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Complementizing Case in Australian languages: A constructive approach

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1 Introduction

Dench and Evans (1988), in their founding paper on multiple case marking in Australia, identify 5 case functions found in Australian languages:

(i) *Relational*: the prototypical function of case marking to relate NPs to the argument-taking predicate of a simple clause.

(ii) *Adnominal*: relates NPs to NPs within the one NP constituent (e.g. genitive).

(iii) *Referential*: relates an NP or adverbial to a core NP through case agreement.

(iv) *Associating*: relates NPs to nominalized verbs.

(v) *Complementizing*: relates aspects of the subordinate clause to the main clause.

Nordlinger 1998a develops a model of constructive case in LFG and shows how it can account for the first four of these functions in a natural and explanatory way, allowing for many complex properties of case in Australian languages to be given a unified formal account, and to be situated within a larger typology of phrase structure and (non)configurationality. In this paper I present work recently begun on extending this constructive case model to the complementizing case function in (v). As far as I am aware, there has been no previous general account of this case function in Australian languages within a formal framework (although see Simpson and Bresnan (1983), who discuss properties of complementizing case in Warlpiri, and Andrews (1996), who assumes a case-spreading analysis of complementizing case in Kayardild).

2 Complementizing Case

Complementizing case is found in many Australian languages in a number of different forms. All of these share the fact that case marking is used on members of the subordinate clause to relate aspects of the subordinate clause to the main clause. Following Dench and Evans (1988) we can identify two basic types of complementizing case: *C-complementizing case*, where members of the subordinate clause are case-marked in agreement with a co-referential NP in the main clause (1, 3); and *T-complementizing case*, where case markers on members of the subordinate clause express temporal or logical relations with the main clause (2, 3).[1]

[1] These functions are clearly related to Hale's (1976) N-relative and T-relative adjoined clause types respectively.

(1) *Ngatha nyinku mirnu-ma-larta kampa-larta*-**ku** *ngarri-ngka*-**ku**.
1.SG.NOM 2.SG.ACC know-CAUS-FUT cook-FUT-ACC ashes-LOC-ACC
'I'll show you how to cook in ashes.' (Panyjima (Dench 1991:199, ex. (230)))

(2) *Yabu ngiyi gijilulu jiyaji*-**nka** *bungmanyi*-**nka**.
have 3.SG.F.A(PRES) money.IV(ACC) give-DAT old.man.I-DAT
'She had money to give to the old man.' (Wambaya (Nordlinger 1998b, ex. (8-10)))

(3) *Ngaliwa withawitha-ma-rninyji-rru thurlanyarrara-a*
1.PL.INC covered-CAUS-FUT-NOW poor.fellow-ACC

wantha-lalha-**nguru-u**-*rru ngaliwa-a.*
leave-PST-ABL-ACC-NOW 1.PL.INC-ACC
'We'll bury the poor fellow who now has left us.' (Martuthunira (Dench 1995:244, ex. (10.13)))

In the Panyjima example in (1), the constituents of the subordinate clause—*kampa-larta-ku ngarri-ngka-ku*—are inflected with the C-complementizing accusative case in agreement with the controlling accusative NP *nyinku* in the main clause. In (2) we see an example of T-complementizing case: in this example, the dative case on the two constituents of the subordinate clause—*jayiji-nka bungmanyi-nka*—does not appear in agreement with any constituent of the main clause. Rather, it functions to mark the subordinate clause event as taking place after, and being a purpose of, that described by the main clause. Finally, (3) from Martuthunira, provides an example of the co-occurence of T-complementizing case and C-complementizing case. In this example the head of the subordinate clause is inflected with two case markers. The first, the ablative case, has a T-complementizing function; it marks the subordinate clause as being temporally prior to the main clause (Dench 1995). The second case, the accusative, identifies the subject of the subordinate clause with the accusative argument of the main clause, and therefore has a C-complementizing function. (Note that the accusative case on the object of the subordinate clause—*ngaliwa*—marks this as being the object of the subordinate clause, and therefore has a standard relational function; complementizing case appears only on subordinate clause *heads* in Martuthunira (Dench 1995:61).)

In many Australian languages, cases in T-complementizer function (usually those marking the simultaneity of the main and subordinate clause events) also encode a type of switch-reference (Austin 1981, Simpson and Bresnan 1983, Dench and Evans 1988, Simpson 1988). Examples include:

(4) *Ngajbi ng-a alaji ngarli*-**ni**.
see 1.SG.A-PST boy.I(ACC) talk-LOC
'I saw the boy when I (*the boy) was talking.' (Wambaya)

(5) *Ngarrka-ngku marlu pantu-rnu marna nga-rninja*-**kurra**.
man-ERG kangaroo(ABS) spear-PST grass(ABS) eat-INF-ALL
' The man speared the kangaroo while it (*the man) was eating grass.'
(Warlpiri (Hale 1982:293, ex. (137)a))

In (4) the use of the locative case on the subordinate verb *ngarli-* indicates both that the subordinate event occured simultaneously with the main clause event, and that the subject of the subordinate clause is the same as the subject of the main clause. In the Warlpiri example in (5), the allative case is used on the subordinate verb *nga-rninja-* to mark the same temporal relationship as the locative in (4), but indicates that the controller of the subordinate clause subject is the object of the main clause.

Thus, within the complementizing case function we can distinguish firstly between C-complementizing case (e.g. (1) and (3)) and T-complementizing case (e.g. (2–5)); and secondly, within the category of T-complementizing case, between that which does not encode switch-reference (e.g. (2) and (3)) and that which does (e.g. (4) and (5)).

Of these different complementizing case types, this paper addresses only the first two; it does not discuss T-complementizing case functions that also encode switch-reference. This is not because these case functions are incompatible with the general approach to be taken here. In fact, it will become clear that the analysis provides a natural way of incorporating the anaphoric control analysis of Simpson and Bresnan (1983) for such phenomena in Warlpiri (see, for example, Dalrymple (1993:146ff) who does so with an analysis similar to that provided for complementizing case below). Rather, it is because an analysis of such switch-reference systems should ideally involve a much larger study of their properties within the context of switch-reference studies more generally (e.g. Haiman and Munro 1983, Stirling 1993), as well as an understanding of the differences between these systems in Australian languages and the C-complementizing case function exemplified in (1) and (3) above. Such a comprehensive study is beyond the scope of this present work. In this paper I will concentrate on the functions of case exemplified in (1–3) above—C-complementizing case, and T-complementizing case that does not encode switch-reference—leaving the switch-reference uses of case for further research.

The rest of this paper is structured as follows. In section 3 I briefly introduce the model of constructive case as it is presented in Nordlinger (1997, 1998a). And in section 4 I show how this analysis is easily extended to account for C-complementizing case functions both on its own, and when co-occuring with T-complementizing case.

3 The Constructive Case approach

The basic idea behind the constructive case model is that case morphemes do not simply provide case features to the f-structure of the noun phrase they belong to, but also build the larger syntactic context in which they appear. For basic case markers in prototypical case functions (e.g. relational and adnominal in Dench and Evans (1988) terms), this means that case morphemes specify the grammatical function of the higher clause of which their f-structure is the value. This is done using inside-out function application (e.g. Halvorsen and Kaplan 1995[1988], Dalrymple 1993, see also Andrews 1996:41-43). For example, the information provided by a basic accusative suffix is given in (6):[2]

(6) ACC: $(\uparrow \text{ CASE}) = \text{ACC}$
$(\text{OBJ} \uparrow)$

When this suffix is attached to a nominal stem, as in (7), it constructs the f-structure in (8):

[2]Note that for expository purposes I am using a fairly simple morpheme-based morphology here. However, nothing in the analysis hinges on such a view of the morphology; the analysis could be translated into a realizational account with a minimal amount of effort.

(7)

$$
\begin{array}{ccc}
 & \mathrm{N} & \\
\uparrow = \downarrow & & \uparrow = \downarrow \\
\mathrm{N} & & \mathrm{Aff} \\
\textit{dog} & & \textsc{acc} \\
(\uparrow \ \textsc{pred}) = \text{`dog'} & & (\uparrow \ \textsc{case}) = \textsc{acc} \\
 & & (\textsc{obj} \uparrow)
\end{array}
$$

(8)

$$f_x\!:\!\left[\textsc{obj} \quad f_y\!:\!\begin{bmatrix}\textsc{pred} & \text{`dog'} \\ \textsc{case} & \textsc{acc}\end{bmatrix}\right]$$

By virtue of the inside-out designator (OBJ $\uparrow$), the case marker constructs a higher f-structure (f_x) which contains an OBJ to which the immediate f-structure containing the case affix (f_y) belongs. Thus, on this analysis, a nominal inserted into the syntax already constructs its grammatical function by virtue of the case marker attached to it. In a dependent-marking nonconfigurational language, in which there are no argument functions assigned in the phrase structure, the information constructed by the case marker alone will therefore determine the grammatical function of the NP.

In addition, I assume the Principle of Morphological Composition (9), which controls the composition of structural information provided by multiple morphemes in a single word. Basically, this mechanism ensures that when a morpheme is added to a structure-building stem (i.e. one that contains an IO designator, as does the accusative case affix in (6)), the information contributed by the additional morpheme will incorporate the structure that has already been built by the stem. In other words, the information contributed by subsequent morphemes will be unified with the outermost f-structure constructed by the stem to which they are attached.[3]

(9) **Principle of Morphological Composition:**
Where x is a string of attributes:

$$
\begin{array}{ccccc}
\text{Stem} & \text{Aff} & \Longrightarrow & \text{Stem} & \text{Aff} \\
(\textsc{gf}^n \uparrow) & ((\textsc{gf}^m \ \uparrow) \quad x) & & (\textsc{gf}^n \uparrow) & ((\textsc{gf}^m \ (\textsc{gf}^n \uparrow))x)
\end{array}
$$

For example, if the accusative case affix in (6) were to be added to a stem already containing a case marker, such as 'ashes-LOC', which constructs the adjunct relation (10), the effect of morphological composition will be to embed the (ADJ $\uparrow$) designator of the locative suffix into the lexical entry of the accusative case affix (11), and construct the f-structure in (12) for the whole nominal.

(10) a. 'ashes-LOC': $(\uparrow \ \textsc{pred}) = \text{`ashes'}$
$(\uparrow \ \textsc{case}) = \textsc{loc}$
$(\textsc{adj} \uparrow)$

[3] Note that the Principle of Morphological Composition is assumed to apply generally to all instances of morphological combination. However, it is only in the case where the stem contains an inside-out designator, such as (OBJ $\uparrow$), that it will apply non-vacuously. In all other cases its effect will be simply to replace $\uparrow$ with $\uparrow$.

b. $f_x\!:\!\begin{bmatrix} \text{ADJ} & f_y\!:\!\begin{bmatrix} \text{PRED} & \text{`ashes'} \\ \text{CASE} & \text{LOC} \end{bmatrix} \end{bmatrix}$

(11) ACC: $((\text{ADJ} \uparrow)\ \text{CASE}) = \text{ACC}$
$(\text{OBJ ADJ} \uparrow)$

(12) $\begin{bmatrix} \text{OBJ} & f_x\!:\!\begin{bmatrix} \text{CASE} & \text{ACC} \\ \text{ADJ} & f_y\!:\!\begin{bmatrix} \text{PRED} & \text{`ashes'} \\ \text{CASE} & \text{LOC} \end{bmatrix} \end{bmatrix} \end{bmatrix}$

Nordlinger (1998a) shows that this principle of morphological composition provides a simple and intuitive account of many properties of case in Australian languages, including the interaction of case and number marking in Martuthunira (Dench 1995, Andrews 1996) and many types of case stacking (e.g. Dench and Evans 1988, Simpson 1991, Plank (ed.) 1995, Andrews 1996). Furthermore, since case markers in this model refer to the clause by constructing a grammatical function for it, this analysis extends quite naturally to account for situations in which case morphemes carry clearly clause-level information, such as tense/aspect/mood (e.g. Kayardild (Evans 1995)). Below we will see examples of the application of this mechanism of morphological composition, and of case markers carrying clause-level information, in the analysis of complementizing case.

4 The Analysis

Having now outlined the framework that I will be assuming, we can turn to the analysis of complementizing case; first C-complementizing case, and then the combination of C-complementizing and T-complementizing case.

4.1 C-complementizing case

Consider the Panyjima example repeated here from above:

(13) *Ngatha* *nyinku* *mirnu-ma-larta* *kampa-larta*-**ku** *ngarri-ngka*-**ku**.
1.SG.NOM 2.SG.ACC know-CAUS-FUT cook-FUT-ACC ashes-LOC-ACC
'I'll show you how to cook in ashes.' (Panyjima (Dench 1991:199, ex. (230)))

The accusative case on the subordinate clause constituents in this example has a very different function from that on the main clause object NP *nyinku*, which identifies the NP as the object argument of the main verb. The accusative case in this latter (relational) function contributes the information given in (6) above. In contrast, the accusative case on the constituents of the subordinate clause does not construct the object relation. Rather, the presence of accusative case on the subordinate verb 'cook' identifies it as belonging to a subordinate clause whose subject is coreferential with the accusative argument of the main clause. Using ideas from Dalrymple's (1993) analysis of anaphoric binding, the accusative case in this function, then, can be assumed to carry the information in (14) (explained below):

(14) $\text{ACC: } ((\text{ADJ-S} \uparrow)\ \text{OBJ CASE}) = \text{ACC}$
$$(\uparrow\ \text{SUBJ})_\sigma = ((\text{ADJ-S} \uparrow)\ \text{OBJ})_\sigma$$

Firstly, the case marker in this C-complementizing function constructs a grammatical function for the clause—for present purposes I will refer to this function as 'sentential adjunct' (ADJ-S)—by virtue of the inside-out equation (ADJ-S $\uparrow$).[4] In addition, the first part of this entry identifies the OBJ of the f-structure to which the ADJ-S belongs (i.e. the f-structure of the main clause) as having accusative case. The second part of this entry serves to establish the co-referentiality between the subject of the subordinate clause and the object of the main clause. It identifies the semantic representation of the SUBJ of the subordinate clause with the semantic representation of the OBJ of the main clause. This is captured with the use of the subscript operator σ, which maps from f-structures to semantic structure: for any f-structure f, f_σ is the corresponding semantic structure (Dalrymple 1993:104-5). Thus, the second equation in (14) states that the semantic structure associated with the f-structure of the subordinate clause subject (denoted by ($\uparrow$ SUBJ)) is identified with the semantic structure associated with the f-structure of the main clause object (denoted by ((ADJ-S $\uparrow$) OBJ)).[5] This identification of semantic representation can be seen as a constraint on the semantic structure that forces the two arguments to be co-referential (Dalrymple 1993:108).

This case marker therefore constructs the f-structure given in (15), in which I use the informal notation of co-indexing the grammatical functions in the f-structure in order to represent the constraint forcing their co-referentiality in the semantic structure:

(15)
$$\begin{bmatrix} \text{OBJ}_i & \begin{bmatrix} \text{CASE} & \text{ACC} \end{bmatrix} \\ \text{ADJ-S} & \begin{bmatrix} \text{SUBJ}_i & [\,] \end{bmatrix} \end{bmatrix}$$

It constructs a subordinate ADJ-S function whose subject is co-referential with the accusative OBJ of the main clause.

When attached to the subordinate verb *kampa-larta-*, which can be assumed to carry the information in (16), this results in the f-structure given in (17).

(16) *kampa-larta-*: $(\uparrow\ \text{PRED}) = \text{`cook } \langle(\uparrow\ \text{SUBJ})\rangle\text{'}$
$$(\uparrow\ \text{SUBJ PRED}) = \text{`PRO'}$$
$$(\uparrow\ \text{TENSE}) = \text{FUT}$$

(17)
$$\begin{bmatrix} \text{OBJ}_i & \begin{bmatrix} \text{CASE} & \text{ACC} \end{bmatrix} \\ \text{ADJ-S} & \begin{bmatrix} \text{SUBJ}_i & \begin{bmatrix} \text{PRED} & \text{`PRO'} \end{bmatrix} \\ \text{PRED} & \text{`cook } \langle \ldots \rangle\text{'} \\ \text{TENSE} & \text{FUT} \end{bmatrix} \end{bmatrix}$$

[4] This sentential adjunct function is roughly equivalent to the ADJ of Bresnan (1982)). This seems to be a reasonably accurate representation for many Australian languages (see, for example, Hale (1976) on the 'adjoined relative clause' type in Australian languages); however nothing in the analysis hinges on this particular choice of grammatical function, and it may well differ across languages.

Since this grammatical function is associated with all subordinate clauses in these languages, I assume it is also assigned in the c-structure: e.g. to all S daughters of the clause.

[5] I will not be concerned here with what the level of semantic representation might look like. See Halvorsen (1983), Halvorsen and Kaplan (1995[1988]), Halvorsen (1995[1988]), Dalrymple (1993), Dalrymple et. al. (1993) for different perspectives.

As for the subordinate clause adjunct *ngarri-ngka-ku* 'ashes-LOC-ACC', this nominal already contains a case marker—the locative case—which, as we saw above, has the lexical entry in (18), constructing the f-structure in (19) for the inflected nominal *ngarri-ngka-* 'ashes-LOC-':

(18) $$\textsc{loc}\text{:}\quad \begin{array}{l}(\uparrow\ \textsc{case}) = \textsc{loc}\\ (\textsc{adj}\ \uparrow)\end{array}$$

(19) $$\left[\textsc{adj}\ \begin{bmatrix}\textsc{pred} & \text{`ashes'}\\ \textsc{case} & \textsc{loc}\end{bmatrix}\right]$$

Thus, this nominal already contains an inside-out designator before the addition of the accusative C-complementizing affix. The addition of the C-complementizing case affix will therefore be affected by morphological composition, which will embed the structure constructed by the locative affix inside that constructed by the accusative affix. In other words, it will replace the $\uparrow$ arrows of the accusative case affix with the inside-out designator of the locative affix $(\textsc{adj}\ \uparrow)$. The accusative case affix in this context, therefore, contributes the information in (20),

(20) $$\begin{array}{l}((\textsc{adj-s}\ (\textsc{adj}\ \uparrow))\ \textsc{obj case}) = \textsc{acc}\\ ((\textsc{adj}\ \uparrow)\ \textsc{subj})_\sigma = ((\textsc{adj-s}\ (\textsc{adj}\ \uparrow))\ \textsc{obj})_\sigma\end{array}$$

and the whole nominal *ngarri-ngka-ku* 'ashes-LOC-ACC' constructs the f-structure in (21):

(21) $$\begin{bmatrix}\textsc{obj}_i & [\textsc{case}\quad \textsc{acc}] \\ \textsc{adj-s} & \begin{bmatrix}\textsc{subj}_i & [\,] \\ \textsc{adj} & \begin{bmatrix}\textsc{pred} & \text{`ashes'}\\ \textsc{case} & \textsc{loc}\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

By combining this f-structure with the f-structure constructed by the subordinate verb, this analysis results in the following f-structure for the whole subordinate clause:

(22) $$\begin{bmatrix}\textsc{obj}_i & [\textsc{case}\quad \textsc{acc}] \\ \textsc{adj-s} & \begin{bmatrix}\textsc{subj}_i & [\textsc{pred}\quad \text{`}\textsc{pro}\text{'}] \\ \textsc{pred} & \text{`cook}\ \langle \ldots \rangle\text{'} \\ \textsc{tense} & \textsc{fut} \\ \textsc{adj} & \begin{bmatrix}\textsc{pred} & \text{`ashes'}\\ \textsc{case} & \textsc{loc}\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

Languages with C-complementizing case such as Panyjima are therefore assumed to make use of a single morphosyntactic rule that derives C-complementizing case entries such as (14) from basic case entries such as (6), for all cases which are found in the C-complementizing function (this will vary across languages). Assuming the following basic lexical entry for case morphemes:

(23) $$\begin{array}{l}(\textsc{gf}\ \uparrow)\\ (\uparrow\ \textsc{case}) = \mathit{case}\end{array}$$

this morphsyntactic rule produces an alternative C-complementizing lexical entry for the case marker, of the form:

(24) $((\text{ADJ-S} \uparrow)\ \text{GF CASE}) = \textit{case}$
$(\uparrow\ \text{SUBJ})_\sigma = ((\text{ADJ-S} \uparrow)\ \text{GF})_\sigma$

Thus, on this analysis, C-complementizing case marks a relationship between arguments similar to anaphoric control (Bresnan 1982).[6] That the subjects of these subordinate clauses should be anaphorically and not functionally controlled can be shown for the different languages in a number of ways: for example, in many languages such subordinate clauses can optionally contain overt subjects (e.g. Yukulta (Keen 1983)); and it is often possible to show that the case of the subordinate clause subject is different from the case of the controller through the presence of subject-agreeing adjuncts in the subordinate clause (e.g. Warlpiri (Simpson and Bresnan 1983)).

C-complementizing case in most of the Australian languages that make use of it has (largely) the same functional properties as that described for Panyjima above, and thus will follow in the same way. C-complementizing case in Kayardild, however, demonstrates an interesting variation.

In Kayardild C-complementizing case encodes what Evans (1995:489ff) describes as 'odd-pivots'. It appears on all constituents of the subordinate clause just in case the pivot is *not* the subject of both clauses.[7] In (25), the pivot is the object of the subordinate clause, and in (26) it is the object of both clauses. The complementizing case in this instance is the oblique case, which Evans glosses COBL in this function.[8]

(25) *Dan-da* *banga-a* *kakuju*-**ntha** *raa-jarra*-**ntha** *walbu-nguni*-**nj**.
this-NOM turtle-NOM uncle-COBL spear-PST-COBL raft-INST-COBL
'This is the turtle (which) uncle speared from the raft.' (Evans:1995:489, ex. (12-4))

(26) *Nyingka* *kurri-jarra* *dathin-kina* *dangka-na*
2.SG.NOM see-PST that-MABL man-MABL

thawurr-inaa-**ntha** *raa-jarra*-**ntha** *niwan-jinaa*-**nth**.
throat-MABL-COBL spear-PST-COBL 3.SG-MABL-COBL
'Did you see the man, whom (he) speared in the throat?' (Evans 1995:490, ex. (12-5))

Complementizing case in this function in Kayardild, then, does not identify the subject of the subordinate clause as being co-referential with an argument of the main clause. Rather, it specifies that the subject of the subordinate clause is *not* co-referential with the main clause subject (this is, in effect, the Subject Disjointness Condition of Dalrymple (1993, e.g. p. 29)). Thus, its lexical entry is very similar to that given for C-complementizing case above, except

[6] Of course, a formal analysis of anaphoric control may look quite different from that given here for C-complementizing case (Bresnan (1982, 1996), Simpson and Bresnan 1983, Kroeger 1993).

[7] Complementizing case has another function in Kayardild which is to mark clausal arguments of matrix predicates. This use is clearly distinct from the 'odd-pivot' marking use, since it also occurs when the subjects of the two clauses are the same (Evans 1995:490). I will assume, therefore, that this function of complementizing case requires a separate analysis from the odd-pivot function discussed here.

[8] The gloss MABL in (26) denotes the modal use of the ablative case. Modal case in Kayardild functions to contribute tense/mood information to the clause (Evans 1995). For a treatment of modal case within the constructive case approach see Nordlinger (1998a: Ch. 4).

that it encodes non-coreferentiality between the two subjects, as shown in (27).[9] Since negative constraints are generally assumed to be non-constructive (Kaplan and Bresnan 1982:210), I have unpacked the information in (27) separating the construction of grammatical functions from the constraint on subject non-coreference. Otherwise this is exactly analogous to the (second part of) entries for C-complementizing case we have already seen (e.g. (14)).[10]

(27) $\textsc{cobl}$: $(\textsc{adj-s}\uparrow)$
$$(\uparrow \textsc{subj})_\sigma \neq ((\textsc{adj-s}\uparrow)\ \textsc{subj})_\sigma$$

To see how this works, consider again the example in (25). For the instances of C-complementizing case on the subordinate verb *raa-jarra-* 'spear-PST-' and the subordinate clause adjunct *walbu-nguni-* 'raft-INST-', the analysis will proceed in exactly the same way as it did in the Panyjima example discussed above, with the only exception being that it constrains for disjoint reference between the two subjects, as opposed to co-reference between the subordinate clause subject and the main clause object. Thus, the f-structures constructed by the subordinate clause verb and the subordinate clause instrumental adjunct are given in (28) and (29) respectively.[11]

(28)
$$\left[\begin{array}{ll} \textsc{subj}_i & [\,] \\ \textsc{adj-s} & \left[\begin{array}{ll} \textsc{subj}_{j,i\neq j} & [\,] \\ \textsc{pred} & \text{`spear} \langle \ldots \rangle\text{'} \\ \textsc{tense} & \textsc{pst} \end{array}\right] \end{array}\right]$$

(29)
$$\left[\begin{array}{ll} \textsc{subj}_i & [\,] \\ \textsc{adj-s} & \left[\begin{array}{ll} \textsc{subj}_{j,i\neq j} & [\,] \\ \textsc{adj} & \left[\begin{array}{ll} \textsc{pred} & \text{`raft'} \\ \textsc{case} & \textsc{inst} \end{array}\right] \end{array}\right] \end{array}\right]$$

However, something more needs to be said about the subject nominal *kakuju-ntha* 'uncle-COBL'. This nominal does not contain a relational case marker to trigger morphological composition. Thus, the complementizing case affix will apply directly to the nominal stem, constructing the f-structure in (30):

(30)
$$\left[\begin{array}{ll} \textsc{subj}_i & [\,] \\ \textsc{adj-s} & \left[\begin{array}{ll} \textsc{subj}_{j,i\neq j} & [\,] \\ \textsc{pred} & \text{`uncle'} \end{array}\right] \end{array}\right]$$

Clearly this is not correct since it unifies the PRED of *kakuju-* with the outermost f-structure of the subordinate clause, rather than embedding it within a SUBJ attribute. This will then

[9] In fact, the oblique case in this function also carries information about the subject of the subordinate clause. In particular, it can only appear with non-inclusive subjects, otherwise the locative case must be used (Evans 1995:493). For present purposes, I will assume that inclusivity can be treated as a binary feature, and that this contraint is captured by the case marker simply containing the equation $(\uparrow \textsc{subj inc}) = -$, although in the interests of simplicity, I do not include this feature in the present discussion.

[10] Note that this analysis is very similar to that given by Dalrymple to capture her Subject Disjointness Condition (1993:138).

[11] In these and subsequent f-structures I have included only information relevant to this discussion.

clash with the PRED feature of the subordinate verb, and the structure will be ungrammatical. Hence, we need the complementizing case affix to be able to construct an additional f-structure level in case it is attached to a subject. This can be achieved by adding the following optional information into the lexical entry of the C-complementizing case affix:[12]

(31) COBL: $(\text{ADJ-S}\ (\text{SUBJ}) \uparrow)$
$(((\text{SUBJ}) \uparrow)\ \text{SUBJ})_\sigma \neq ((\text{ADJ-S}\ (\text{SUBJ}) \uparrow)\ \text{SUBJ})_\sigma$

Thus, the complementizing case has the option of constructing a SUBJ function within the ADJ-S in order to avoid ungrammatical structures such as (30) above. The f-structure for the subject nominal 'uncle-COBL' is therefore that in (32):

(32) $$\begin{bmatrix} \text{SUBJ}_i & [\,] \\ \text{ADJ-S} & \begin{bmatrix} \text{SUBJ}_{j,i\neq j} & \begin{bmatrix} \text{PRED} & \text{`uncle'} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

All other impossible combinations of complementizing case affixes and constituents of the subordinate clause—for example, the use of the subject-constructing option with a non-subject NP—will be ruled out by independent constraints such as coherence, completeness and functional uniqueness (Bresnan, Forthcoming).

4.2 T-Complementizing Plus C-Complementizing Case

Having now demonstrated how this approach can account for C-complementizing case, I will turn to a brief discussion of T-complementizing case. Recall the examples of this case function, repeated from above.

(33) *Yabu ngiyi gijilulu jiyaji*-**nka** *bungmanyi*-**nka**.
have 3.SG.F.A(PRES) money.IV(ACC) give-DAT old.man.I-DAT
'She had money to give to the old man.' (Wambaya (Nordlinger 1998b, ex. (8-10)))

(34) *Ngaliwa withawitha-ma-rninyji-rru thurlanyarrara-a*
1.PL.INC covered-CAUS-FUT-NOW poor.fellow-ACC

wantha-lalha-**nguru**-*u-rru ngaliwa-a.*
leave-PST-ABL-ACC-NOW 1.PL.INC-ACC
'We'll bury the poor fellow who now has left us.' (Martuthunira (Dench 1995:244, ex. (10.13)))

Case morphemes in T-complementizer function do not provide information about (constituents of) the main clause in the way that C-complementizing case does. Instead, these case markers simply encode the logical and/or temporal relationship of the subordinate clause to the main clause. The nature of this relationship for the different case markers across different languages lies well beyond the scope of this paper. For present purposes I will assume that these case markers provide the subordinate clause with a value for the attribute D-TENSE, for dependent tense. Thus, the information contributed by the dative T-complementizing case on the Wambaya subordinate verb in (33), is that in (35):

[12] Where a single optional feature is present in a number of different positions in a lexical entry, such as in (31), I assume that it must be realised in all positions or in none. For example, it would not be possible for the SUBJ to be present in the first equation of the lexical entry in (31), and not also in both sides of the second.

(35) DAT: ($\uparrow$ D-TENSE) = FUT

Since this suffix also appears on nominal objects directly (e.g. *bungmanyi-nka* in (33)), we can use the same argumentation as for the subject NP in the Kayardild example discussed above, and assume that this case marker in Wambaya also optionally constructs the object relation. Thus:

(36) DAT: (((OBJ) $\uparrow$) D-TENSE) = FUT

Thus, the f-structure associated with the subordinate clause in (33) is that given in (37):

(37)
$$\begin{bmatrix} \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{`old man'} \end{bmatrix} \\ \text{PRED} & \text{`give} \langle \ldots \rangle \text{'} \\ \text{D-TENSE} & \text{FUT} \end{bmatrix}$$

Wambaya does not have C-complementizing case. However, in many other languages we find examples in which both T-complementizing and C-complementizing case co-occur, as in the Martuthunira example in (34) above. Since the T-complementizing case is not constructive—it does not contain an inside-out designator—the application of morphological composition to the accusative C-complementizer case in (34) will be vacuous, and the contribution of the accusative case will be exactly the same as in the Panyjima example discussed earlier. Thus, assuming that the T-complementizing ablative case encodes the subordinate clause in Martuthunira as having dependent-past tense, the f-structure associated with the subordinate verb in (34) will be that in (38) (putting aside the discourse clitic *rru*, and the PST inflection on the verb, which is possibly derivational in this use (see Dench 1995:144ff)):

(38)
$$\begin{bmatrix} \text{OBJ}_i & \begin{bmatrix} \text{CASE} & \text{ACC} \end{bmatrix} \\ \text{ADJ-S} & \begin{bmatrix} \text{SUBJ}_i & \begin{bmatrix} \text{PRED} & \text{`PRO'} \end{bmatrix} \\ \text{PRED} & \text{`leave} \langle \ldots \rangle \text{'} \\ \text{D-TENSE} & \text{PST} \end{bmatrix} \end{bmatrix}$$

The analysis presented here will also accurately account for more complicated examples in which the T-complementizing and C-complementizing case affixes appear on the subordinate verb and its arguments, as in the following example from Yukulta:[13]

(39) *Tangka-ya=karri* *ngit-a* *karna-ja* *makurrarra-wurlu*-**ya**
man-ERG=3A:3O:PRES wood-ACC light-IND wallaby-PROP-ERG

karna-j-urlu-**ya**.
light-VB-PROP-ERG
'The man lit a fire in order to cook the wallaby.' (Yukulta (Dench and Evans 1988:28, ex. (54)))

In this example the C-complementizer case is the ergative, and thus the co-referential identity it marks is between the subordinate clause subject and the ergative subject of the main clause:

[13] In this example the gloss IND refers to an indicative mood suffix, and VB is a verb thematic suffix.

(40) $\textsc{erg}$: $((\textsc{adj-s}\uparrow)\ \textsc{subj case}) = \textsc{erg}$
$(\uparrow\ \textsc{subj})_\sigma = ((\textsc{adj-s}\uparrow)\ \textsc{subj})_\sigma$

The combination of this and the T-complementizing proprietive case on the subordinate verb thus yields the f-structure in (41). For our purposes, the T-complementizing use of the proprietive case in Yukulta can be assumed to have the same function as the equivalent use of the dative in Wambaya—i.e., marking dependent-future tense (Keen 1983).

(41)
$$\begin{bmatrix} \textsc{subj}_i & \begin{bmatrix}\textsc{case} & \textsc{erg}\end{bmatrix} \\ \textsc{adj-s} & \begin{bmatrix} \textsc{subj}_i & \begin{bmatrix}\textsc{pred} & \text{`}\textsc{pro}\text{'}\end{bmatrix} \\ \textsc{pred} & \text{`cook } \langle \ldots \rangle \text{'} \\ \textsc{d-tense} & \textsc{fut} \end{bmatrix} \end{bmatrix}$$

The f-structure of the subordinate object $\textsc{np}$—*makurrarra-wurlu-ya*—will also follow from the analyses outlined above. The T-complementizing case will construct the object relation, resulting in the f-structure for *makurrarra-wurlu-* 'wallaby-$\textsc{prop}$-' given in (42):

(42)
$$\begin{bmatrix} \textsc{obj} & \begin{bmatrix}\textsc{pred} & \text{`wallaby'}\end{bmatrix} \\ \textsc{d-tense} & \textsc{fut} \end{bmatrix}$$

The Principle of Morphological Composition will then apply to the ergative C-complementizing case, causing it to construct information outside of that already constructed in (42). Thus, the f-structure for the full object nominal *makurrarra-wurlu-ya* is that in (43):

(43)
$$\begin{bmatrix} \textsc{subj}_i & \begin{bmatrix}\textsc{case} & \textsc{erg}\end{bmatrix} \\ \textsc{adj-s} & \begin{bmatrix} \textsc{subj}_i & [\,] \\ \textsc{obj} & \begin{bmatrix}\textsc{pred} & \text{`wallaby'}\end{bmatrix} \\ \textsc{d-tense} & \textsc{fut} \end{bmatrix} \end{bmatrix}$$

This combines with the f-structure from the verb in (41) to give the following f-structure for the whole subordinate clause:

(44)
$$\begin{bmatrix} \textsc{subj}_i & \begin{bmatrix}\textsc{case} & \textsc{erg}\end{bmatrix} \\ \textsc{adj-s} & \begin{bmatrix} \textsc{subj}_i & \begin{bmatrix}\textsc{pred} & \text{`}\textsc{pro}\text{'}\end{bmatrix} \\ \textsc{obj} & \begin{bmatrix}\textsc{pred} & \text{`wallaby'}\end{bmatrix} \\ \textsc{pred} & \text{`cook } \langle \ldots \rangle \text{'} \\ \textsc{d-tense} & \textsc{fut} \end{bmatrix} \end{bmatrix}$$

Note that this analysis correctly predicts that, if a language has both T-complementizing and C-complementizing case functions, the former will always appear inside the latter (Dench and Evans 1988). This follows from the Principle of Morphological Composition: if the T-complementizing case suffix in (39) were added after the C-complementizing case affix, the inside-out designator $\textsc{adj-s}$ in the lexical entry of the C-complementizing affix would be embedded into the lexical entry of the T-complementizer affix. For example:

(45) DAT: ((ADJ-S $\uparrow$) D-TENSE) = FUT

This will place the D-TENSE information inside the f-structure of the main clause (i.e. the f-structure denoted by (ADJ-S $\uparrow$)) rather than inside the subordinate clause, resulting in an ungrammatical f-structure.

5 Conclusion

Complementizing case, while featuring prominently in Australian languages, has barely been discussed in the formal linguistic literature. In this paper I have shown that this phenomenon can be given a natural account within the general model of constructive case in LFG, a model which has already been shown to account naturally for many other case functions in Australian languages (Nordlinger 1998a). The straightforward application of this model to both C-complementizing case and its interactions with T-complementizing case not only provides further support for the model, but results in a single unified account for many complex and diverse case functions in Australian languages. Furthermore this general approach, in which case markers are constructive of the larger syntactic context, captures the primacy of morphology over c-structure in these languages and positions them within a general typology of phrase structure and (non)configurationality (Nordlinger 1998a).

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