Man is spearing eels.’ (*rriy*-AP) (Dixon, 1972: 91)

The sentence in (57a) indicates that man “has just found some eels and is at present spearing them”. The *rriy*-antipassive in (57b) however refers to a man who “has gone out on an eel-spearing expedition, but is not actually spearing any at the moment. He may have already found some eels, and have speared them all, and now be looking for more; or he may not yet have found any at all.” In this case, the fact that the man has left on his expedition seems to be conceptualised as an appropriate preparatory event to an eel-spearing event.

¹⁶ My glosses; this example was not glossed in the original source.

¹⁷ My glosses; this example was not glossed in the original source.

¹⁸ My glosses; these examples were not glossed in the original source. I have indicated morpheme breaks.

6 Deriving the activity reading

6.1 Incremental events

The generalisation that arises from these facts is that AP seems to create an activity interpretation from VPs that are normally accomplishments or achievements; that is, normally telic VPs. Consider accomplishment verbs such as ‘eat’ and ‘cook’. Rothstein (2004) considers accomplishments to be complex event predicates that consist of an activity and a telic point, with the template in (58).¹⁹

(58) Accomplishment template (Rothstein, 2004: 35)

$$\lambda e. \exists e_1 \exists e_2 [e =^s (e_1 \sqcup e_2) \wedge \text{Cul}(e) = e_2]$$

The telic point is determined by the lexical content of the VP, and comprises the point at which the verb’s internal argument changes state. The activity component is a series of incremental events that lead to that change of state. Rothstein, drawing on the work by Dowty (1979) and Krifka (1986, 1989, 1992, 1998), discusses a classic example *eat the sandwich*. This event consists of a series of incrementally larger eating events that have increasingly larger portions of sandwich as their argument. The event culminates when the entire sandwich is the argument of the event. At this point, the sandwich changes state from not eaten to eaten. This is represented in Figure 1.

Figure 1: Incremental event (=BECOME)

(Rothstein, 2004: 108)

I propose that AP selects one of these sub-events but not the entire event. If it cannot select the entire event, this excludes the telic point at which the object changes stage. This property is responsible for the non-affected, non-culminating readings, and also the focus on the activity or process, since this is the only portion of the event that is selected. A formal account of this claim will be developed in section 6.3.

With achievement verbs, AP creates a non-culminating predicate just as it does with accomplishments. However, it does so by treating the lexical content of the verb as the telos of the whole event, and introduces a prior activity stage that it then selects. Rothstein discusses a similar changes that occur in English with some achievement verbs in the progressive. Achievements are defined as near instantaneous changes of state from $\neg P$ to P . The basic template is (59).

(59) Achievement template (Rothstein, 2004: 35)

$$\lambda e. (\text{BECOME}(P))(e)$$

Since they are near instantaneous there is no sense in which they can be ongoing, therefore they are usually ungrammatical with the progressive (60–61). However, some achievements are acceptable in the progressive, as (62–64) show. In these examples, the reading of the achievement verb is shifted to a preparatory stage; (62) for example, can be paraphrased as ‘getting closer to the point of arrival at the station’.

¹⁹ Rothstein develops these templates in her book, but the basic ones are sufficient for our purposes.

- (60) #Jane is reaching the summit of the mountain.
- (61) #Mary is recognising John.
- (62) Mary is arriving at the station.
- (63) Dafna is finding her shoes.
- (64) The old man is dying.

Rothstein proposes a shift function, triggered by the progressive, which creates a coerced accomplishment predicate. This function identifies the lexically specified change of state instant as the event's culmination, and adds a prior activity stage which leads up to this change of state. This is formally expressed in (65).²⁰ I propose that AP, along with PROG, triggers this shift with achievement verbs.

- (65) $\text{SHIFT}(\text{VP}_{\text{punctual}}): \lambda e. (\text{BECOME}(P))(e) \rightarrow \lambda e. \exists e_1 \exists e_2 [e = {}^s(e_1 \sqcup e_2) \wedge (\text{DO}(a))(e_1) \wedge (\text{BECOME}(P))(e_2) \wedge \text{Cul}(e) = e_2]$ (Rothstein, 2004: 48)

This account is consistent with the meaning shifts that are attested in the antipassive with verbs of perception and also some verbs of contact, such as ‘hit’ in Djapu, ‘spear’ in Dyirbal and some instances of ‘bite’ in Kalaktungu that overtly specify a telos. However, in Kalkatungu, AP normally produces an iterative reading with ‘hit’ and ‘bite’ rather than a preparatory-stage reading. Although in these cases there is shift to an activity reading, there is no sense that the BECOME event is interpreted as the culmination; in fact, there seems to be no culmination implied. This also mirrors the interpretation of ‘hit’ and ‘bite’ with the progressive in English, and seems to be another way in which languages can resolve the mismatch that occurs when an achievement verb composes with an operator that requires a multi-stage event.

6.2 Relation between non-culmination and imperfectivity

Although non-culmination and imperfectivity are distinct, their semantic properties are similar. Consider the conative alternation in English, which expresses a non-culmination reading similar to (41) (and is in fact present in the translations of these examples). Polinsky (2017: 329) provides the following examples, which demonstrate that there is a culmination entailment in the transitive (66) but not in the conative alternate (67).

- (66) The hunter shot the bear #but he missed.
- (67) The hunter shot at the bear but he missed.

This recalls the Imperfective Paradox, illustrated below with examples from Landman (1992: 2). For activity predicates, the inference from past progressive to simple past is valid; (68a) entails (68b). However for accomplishments it is not; (69a) does not entail (69b), because Mary could have been interrupted before the circle was complete.

- (68)
- a. Mary was pushing a cart.
 - b. Mary pushed a cart.

²⁰ Note that there appears to be a typo in Rothstein (2004: 48) such that the first BECOME function is missing the P argument.

(69)

- a. Mary was drawing a circle.
- b. Mary drew a circle.

This difference arises from the telicity of the VP: accomplishments describe events with natural endpoints at which the event ceases, whereas activities lack such an endpoint. This is confirmed by the standard tests for telicity (e.g., Rothstein, 2004: 8) in (70–71).

(70) Mary pushed a cart for a few minutes/*in a few minutes

(71) Mary drew a circle in a few minutes/*for a few minutes

With English accomplishment verbs then, the culmination entailment that exists in the simple past is cancelled both by the progressive and the conative form. And, as demonstrated for Australian languages, this is also a property of antipassives. It seems reasonable to assume that the part of the meaning of the progressive that is responsible for these facts is also present in the meaning of AP (and possibly also the conative alternation, although this is outside the scope of this paper).

6.3 Modal analyses of the progressive

Analyses of the English progressive in the tradition of Dowty (1979) pursue a modal approach to capture its meaning. According to this approach, a progressive sentence (with an accomplishment VP) is judged true if the event it refers to can be considered to culminate in the set of inertia worlds, roughly those worlds in which the event develops normally. Landman (1992) implements this idea through a “stage-of” relation. The progressive, he proposes, requires that the event in the extension of the VP in the actual world be a stage of an event that culminates in some accessible world. Altshuler (2014) formalises this proposal with the meaning of PROG in (72).²¹

(72)

- a. $\llbracket \text{PROG} \rrbracket = \lambda P \lambda e' \exists e \exists w [\text{STAGE}(e', e, w^*, w, P)]$
- b. $\text{STAGE}(e', e, w^*, w, P)^{M, g} \Leftrightarrow$
 - (i) the history of $g(w)$ is the same as the history of $g(w^*)$ up to and including $\tau(g(e'))$
 - (ii) $g(w)$ is a reasonable option for $g(e')$ in $g(w^*)$
 - (iii) $\llbracket P \rrbracket^{M, g}(e, w) = 1$
 - (iv) $g(e') \subseteq g(e)$

Altshuler (2014: 752) explains (72) as follows: PROG “combines with a set of events P and requires an event e' that is instantiated in the action world w^* to be a stage of a P -event e in a ‘near enough’ world w . This requirement is encoded by the STAGE relation, whose semantics are spelled out in b: STAGE(e', e, w^*, w, P) is true iff (i) the history of the world denoted by w is the same as actual world up to and including the run time of the event denoted by e' , (ii) the world denoted by w is a reasonable option for the event denoted by e' , (iii) e has the property P in w , and (iv) the event denoted by e' is part of the event denoted by e .”

Landman’s criteria for determining whether a STAGE relation holds relies on the notion of worlds that are a “reasonable option” for the event denoted by e' . What counts as a reasonable option varies among authors who pursue the modal progressive account. I adopt the approach in Portner (1998), which uses a circumstantial modal base with a non-interruption ordering source to characterise the set of inertia worlds, using a Kratzerian modality (Kratzer, 1977, 1981, 1991). The circumstantial modal base is determined by

²¹ Altshuler (2014) addresses how PROG relates to an event time in subsequent sections of his paper.

context and contains the set of propositions relevant to the question of whether an event can be successfully completed. Consider Portner's (1998: 772) example in (73).

(73) At 7 o'clock, Mary was climbing Mount Toby

For the progressive sentence (73), the relevant propositions are facts to do with Mary's physical ability, general weather conditions and what Mary is doing up to 7 o'clock (74). The ordering source contains the set of propositions which rule out any interruptions to Mary's successful climb (75).

(74) $M(w) = \{ \text{'Mary is in good physical condition', 'Mary does not give up easily', 'It was raining lightly on Mount Toby at 7 o'clock', 'Mary was one third of the way up the Mount Toby trail at 7 o'clock', 'Mary was headed the right way on the trail at 7 o'clock' ...} \}$

(75) $O(w) = \{ \text{'Mary does not get eaten by a bear', 'Mary does not slip and hurt her ankle', 'A surprise summer blizzard does not start on Mount Toby', 'Mary does not get lost' ...} \}$

The set of inertia worlds are those that are best with respect to this modal base and ordering source: $Best(M, O, w)$. In this case, (73) is judged true because all these inertia world are ones in which Mary climbs Mount Toby.

The STAGE relation is responsible for the effect PROG has of cancelling the culmination entailment of an accomplishment verb, since it can be satisfied by a stage that does not include the complete event stage described by the VP. I propose that this relation is also part of the meaning of AP, and is what gives rise to the interpretation of the VP as non-culminating. Further, Altshuler (2014) demonstrates that English PROG requires proper event stages. This property causes the type-shifted preparatory readings with achievement verbs. Achievement verbs, he argues, consist only of an atomic stage which "develops into itself in the world of evaluation (and presumably in every other possible world)" (20). This atomic stage is identical to whole event, and therefore does not satisfy the requirements of STAGE, causing a coerced, or type-shifted, reading which includes preparatory event stages. Given that these type-shifted readings occur with achievements verbs in antipassive constructions, I propose that AP also has this requirement for proper event stages. The proper stage requirement also accounts for the non-culmination readings with accomplishment verbs, since the telic point of these events is only present in the entire event stage and therefore is identical to the event and not a proper part.

The key difference between PROG and AP, I suggest, is that AP does not relate the event time to reference time whereas PROG requires the reference time to be included in the event time. Since AP is located low within vP, this lack of reference to time seems unremarkable. Ferreria (2015) shows that the modal elements of PROG can be separated from 'ONGOing', the element that relates event time to reference time. If AP lacks reference to time, this predicts that it should be compatible with both perfective and imperfective operators located in AspP. As pointed out in section 5.1, this prediction is born out in the data. Combining AP with a higher PFV operator would have the effect of requiring the VP-stage to be included in the reference time. This would allow for both non-culminated and culminated readings in the past perfective, since it does not specify whether the whole event is included in the reference time or not. Combining AP with an IPFV operator (for example, PROG) would add the requirement that the VP-stage picked out by AP be ongoing at the reference time. The other modal elements of PROG would be redundant since they are identical to those in the meaning of AP. I suggest that this is what occurs in Kalkatungu, which exhibits similar progressive-like readings in antipassive clauses with or without additional imperfective morphology. I suggest that this similarity has conventionalised into a requirement that AP be used whenever the clause contains overt imperfective morphology. It is possible that this kind of process is the cause of antipassive being confined in certain languages to clauses marked with imperfective aspect, and of the syncretism that occurs in many languages between an antipassive morpheme and some kind of aspectual morpheme (Polinsky, 2017).

7 AP revised

The revised meaning of AP is given in (76). As noted above I assume a circumstantial modal base following Portner (1998), though it is possible this is a point of variation amongst languages. The ordering sources included are those which are attested in the data; others may also be possible and are likely to be the source of differences in modal flavour between languages and predicates. The use of a bouletic or intent ordering source subsumes non-interruption, since presumably all worlds in which the agent's desires are met are also those in which there are no interruptions to the agent's desires/intentions being satisfied.

- (76) $\llbracket \text{AP} \rrbracket = \lambda f_{\langle s, \langle st, t \rangle \rangle} \cdot \lambda g_{\langle s, \langle st, t \rangle \rangle} \cdot \lambda P_{\langle e, \langle v, st \rangle \rangle} \cdot \lambda Q_{\langle e, st \rangle} \cdot \lambda e$: g is bouletic (e is agentive and w' is compatible with desires of the agent of e in w) or intent (e is agentive and w' is compatible with intentions of the agent of e in w) or non-interruption. $\lambda w. \forall w' [\llbracket w' \in \text{Best} (\cap f(w)(g(w))) \rrbracket \rightarrow \exists e' \exists x [\llbracket Q(x)(w') \rrbracket \& \llbracket P(x)(e')(w') \rrbracket \& \text{STAGE}(e, e', w, w', P(x))]]]$

$\text{STAGE}(e, e', w, w', P(x))^{\text{M}, g} \Leftrightarrow$

- the history of $g(w')$ is the same as the history of $g(w)$ up to and including $\tau(g(e))$
- $g(w')$ is a reasonable option for $g(e)$ in $g(w)$
- $\llbracket P \rrbracket^{\text{M}, g}(e', w') = 1$
- $g(e) \subset g(e')$

To illustrate, consider an example involving the accomplishment VP ‘eat the food’ in (38b), repeated here as (77).

- (77) GUUGU YIMIDHIRR
 Nyulu yarrga gada-y mayi-wi buda-adhi.
 3SG.NOM boy.ABS come-PAST food-DAT eat-REF.PAST
 ‘The boy came and had a good feed of food.’ (AP) (Haviland 1979:130)

Since this sentence lacks any desire or intent meaning I assume a non-interruption ordering source. The logical form of this sentence is (78) (ignoring the intransitive clause and any higher operators such as tense).

- (78) $\lambda w. \exists e [\text{Agent}(ty \text{ boy}(y))(e) \& \forall w' [\llbracket w' \in \text{Best} (\cap f(w)(g(w))) \rrbracket \rightarrow \exists e' \exists x [\llbracket \text{food}(x)(w') \rrbracket \& \llbracket \text{eat}(x)(e')(w') \rrbracket \& \text{STAGE}(e, e', w, w', \text{eat}(x))]]]$

In words: there is an event e , such that the unique boy is the agent of e , and for all worlds w' such that w' is a member of the Best f and g (non-interruption) worlds, there is an event e' and there is an x such that x has the property of being food in w' and x is eaten in e' in w' and e is a stage of e' . In other words, the antipassive asserts that there is an ‘eating x ’ event in the actual world that is a proper stage of a larger event which occurs in all accessible worlds and which is a complete event of eating x . The requirement that e be a proper stage of e' excludes the telic point of e' , which is the total consumption of the food. It follows that the food is only partially eaten in the actual world, and that the event is incomplete and consists only of the activity portion of the non-antipassive VP’s meaning.

The only difference required to capture the meaning of (33b), repeated here as (79), is that the ordering source is bouletic.

- (79) PITTA PITTA
 Nganyja thaji-li-ya kathi-ku.
 1SG.NOM eat-li-PRES meat-DAT
 ‘I want to have a feed of meat.’ (AP) (Blake 1979b:207)

In this case the antipassive asserts that there is a stage of an ‘eating x ’ event going on in the actual world that develops into a complete ‘eating x ’ in all worlds compatible with my desires. The translation of (79) does not seem to require me to be currently putting food in my mouth. We can accommodate this by allowing the conceptualisation of the event to begin with the desire to eat, and which then develops into the complete eating event.

Finally, (81) shows how AP triggers a coercive shift with the achievement VP ‘find his mother’ in (50)b), repeated here as (80).

- (80) Pirla-pirla mathu-unyji-ya-ku nganthamayi-nha panyjayi-nha.
 child-REDUP.ABS mother-his-LIG-DAT look.for-PAST very-PAST
 ‘The child searched very hard for his mother.’ (AP) (Blake, 1979a: 109)

- (81) $\lambda w. \exists e[\text{Agent}(\iota y \text{ child}(y))(e) \ \& \ \forall w'[[w' \in \text{Best}(\cap f(w)(g(w)))] \rightarrow \exists e' \exists x [\text{mother}(\iota y \text{ child}(y))(x)(w') \ \& \ \text{find}(x)(e')(w') \ \& \ \text{STAGE}(e, e', w, w', \text{find}(x))]]]$

Since this sentence conveys the agent’s intention (to find), I assume the intent ordering source. The antipassive asserts, as expressed formally in (81), that there is an event e , such that the unique child is the agent of e , and for all worlds w' such that w' is a member of the Best f and g (intent) worlds, there is an event e' and there is an x such that x has the property of being the unique child’s mother in w' and x is found in e' in w' and e is a stage of e' . The antipassive’s requirement that e be a proper part of e' triggers a coercive shift since ‘find x ’ contains no proper parts. The complete event e' now consists of a preparatory activity (look for x) that culminates in the finding of x . This results in the assertion that a ‘looking for x ’ event stage is instantiated in actual world, which develops into an event that culminates in the finding of x in all worlds compatible with the agent’s intentions.

8 Habitual readings

Another reading of antipassive that I have not yet discussed is the habitual. At least four Australian languages use antipassive to express habitual events. Some examples are (82–88).

- (82) WARRONGO
 Kamukamu-ngku nyula pija-kali-n.
 grog-INST 3SG.NOM drink-AP-NFUT
 ‘He drinks grog all the time.’ (AP) (Tsunoda, 1988: 603)

- (83) WARRONGO
 Nyula manyja-ngku [or, manyja-wu] waju-kali-yal.
 3SG.NOM food-INST [food-DAT] cook-AP-NFUT
 Informant’s translation: ‘She’s a cook.’ (AP) (Tsunoda, 1988: 604)

- (84) KALKATUNGU
 a. Nga-thu wakari ngkaayi-nha yuku-ngku.
 1SG-ERG fish.ABS spear-PAST spear-INST
 ‘I speared a fish with a spear.’ (TR) (Blake, 1982: 79)
 b. Ngai wakari-i ngkaa-rli yuku-ngku.
 1SG.ABS fish-DAT spear-AP spear-INST
 ‘I spear fish with a spear.’ (AP) (Blake, 1982: 80)

- (85) KALKATUNGU
 Nga-ji papipi minhangarramayi-**nyjangu** karriyi-**nyjangu** murru-u.²²
 1SG-DAT father's.mother.ABS whatchamacallit-HAB clean-HAB camp-DAT
 'My granny whatchamacallits...eh...cleans the camp.' (AP) (Blake, 1979a: 108)
- (86) KALKATUNGU
 Kuntu nthiyi-**jangu** nga-ji
 not scold-HAB 1SG-DAT
 'She doesn't rouse at me.' (AP) (Blake, 1979a: 152)
- (87) DYIRBAL²³
 a. Bayi wuga-l-nga-nyu ba-gu-m jiga-gu.
 there.ABS.I give-*l-nga*-NFUT there-DAT-III cigarette-DAT
 'He is (now) giving out cigarettes.' (*nga*-AP) (Dixon, 1972: 91)
 b. Bayi wuga-yirri-nyu ba-gu-m jiga-gu.
 there.ABS.I give-*rriy*-NFUT there-DAT-III cigarette-DAT
 'He gives out cigarettes.' (*rriy*-AP) (Dixon, 1972: 91)
- (88) GUUGU YIMIDHIRR
 a. Ngayu ngalgal dubi.
 1SG.NOM smoke.ABS leave.PAST
 'I left my cigarettes/tobacco [lit. smoke] (i.e., I didn't bring them).' (TR)
 b. Ngayu ngalgaal-ga (/ngu) dubi-idhi.
 1SG.NOM smoke-GOAL (-PURP) leave-REF.PAST
 'I left off smoking; I've given up smoking.' (AP) (Haviland, 1979: 130)

Discussing this function in Warrongo, Tsunoda (1988) reports that antipassives may describe a habit, inclination or job, readings which are not possible in the transitive. The job reading, illustrated in 0, can be understood as a metaphorical extension of the habitual reading such as 'she cooks all the time'. As in common with habituals, the object tends to receive a generic reading. In Kalkatungu, a bare AP can receive a habitual reading (84b); antipassives are strongly preferred in clauses containing the habitual moroheme *nyjangu* (85–86).

Again, guidance for how to account for this reading comes from analyses of imperfective morphology. Ferreira (2015) accounts for a common cross-linguistic syncretism between progressive and habitual morphology by proposing that both PROG and HAB are instances of a imperfective operator (IPFV) that combines with singular (SG) and plural (PL) events respectively. When combining with SG, IPFV requires that the run time of the single event be ongoing at the reference time. This gives the progressive meaning. When combining with PL, IPFV requires the run time of the sum of a plurality of events (with property P) to be ongoing at the reference time. These events need not be adjacent. Thus *John plays soccer regularly* is true at a particular reference time if John has played soccer in the past and can be reasonably expected to play soccer in the future (see Ferreira, 2015: 31 for formal notation).

Given the other parallels with imperfective morphology, it seems reasonable to suggest that AP can also combine with either SG or PL in certain languages. When it combines with PL, the whole clause asserts that there is an event *e* which is a proper stage of a plurality of events *e'* with property *P*. I suggest that composing with PL is also what gives rise to iterative readings with 'hit' and 'bite', which, as stated earlier, is a feature of both AP and progressive.

²² The dative case on *nga-ji* is an adnominal dative which indicates possession (Blake, 1979a: 108).

²³ My glosses; these examples were not glossed in the original source. I have indicated morpheme breaks.

9 Universal object readings

In two Australian languages, antipassives have a reading which is exceptional for both formal and functional accounts. In Kala Lagaw Ya and Kuku Yalanji, the antipassive appears to introduce universal quantification of the object, the event it describes is complete, and the object is totally affected (I will call these “Type 2” antipassives for convenience). These readings are opposite to those discussed above (“Type 1”), and are considered markers of high transitivity by Hopper & Thompson (1980). It is also unclear how a property-type analysis could handle a quantified object. I present the data below, then suggest an analysis using a situation semantics approach as described in Kratzer (2016) that allows us to detect similarities between the two types of antipassive.

Consider first an example from Kala Lagaw Ya (89).

(89) KALA LAGAW YA

- a. Ngath nguangu inab koei puui pathadhin.
1SG.ERG myself this big tree.ABS cut.PAST
‘I cut down this big tree by myself.’ (TR)
- b. Ngath ngaungu ithab koei puil pathamadhin.
1SG.ERG myself these big tree.PL cut.PL.PAST
‘I cut down these big trees.’ (TR)
- c. Ngai ngaungu ithab koei pui-n pathaidhin.
1SG.NOM myself these big tree-INST cut.PAST
‘I cut down (all) these big trees by myself.’ (AP) (Bani & Klokeid, 1976: 278)

A transitive can be used with the verb *path* ‘cut’ when the object is singular ‘this big tree’ (89a) or plural ‘these big trees’ (89b). When the antipassive is used the object is interpreted as ‘all these big trees’ (89c). Bani & Klokeid (1976: 278–279) say that the antipassive indicates that the object “includes *all* the entities of a designated kind, not merely *some*” (original emphasis). It therefore conveys that “the action was carried to completion”. Comrie (1981: 18) describes it as implying the “total affectedness of the objects referred to by the Instrumental noun phrase”.

Kuku Yalanji also displays this function. Examples can be found in (90–95).

(90) KUKU YALANJI

- a. Kangkal-da kaya kuni-ny.
own.child-ERG dog.ABS hit-PAST
‘My child hit the dog.’ (TR) (Patz, 2002: 64)
- b. Yinya karrkay kaya-nda kuni-n-kuni-ji-y.
that.ABS child.ABS dog-LOC:PT hit-*n*-REDUP-INTR-NPAST
‘That little one is hitting all the dogs (around here).’ (AP) (Patz, 2002: 153)

(91)

- a. Nyulu bayan-ba jirakal-ba dunga-y, nuri-l-nuri-nka.
3SG.NOM house-LOC new-LOC go-NPAST peep-*l*-REDUP-PURP
‘He goes to the new house to have a peep [at it].’ (TR) (Patz, 2002: 165)
- b. Jalbu bayan-ba yindu-yinduy-mbu nuri-nuri-ji-y.
woman.ABS house-LOC other-REDUP-LOC peep-REDUP-INTR-NPAST
‘The woman is having a sticky-beak in all the other houses.’²⁴ (AP) (Patz, 2002: 153)

²⁴ i.e., the woman is prying or snooping in all the other houses.

- (92)
- a. Bama dunga-ny bunjurri-ny.²⁵
 Aborigine.ABS go-PAST throw.spit/curse-PAST
 ‘The Aborigine went and threw a curse.’ (TR)
- b. Bama dungan-ny bunjurri-ji-ny.
 Aborigine.ABS go-PAST throw.spit/curse-INTR-PAST
 ‘The Aborigine went and threw curses everywhere.’ (AP) (Patz, 2002: 153)
- (93) Ngamu mayi-nga wambi-ji-ny.
 mother.ABS food-LOC share.out-INTR-PAST
 ‘Mother shared out all the food.’ (AP) (Patz, 2002: 154)
- (94) Nyulu dingkar minya-nga nuka-ji-ny.
 3SG.NOM man.ABS meat-LOC eat-INTR-PAST
 ‘The man had a good feed of meat (he wasted nothing).’ (AP) (Patz, 2002: 152)
- (95) Nyulu jalbu ngayku-wun-bu bayan-ba ngunja-ji-ny.
 3SG.NOM woman.ABS 1SG.POSS-LOC house-LOC take.over-INTR-PAST
 ‘The woman took over my house lock stock and barrel.’ (AP) (Patz, 2002: 154)

Unlike Kala Lagaw Ya, Kuku Yalanji lacks overt number marking on nouns; number can be optionally indicated by reduplicating a nominal modifier as in (91b). In all of the contrasting pairs below the transitive object is interpreted as a singular while the antipassive object is interpreted like a universal quantifier phrase. With count nouns *kaya* ‘dog’ (90b) and *bayan* ‘house’ (91b) it means every entity of that kind in a particular area. With a verb of creation like *bunjurri* ‘throw curse’ it is interpreted as an event of throwing curses everywhere, or all over, a particular area (92b). With mass nouns *mayi* ‘food’ (93) and *minya* ‘meat’ (94) it means the entire quantity. And with a singular possessed noun *ngaykuwun bayan* ‘my house’ (95) it means the entire house, or every part of the house. These contrasts are independent of tense and aspect marking. Verbal reduplication marks imperfective aspect; in (91) both constructions occur with a reduplicated verb while in (92) they occur with an unduplicated verb.

In these examples the antipassive is clearly not interpreted as non-culminating or as having a partially affected object. This is particularly clear with the sentences in the past tense. (93), for example, means that every part of the food has been shared out. Since there is no more food that can be shared, the event description includes the telic point; it is a complete, culminated event with a fully affected object.

The meaning of Type 1 antipassives pursued in the previous sections is not able to capture these facts, both due to the modality that introduces proper event stages related to events in possible worlds, and the property-type object which is existentially closed. It is also not clear that Type 2 antipassives can be analysed as having a QP (or DP) object headed by the universal quantifier. Under this approach the source of the oblique case marking of the object, and the other markers of intransitivity, is a mystery. It would also predict that antipassives objects of this type can take wide scope. There is no evidence available that this is possible; in all of the examples above the object takes narrow scope. However there is no negative evidence either. Under this analysis there is also no obvious way to relate the two types of antipassive.

Despite the differences in meaning between the two types of antipassive they nevertheless both indicate that the object is in some sense less referential, or less individuated, than the corresponding transitive object. Individuation is a notion used by Hopper & Thompson (1980: 286) and refers to the extent to which an entity is “discrete, bounded and separated from its environment”. (96) lists some indicators of individuation. The generalisation made by Hopper & Thompson is that languages may mark certain kinds of non-individuated objects with non-transitive morphology.

²⁵ My glosses; this example was not glossed in the original source.

(96)	INDIVIDUATED	NON-INDIVIDUATED
	proper	common
	human, animate	inanimate
	concrete	abstract
	singular	plural
	count	mass
	referential, definite	non-referential (Hopper & Thompson, 1980: 252)

Type 2 antipassive objects are clearly less individuated than their transitive counterparts which are all interpreted as singular and referential. In contrast, the antipassive object is plural and has a “kind” sense, as mentioned by Bani & Klokeid. The situation is relevant to the interpretation of the object in (90–92); the event described affects all individuals of a certain kind within a particular spatial location; hit all the dogs *around here*, throw curses *everywhere*. A situation semantics approach offers a solution that makes the relation to a situation explicit and also preserves the existentially-closed property-type analysis of antipassive objects.

Kratzer (2016) discusses certain kinds of construction for which a situation semantics approach is useful. One is the interpretation of donkey pronouns, which are anaphoric pronouns that are interpreted like definite descriptions. The example she gives is (97), in which the pronouns *it* is interpreted like the corresponding definite description *the donkey* in (98).

(97) Whenever a donkey appeared, it was greeted enthusiastically.

(98) Whenever a donkey appeared, the donkey was greeted enthusiastically.

If (97) is used to talk about a situation, call it “Donkey Parade”, then *whenever* quantifies over situations that are all parts of Donkey Parade. The situations that are quantified over must each contain a donkey; these comprise the set of minimal situations. The claim is that each of these situations is part of a larger situation in which that particular donkey is greeted enthusiastically. The formal claim about “Donkey Parade” is (99).

(99) $\lambda s. \forall s'[[s' \leq_p s \ \& \ s' \in \text{Min}(\lambda s. \exists x[\text{donkey}(x)(s) \ \& \ \text{appeared}(x)(s)])] \rightarrow \exists s''[s' \leq_p s'' \ \& \ \text{greeted enthusiastically}(\iota x \text{ donkey}(x)(s'))(s'')]]$

There are certain parallels that can be drawn with the meaning of AP given above in (76). Firstly, there is universal quantification over situations (sub-parts of worlds). Secondly, the subject is treated as an existentially-closed property, albeit in the restriction of the universal quantifier rather than the scope.

A paraphrase of (97) that brings it closer to the Type 2 antipassive translations is ‘All donkeys that appeared were greeted enthusiastically’. (101) shows how this approach might work with the antipassive in (90b), repeated here as (100).

(100) Yinya karrkay kaya-nda kuni-n-kuni-ji-y.
 that.ABS child.ABS dog-LOC:PT hit-*n*-REDUP-INTR-NPAST
 ‘That little one is hitting all the dogs (around here).’ (AP)

(101) $\lambda s. \forall s'[[s' \leq_p s \ \& \ s' \in \text{Min}(\lambda s. \exists x[\text{dog}(x)(s)])] \rightarrow \exists s''[s' \leq_p s'' \ \& \ \text{hit}(\iota x \text{ dog}(x)(s'))(s'')]]$

Assuming *s* is a contextually relevant situation, such as a particular street or park, the meaning of (101) in words is: for all situations *s'* such that *s'* is part of *s* and *s'* contains an *x* such that *x* is a dog, there is an *s''* such that *s'* is part of *s''* and the unique dog in *s'* is hit in *s''*. This achieves the reading that every dog in a particular area *s* is hit. Since existential closure over the object is introduced by the antipassive it

also avoids the problems identified above that arise with a QP-object analysis. With the addition of the agent and events (ignoring tense and aspect) we get (102). The resulting meaning for AP in Type 2 antipassives is (103).

$$(102) \lambda s. \exists e[\text{agent}(\text{ty}[\text{child}(y)])(e) \ \& \ e \leq s \ \& \ \forall s'[(s' \leq s \ \& \ s' \in \text{Min}(\lambda s. \exists x[\text{dog}(x)(s)])) \rightarrow \\ \exists e' \exists s''[e' \leq e \ \& \ s' \leq s'' \ \& \ e' \leq s'' \ \& \ \text{hit}(\text{tx}[\text{dog}(x)(s')])(s'')(e')]]$$

$$(103) \llbracket \text{AP}_2 \rrbracket = \lambda P_{\langle e, \langle v, st \rangle \rangle} \lambda Q_{\langle e, st \rangle} \lambda e. \lambda s. e \leq s \ \& \ \forall s'[(s' \leq s \ \& \ s' \in \text{Min}(\lambda s. \exists x[Q(x)(s)])) \rightarrow \exists e' \exists s'' \\ [e' \leq e \ \& \ s' \leq s'' \ \& \ e' \leq s'' \ \& \ P(\text{tx}[Q(x)(s')])(s'')(e')]]$$

The advantage of this approach is that AP₁ and AP₂ have the same type (ignoring the modal base and ordering source), and in both cases are responsible for introducing existential closure over the property type object. The obvious difference is that in AP₁ the object is in the scope of the universal quantifier whereas in AP₂ it is in the restriction. These formal similarities, in addition to the shared non-individuation readings, would seem to explain the appearance of the same syntactic construction in both contexts, despite the differences in their overall interpretations. It is possible that the two denotations of AP could be unified, but that would likely require too great a level of abstraction to be meaningful or helpful in our understanding of this construction.

10 Conclusion

In this paper I have sought to develop the property-type analysis of the antipassive operator to account for the common non-culminating, non-affected object readings that are found in Australian languages (and cross-linguistically). I proposed that AP₁ contains the same STAGE relation that Landman (1992) proposed for the English progressive and that this, along with an appropriate modality, is able to account for the range of readings attested in Australian languages with accomplishment and achievement verbs. Also in parallel to the progressive, AP₁ may combine in certain languages with a plural operator giving rise to habitual and iterative readings. Despite these similarities, I suggested that AP₁ lacks any reference to time, distinguishing it from higher imperfective aspectual operators. The advantage of this approach is that AP₁ may compose with either perfective or imperfective operators, allowing for a wider range of readings depending on language-specific constraints on the interpretation of aspect. In clarifying the precise contribution of AP in Australian languages and the possible points of variation, I offer a method through which to make sense of the confusion present in the cross-linguistic description of antipassive functions, and which can be used to account for the range of antipassive meanings attested in other languages.

I also showed how we can reconcile the meaning of AP₁ with a second type of antipassive, AP₂, which initially appeared to create readings that were the antithesis of AP₁. Using a situation semantics approach we can supply a meaning for AP₂ that is the same type as AP₁ and which preserves the treatment of the oblique object as a property that is existentially closed below the vP level. I suggest that these two properties may be universal components of AP operators.

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