

4. The adjoined relative clause in Australia

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Introduction

In a large number of Australian languages, the principal responsibility for productive recursion in syntax is shouldered by a structure which I will refer to as the *adjoined relative clause*. It is typically marked as subordinate in some way, but its surface position with respect to the main clause is marginal rather than embedded—hence the locution ‘adjoined’. Typically, but not invariably, it is separated from the main clause by a pause. And it has been widely observed that, in languages which make extensive use of the adjoined relative, when the subordinate clause precedes the main clause, it is terminated with a characteristic falling-rising intonation and followed almost invariably by a pause; but when the main clause precedes the subordinate clause, the intonation over both clauses is more often falling, and the pause between them, if any, is brief.

The adjoined relative may be illustrated by the following sentence, from Walbiri of central Australia:

- (1) *ɲatjulu-lu φ-na yankiri pantu-nu, kutja-lpa ɲapa ɲa-nu.*
(I-erg AUX emu spear-past, COMP-AUX water drink-past)
‘I speared the emu which was/while it was drinking water’.

(For an elementary discussion of Walbiri surface syntax, particularly that pertaining to the internal constituency and surface positioning of the auxiliary, the Walbiri case system, verbal inflections, and word order, see Hale 1973. In the glossing of Walbiri sentences, I will leave the internal composition of the auxiliary unspecified, representing it simply as AUX.) The subordinate clause follows the main clause in this example—the comma indicates the division between the two clauses. Moreover, the relative clause is marked with what I will term the ‘referential’ complementiser *|kutja-|* (glossed COMP) which is prefixed to the auxiliary of that clause. Sentence (1) can also be rendered as in (2), that is with the subordinate clause preposed:

- (2) *yankiri-li kutja-lpa ɲapa ɲa-nu, ɲatjulu-lu φ-na pantu-nu.*
(emu-erg COMP-AUX water drink-past, I-erg AUX spear-past)
‘The emu which was drinking water, I speared it.
While the emu was drinking water, I speared it.’

It can also be rendered by the somewhat preferred variant of (2) in which the main clause is initiated by the anaphoric element *ɲula*:

- (3) *yankiri-li kutja-lpa ɲapa ɲa-nu, ɲula φ-na pantu-nu ɲatjulu-lu.*
‘The emu which was drinking water, that one I speared.
‘While the emu was drinking water, then I speared it.’

Sentences (1–3) are open to two distinct interpretations. Or perhaps one should rather say that the relative clause in these sentences can be used in two different ways. On the one hand, the relative clause may be used either to make more determinate or to supply additional information about an argument in the main clause (*|yankiri|* ‘emu’, in this instance). I will refer to this use as the *NP-relative interpretation*. On the other hand, the relative clause may be used to specify the temporal setting of the event depicted in the main clause, or to make a subsidiary comment holding at the time specified in the main clause. I will refer to this as the *T-relative interpretation*. These two functions are widely assumed by the adjoined relative in Australian languages. In general, for Walbiri sentences of this type—and this is commonly the case elsewhere in Australia as well—the NP-relative interpretation is available when the main and subordinate clauses share an identical argument, and the T-relative interpretation is available when the two clauses make identical time reference. Both of these conditions are met in (1–3), so both interpretations are possible there. But in the following sentence (given in several variants), only the NP-relative interpretation is available, since the main and subordinate clauses share an argument while making distinct temporal references:

- (4) (a) *ɲatjulu-lu kapi-na wawiri pura-mi, kutja-npa pantu-nu ɲjuntulu-lu.*
(I-erg AUX kangaroo cook-nonpast, COMP-AUX spear-past you-erg)
‘I will cook the kangaroo you speared.’
(b) *ɲjuntulu-lu kutja-npa wawiri pantu-nu, ɲatjulu-lu kapi-na pura-mi.*
(c) *ɲjuntulu-lu kutja-npa wawiri pantu-nu, ɲula kapi-na pura-mi ɲatjulu-lu.*

And in (5), only the T-relative interpretation is available, since no arguments are shared:

- (5) (a) *ɲatjulu-lu lpa-na kali tjantu-nu, kutja-φ-npa ya-nu-nu ɲjuntu.*
(I-erg AUX boomerang trim-past, COMP-AUX walk-past-hither you)
‘I was trimming a boomerang when you came up.’
(b) *kutja-φ-npa ya-nu-nu ɲjuntu, kali lpa-na tjantu-nu*
(c) *kutja-φ-npa ya-nu-nu ɲjuntu, ɲula lpa-na kali tjantu-nu ɲatjulu-lu.*

The adjoined relative structure is also widely used to specify a condition under which the predication embodied in the main clause could refer to an actual event, process, or state. I will refer to this as the *conditional interpretation*. It is appropriate when the main and subordinate clauses are uninstantiated predications—reflected formally in the modality system by future tense (*|kapi-|* or *|φ-|* auxiliary base in concert with the nonpast verbal inflection), potential mode (*|katjika-|* auxiliary base in concert with the nonpast verbal inflection), or irrealis mode (*|φ-|*, *|lpa-|*, or *|kapi-|* as auxiliary base in concert with the irrealis inflection in the verb). It is not clear to me whether the conditional in Walbiri should be regarded as distinct from the T-relative interpretation—both require an appropriate sequence of

modalities over the main and subordinate clauses. For the purposes of this discussion, I will adhere to the traditional nomenclature but will regard the conditional as a special case of the T-relative. In sentences like (6) below, in which the main and subordinate clauses are future (with /kapi- . . . nonpast/ in the former, and /φ- . . . nonpast/ in the latter), both temporal and conditional interpretations are possible; and since the two clauses share an argument, a NP-relative interpretation is also possible:

- (6) (a) *ɲatjulu-lu kapi-na maliki luwa-ni, katji-φ-ŋki yalki-ni njuntu.*
(I-erg AUX dog shoot-nonpast, COMP-AUX bite-nonpast you)
'I will shoot the dog, if/when it bites you.'
I will shoot the dog that bites you/that is going to bite you.'
(b) *maliki-li katji-φ-ŋki yalki-ni njuntu, ɲatjulu-lu kapi-na luwa-ni.*
(c) *maliki-li katji-φ-ŋki yalki-ni njuntu, ɲula kapi-na luwa-ni ɲatjulu-lu.*

The sense commonly associated with the traditional term 'conditional' predominates when the dependent clause is in the irrealis mode. Sentence (7) is a present counterfactual (characterised by /katjika- . . . nonpast/ in the main clause, and /lpa- . . . irrealis/ in the subordinate):

- (7) (a) *puluku katjika pali-mi, katji-lpa ɲa-njtja ɲampu.*
(bullock AUX die-nonpast, COMP-AUX eat irrealis this)
'The/a bullock would die if it ate this.'
(b) *puluku-lu katji-lpa ɲa-njtja ɲampu, katjika pali-mi.*
(bullock-erg COMP-AUX eat-irrealis this, AUX die-nonpast)
(c) *puluku-lu katji-lpa ɲa-njtja ɲampu, ɲula katjika pali-mi.*

(Since the two clauses share an argument, a NP-relative interpretation is also available for (7)—that is, 'A bullock that ate this would die.' This possibility extends to other conditionals as well). Sentence (8) is a past counterfactual (/kapi- . . . irrealis/ in the main clause, and /φ- . . . irrealis/ in the subordinate):

- (8) (a) *ɲatjulu-lu kapi-na luwa-kaɭa wawiri, katji-φ-ɲa maɖa-kaɭa makiti.*
(I-erg AUX shoot-irrealis kangaroo, COMP-AUX have-irrealis gun)
'I would have shot the kangaroo if I had had a gun.'
(b) *katji-φ-ɲa maɖa-kaɭa makiti ɲatjulu-lu, kapi-na luwa-kaɭa wawiri.*
(c) *katji-φ-ɲa maɖa-kaɭa makiti ɲatjulu-lu, ɲula kapi-na luwa-kaɭa wawiri.*

The reader will no doubt have noticed that the phonological shape of the complementiser varies in these sentences—it is /kutja-/ in (1-5), while in (6-8) it is /katji-/. The choice between them apparently depends upon the semantic notion 'instantiation'. If the subordinate clause is an instantiated predication, the appropriate complementiser is /kutja-/ (*ɲula-* in the speech of some Walbiris); but if the predication in the subordinate clause is un-instantiated, the appropriate complementiser is /katji-/. For present purposes, I will regard these elements as variants of a single 'referential' complementiser, as distinct from the causal/purposive complementiser /yujɔ-/ (with variants /yi- ~ yiŋa-/ in the speech of many), to be exemplified directly. (These

observations do not apply to all Walbiri dialects; however, the pattern described here is relatively popular.)

Another widespread use of the adjoined structure in Australian languages is the expression of a causal or purposive relation between predications. This is not a formal distinction in Walbiri—for many speakers, at least, both causal and purposive relatives are identically marked by the complementiser /yujɔ-/. The causal, or 'rational' sense is present when the temporal reference of the dependent clause is prior to that of the main clause (as in (9) below), and the purposive sense is present when the reverse temporal relation holds (as in (10)):

- (9) (a) *ɲatjulu-lu kapi-ɲa maliki yalumpu paka-ni, yujɔ-φ kuɖu ɲampu yalku-nu.*
(I-erg AUX dog that strike-nonpast, COMP-AUX child this bite-past)
'I am going to strike that dog, because it bit this child.'
(b) *maliki yalumpu-lu yujɔ-φ kuɖu ɲampu yalku-ɲu, ɲatjulu-lu kapi-ɲa paka-ni.*
(c) *maliki yalumpu-lu yujɔ-φ kuɖu ɲampu yalku-nu, ɲula kapi-ɲa paka-ni ɲatjulu-lu.*
- (10) (a) *ɲarka-tjara-lu ka-pala paɭku paɲi-ni, yujɔ-φ-pala wawiri pura-mi.*
(man-dual-erg AUX trench dig-nonpast, COMP-AUX kangaroo cook nonpast)
'The two men are digging a cooking trench in order to cook the/a kangaroo.'
(b) *wawiri yujɔ-φ-pala ɲarka-tjara-lu pura-mi, paɭku ka-pala paɲi-ni.*
(c) *wawiri yujɔ-φ-pala ɲarka-tjara-lu pura-mi, ɲula ka-pala paɭku paɲi-ni.*

In the Walbiri examples cited so far, the adjoined relative clauses are in a finite form. Finite dependent clauses in Walbiri contain an auxiliary element which, in concert with the verbal inflections, marks a range of modal categories only slightly more restricted than the range of such categories observed in main clauses, which likewise employ auxiliaries in concert with verbal inflections. But Walbiri possesses a set of adjoined infinitive clauses as well. While the infinitive types are incapable of expressing the modal categories—since they lack the auxiliary, and since the verbal inflections are replaced by the single infinitive (or nominalising) ending /-ɲjtja ~ -ɲnjtja ~ -ɲnjtja/ (the alternants depend on verbal conjugation)—they exhibit a system of complementisers which is somewhat richer than that involved in the formation of finite adjoined relatives. In infinitives, the complementiser is suffixed to the infinitive verb form.

One class of infinitive clauses closely paraphrases the finite T-relative. Thus, for example, sentence (1), in its T-relative interpretation, is closely paraphrased by (11):

- (11) *ɲatjulu-lu φ-ɲa ɲankiri pantu-ɲu, ɲapa ɲa-ɲnjtja-kura.*
(I-erg AUX emu spear-past, water drink-infinitive-COMP)

I will refer to this type as the infinitive T-relative—in this type, the event or state depicted in the subordinate clause is understood as on-going, or in effect,

at the time referred to in the main clause. The infinitive clause typically follows the main clause in linear order (but see below for a certain exception to this). In the majority of cases, the subject of the infinitive is deleted under identity with a noun phrase in the main clause, and the complementiser which appears in the infinitive is determined by the grammatical function, within the main clause, of the noun phrase which controls the deletion. In sentence (11), the controller (that is /yankiri/ 'emu') is the object in the main clause. Accordingly, the complementiser which appears suffixed to the infinitive is /-kura/. This complementiser appears not only where the controller is in the absolutive (or nominative) case, as in (11), but also when the controller is a dative complement of the main-clause verb, as in the following:

- (12) *natju ka-na-ŋku mari-tjari-mi njuntu-ku, murumuru ŋuna-njtja-kura(-ku).*
(I AUX grief-inchoative-nonpast you-dat, sick lie-infinitive-COMP(-dat))
'I feel sorry for you while you are lying sick.'

(The complement clause may optionally agree with the controller in case here.) But if the controller is the subject in the main clause, the appropriate complementiser is /-kara/:

- (13) *ŋarka ka waŋka-mi, kali tjaŋi-ninjtja-kara.*
(man AUX speak-nonpast, boomerang trim-infinitive-COMP)
'The man is speaking while trimming the boomerang.'

And if the controller is the subject of a transitive main clause, and is therefore marked for ergative case, then not only must the complementiser /-kara/ be used, but the clause must also be inflected for ergative case, in agreement with the controller:

- (14) *ŋarka-ŋku ka kali tjaŋi-ni, njina-njtja-kara-lu.*
(man-erg AUX boomerang trim-nonpast, sit-infinitive-COMP-erg)
'The man is trimming the boomerang while sitting.'

There is an interesting exception to these assertions. When the controller is simultaneously subject and object—that is, when the main clause is a reflexive—the complementiser is /-ŋkatjinta ~ -latjinta/:

- (15) *natjulu-lu ŋ-na-tju rampal-patju-nu, kali tjaŋi-ninjtja-latjinta.*
(I-erg AUXrefl accidentally-cut-past, boomerang trim-infinitive-COMP)
'I accidentally cut myself while trimming the boomerang.'

This complementiser is composite; the initial element /-ŋka ~ -la/ is identical to the locative case. The composite also functions as a case ending, the comitative, in addition to its role as a complementiser.

When the controller is a dative not strictly subcategorised by the verb of the main clause—that is, a dative which is not a direct complement of the verb but, instead, designates an argument which is tangential to the event depicted in the main clause—the appropriate complementiser is /-ŋkani ~ -laŋi/ (another composite built upon the locative):

- (16) *kuđu ka-la tjada-ŋuna-mi kiða-njanu-ku, kali tjaŋi-ninjtja-lani.*
(child AUX sleep-lie-nonpast father-own-dat, boomerang trim-infinitive-COMP)
'The child is sleeping while its father is trimming the boomerang.'¹

To my knowledge, sentences (11–16) represent the full range of cases in which a noun phrase in the main clause controls the deletion of the subject of an infinitive T-relative. Infinitive T-relatives which fail to undergo subject deletion, through a failure to meet one of the above control conditions, are somewhat rare in actual usage. Those which have been observed show the complementiser /-puru/:

- (17) *ŋalipa ka-lipa yutjuku-la njina-mi, ŋapa wanti-njtja-puru.*
(we AUX shelter-loc sit-nonpast, rain fall-infinitive-COMP)
'We (plural inclusive) (will) sit in the shelter while it rains.'

There also exists in Walbiri an infinitive type which tends, in its semantic force, toward the NP-relative. It is uniformly understood as perfective with respect to the temporal reference of the main clause—that is, it is temporally prior to the main clause—and it often implies a strong causal or rational connection between the events depicted in the two clauses. As in the case of the infinitive T-relative, so in this type, a noun phrase is deleted from the infinitive clause under the influence of a controller in the main clause. Moreover, the infinitive is inflected for case in agreement with the controller. The complementiser in this type is /-waŋu/, regardless of the controller:

- (18) *natju ka-na-la kuđu-ku mari-tjari-mi, wanti-njtja-wanu-ku.*
(I AUX child-dat grief-inchoative-nonpast, fall-infinitive-COMP-dat)
'I am sorry for the child that fell.'

In (18), the controller is a dative complement of the main clause verb, and the infinitive clause is accordingly inflected for dative case. The noun phrase from the infinitive clause was the subject there, but it is also possible to delete the object of a transitive infinitive clause. In such cases, there is fluctuation among Walbiri speakers as to the proper case inflection on the undeleted subject. Some speakers use the ergative, as is expected in transitive clauses, but others use instead the suffix /-tjaŋka/, an elative (elative of origin, primarily), close in meaning to the element /-waŋu/, which has an elative usage in addition to its role as a complementiser:

- (19) *natju ka-na-la kuđu-ku mari-tjari-mi, waŋa-tjaŋka yaŋki-ninjtja-wanu-ku.*
(I AUX child-dat grief-inchoative-nonpast, snake-elative bite-infinitive-COMP-dat)
'I am sorry for the child that was bitten by the snake.'

Purposive clauses of the type represented in (10) above also have infinitive counterparts. The infinitive purposive complementiser is /-ku/, identical in form to the dative case:

- (20) (a) *ɲarka-tjara-lu ka-pala palku paŋi-ni, wawiri pura-ɲtja-ku.*
 (man-dual-erg AUX trench dig-nonpast, kangaroo cook-infinitive-COMP)
 'The two men are digging a cooking trench in order to cook the kangaroo.'

The purposive complementiser may be extended by the elements */-ɲaŋti/* and */-puɖa/* to render, respectively, a prerequisite purposive and a desiderative:

- (20) (b) . . . , *wawiri pura-ɲtja-ku-ɲaŋti(-li).*
 (. . . , kangaroo cook-infinitive-COMP-prereq(-erg))
 ' . . . , as a prerequisite to cooking the kangaroo.'
 (c) . . . , *wawiri pura-ɲtja-ku-puɖa(-lu).*
 (. . . , kangaroo cook-infinitive-COMP-desid(-erg))
 ' . . . , with a desire to cook the kangaroo.'

The subject of the infinitive purposive is deleted under the influence of the subject of the main clause. If the latter is transitive, and its subject therefore ergative (as is the case in (20a-c)), the purposive clause may optionally inflect for ergative case as well (as indicated parenthetically in (20b-c)). When the ergative is suffixed directly to the complementiser, the latter appears as */-kura/*—thus, *[pura-ɲtja-kura-lu]* would be the case-marked form of the infinitive in (20a) above.

1. Toward a theory of the adjoined relative

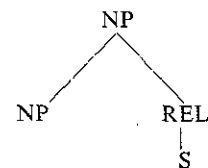
Certain basic and rather superficial observations concerning the adjoined relative structure have been presented for Walbiri. Before presenting examples from another Australian language, I would like to discuss some of the theoretical issues which must be addressed in the further study of this construction. I do not pretend to have answers to any of the questions, but I am able to make a number of suggestions and observations which might serve as a focus for future research on the subject.

An issue of central importance in the investigation of the adjoined relative clause in Australia is the correspondence between its syntactic form and its semantic interpretation—particularly for the type which corresponds to the Walbiri finite adjoined relative marked with the referential complementiser */kutja-, katji-/*. I have asserted that, under the appropriate conditions of co-reference, these clauses are open to at least two distinct interpretations—one in which the dependent clause is construed with a noun phrase in the main clause (the NP-relative interpretation), and another in which the dependent clause is construed with the modality of the main clause (the T-relative interpretation).

The question of the semantic interpretation of the adjoined relative is, to be sure, a matter which will require long and intense study before the facts can hope to be adequately understood. But assuming for the present purposes that it is correct to distinguish between NP-relative and T-relative interpretations, it is natural to wonder whether or not there is a corresponding distinction at the deep-structure level of syntactic representation. One might propose, for example, that the NP-relative interpretation is associated with an abstract syntactic representation at which the relative clause is embedded

as a constituent of a complex noun phrase the head of which is the noun phrase with which the relative clause is construed. Under such a proposal, the NP-relative would be introduced in deep structure by means of a phrase structure rule expanding the phrase category NP. Let us assume, in line with this proposal, that the phrase structure component produces structures of approximately the following form:

(21)

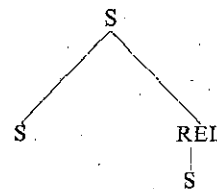


(It is immaterial to this discussion whether the relative clause precedes or follows the head.) These structures would then be available for interpretation by semantic projection rules of the type proposed by Katz and Fodor (1963) for attribution in modifier-head constructions. The essential ingredient of this proposal is that the semantic reading of the relative clause would be associated with the head noun phrase by virtue of its deep-structure position. By contrast, the T-relative clause might be introduced by means of a phrase structure rule expanding the category S. We might assume, for example, that it is generated in the marginal position which it occupies in surface structures, in which case the semantic projection rules would, correctly, fail to associate it with a noun phrase.

If NP-relatives are embedded under NP in deep structure, then their surface positioning must be effected by means of a transformational rule whose product is a derived structure identical in all essential respects to that associated with T-relatives. That is to say, at some early stage of derivation, NP-relatives become identical in form to T-relatives. I will refer to this proposal as the *extraction analysis* for NP-relatives.

Before commenting further on the extraction analysis, I would like to present an alternative conception of the derivation and interpretation of NP-relatives. I will refer to this alternative as the *adjunction analysis*. From a syntactic point of view, it is the null hypothesis, since it assumes that NP-relatives and T-relatives are entered in base structures in the same marginal—that is, adjoined—position which they occupy in surface structures. Moreover, under the adjunction analysis, NP-relatives and T-relatives are viewed as a single clausal category. For the purposes of this discussion, I will assume that the phrase structure component provides structures of the following form:

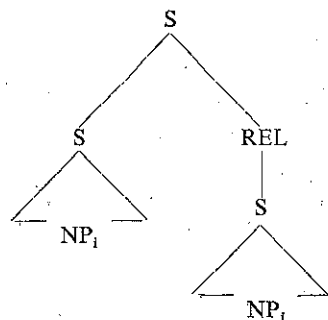
(22)



in which the relative clause (REL over S) and main clause (S to the left of REL) are descended from a common S-node. I do not wish to insist upon the details of this structure; rather I offer this as a provisional configuration which expresses the formal fact that the relative clause is *adjoined* to the main clause, rather than embedded within it—my intent is to reflect the prevailing surface structure observation that finite relative clauses, at least, are never flanked by material belonging to the main clause. I also do not wish to insist upon the linear ordering of the main and dependent clauses. I assume here, without further comment (but see below), that the basic order is S REL and that the alternative order REL S is derived by preposing.

If relative clauses of the Walbiri type are uniformly adjoined in deep structure, there is no configurational correlate to the semantic distinction between NP-relative and T-relative interpretations. I propose, therefore, that there is a semantic rule which associates the meaning of the subordinate clause with a main-clause noun phrase provided the latter is co-referential with a noun phrase in the subordinate clause. Thus, given a complex structure of the form

(23)



in which NP_1 and NP_2 are co-referential, the semantic interpretation of the sentence dominated by the REL-node is associated with NP_1 by means of a semantic embedding rule.

Before proceeding, I feel that it is appropriate to digress momentarily with a caveat. Both the extraction analysis and the adjunction analysis, if the semantic embedding rule is taken as an integral part of the latter, imply that the distinction between the NP-relative and T-relative interpretations is a discrete and clear-cut one. Although I will continue to operate as if the distinction were discrete, it is important not to accept this as an established fact and to continue to regard the interpretation of adjoined relatives as a matter deserving of careful and intensive research. It may well turn out, for example, that the proper way to view the adjoined relative is quite different from what is implied by either of the two analyses formulated above. It is not inconceivable that the strictly grammatical responsibility of a general theory of Walbiri linguistic competence ends with the definition of well-formed adjoined clauses and that what I have been referring to as the 'interpretation' of adjoined relatives is really a matter of usage. Under this proposal, the syntax and morphology of Walbiri would concern themselves only with such

matters as the proper pairings of auxiliaries with verbal inflections, the choice of complementisers, the proper restriction of auxiliary choice under complementation (for example, to rule out such ill-formed combinations as */*katji-kapi-*/ (COMP-FUT), that is, with overt future auxiliary prefixed by a complementiser), and other strictly formal aspects of complex sentence construction; and the semantic component would concern itself with the interpretation of clauses and, perhaps, with the distinction between the causal/purposive relation characteristic of clauses using the complementiser /*yugu-*/ and a much more vague relation characteristic of clauses in /*kutja-*, /*katji-*/. The semantic component itself would not be concerned with the assignment of T-relative or NP-relative senses to relative clauses. These would not be distinct interpretations but rather conditions on usage. The relationship between form and usage might, under this proposal, take the form of statements of the following type: (1) a relative clause may be used to specify the reference of a main-clause noun phrase provided the latter is co-referential with a noun phrase in the relative clause; (2) a relative clause may be used to specify the temporal setting of the main clause provided the two clauses make identical temporal reference; and so on.

If this were the correct conception of the Walbiri relative clauses in /*kutja-*, /*katji-*/, it would not be surprising to find that the range of usages extended well beyond those subsumed under the simple T-relative/NP-relative classification—one might expect to find, for example, that any reasonable connection between the clauses would render a complex sentence acceptable, provided that the connection had some communicative value. And, for Walbiri at least, the use of relative clauses does in fact extend beyond the simple two-way classification. In sentence (24) below, for example, the subordinate clause is neither a T-relative nor a NP-relative; instead, it serves to provide a contrastive parallel to the proposition embodied in the main clause:

- (24) *kutja-ka-lu yuwali nanti-ni tjulpu panu-kari-li kankalu watiya-la, manja-nka ka-njanu tjinjjiwanu-lu nanti-ni yutjuku-padu.*
(COMP-AUX nest build-nonpast bird many-other-erg up tree-loc, spinifex-loc AUXrefl jinjiwarnu-erg build-nonpast shelter-diminutive)
'Whereas many other birds build a nest up in a tree, the jinjiwarnu (bird sp.) builds itself a small shelter in the spinifex grass.'

And in the following sentence, the relative clause specifies an enabling condition for the event projected in the main clause:

- (25) *njampu kutja-ka-na tjunma maqa-ni natjulu-lu, nula kapi-na-tju natjulu-lu patji-ni.*
(this COMP-AUX knife have-nonpast I-erg, so AUXrefl I-erg-now/then cut-nonpast)
'I have this knife, so I'm going to cut myself now. Now that I have this knife, I'm going to cut myself.'

I have not made an exhaustive study of the communicative functions which relative clauses of this type can be made to fulfill in Walbiri, but in my data on actual Walbiri usage, as opposed to data obtained in the course of direct

grammatical eliciting, the T-relative and NP-relative senses account for only a part of the observed instances of the relative clause—and the structure is extremely frequent, particularly in the essay-like style which Walbiri speakers adopt in ethnoscientific discourse, a style which predominates in my recorded material on usage. It is abundantly clear, in any event, that the acceptability of a relative clause does not depend upon its ability to receive a T-relative or NP-relative interpretation. To be sure, this does not eliminate the possibility that these are concrete and distinct notions, to be defined in the grammar of Walbiri and assigned by the grammar to sentences. Nor does it eliminate the possibility that the NP-relative interpretation is associated with a deep-structure configuration like (21). It does, however, bring into view the alternative possibility that, apart from the strictly formal morphological and syntactic conditions on well-formedness *within* clauses, the overall well-formedness of a complex sentence containing a relative clause is not determined by the grammar, but rather by a subset of the system of maxims which are presumably observed in the construction of felicitous discourse, involving such notions as 'relevance', 'informativeness', and the like—compare, for example, the Gricean principles of conversation (Grice 1967).

I would like now to return to a consideration of the extraction analysis vis-à-vis the adjunction analysis. It is a matter of considerable theoretical import to decide the issue of whether or not the grammar of Walbiri has a rule which extracts a relative clause from an embedded position to an adjoined position. Notice that if the extraction rule exists, it is obligatory (for the finite relative clause, at least), since it is universally true in Walbiri surface and shallow structures that a NP-relative clause and its would-be head never form a syntactic unit for the purposes of any well established rule of Walbiri syntax. Consider, for example, the rule which places the auxiliary in second position within the clause to which it belongs (referred to as Aux-Insertion in Hale, 1973). This rule positions the auxiliary after the first nonauxiliary immediate constituent of its clause, obligatorily if the auxiliary base is shorter than disyllabic and not combined with a complementiser, optionally otherwise. It accounts for the positioning of the auxiliary in

- (26) *maliki wiri-ŋki φ-tji yalku-nu ŋatju.*
(dog big-erg AUX bite-past me)
'The big dog bit me.'

and in

- (27) *maliki yali-li φ-tji yalku-nu ŋatju.*
(dog that-erg AUX bite-past me)
'That dog bit me.'

and for the alternative positionings in

- (28) (a) *kapi-lipa-tjana wawiri-patu luwa-ni ŋalipa-lu.*
(AUX kangaroo-pl shoot-nonpast we-erg)
(b) *wawiri-patu kapi-lipa-tjana luwa-ni ŋalipa-lu.*
(kangaroo-pl AUX shoot-nonpast we-erg)
'We (plural inclusive) are going to shoot the several kangaroos.'

The positioning of the auxiliary in (26) and (27) shows that a noun together with an adjective modifying it (*maliki wiri* 'dog big') or a noun together with

its determiner (*maliki yali* 'dog that') may form a single constituent of the sentence at the time the AUX-Insertion rule applies. But the same is not true of a noun phrase and a relative clause construed with it. Thus, while AUX-Insertion provides evidence for noun phrase constituency, it fails to give evidence that there exists a constituent NP consisting of a relative clause and its head (that is, a structure of the form represented by (21)). This is, of course, only negative evidence, showing merely that such a constituent does not exist at surface structure. But, in general, to my knowledge, there is no direct evidence that a complex noun phrase constituent exists at any level of syntactic representation. I will return presently to other considerations which, from a typological perspective, might be expected to provide evidence in favour of the extraction analysis. But first I wish to comment upon the theoretical interest which I perceive in relation to this issue.

Under the proposal that Walbiri distinguishes NP-relative from T-relative configurations in deep structure, there must exist a transformational rule of extraction which effects an absolute neutralisation of the two types. It is a serious question whether a synchronic grammar containing such a rule should be allowed in linguistic theory. It is not unreasonable to imagine that such a grammar would be impossible to learn in the process of language acquisition. The question is this: Is it possible to learn a syntactic rule which universally removes from surface structure all structural evidence of the underlying configurations to which it applies? If it is possible under certain conditions, what are those conditions? For example, is it possible to acquire such a rule only if it interacts with independently motivated rules in such a way that the latter provide surface evidence for the existence of the underlying structures to which the obligatory rule applies? That is to say, would an obligatory extraction rule, for instance, be learnable if some other rule— independently motivated and with an effect visible at surface structure— necessarily applied prior to extraction? And would such an extraction rule be otherwise unlearnable?

The question of learnability cannot, of course, be settled by an examination of a particular synchronic grammar. But it is quite conceivable that answers to this question will come from the study of language change, particularly within the framework developed by Kiparsky (for example, 1971, 1973). It may be possible to demonstrate, for example, that in the majority of cases in which a syntactic rule of the sort under discussion here becomes obligatory at a particular stage in the history of a language, subsequent stages undergo a grammatical reanalysis according to which the structural configuration formerly achieved by application of the rule is developed directly by rules of the base component, thereby eliminating any motivation for the transformational rule or for the underlying configuration to which it formerly applied. If this were the case, then we would have strong evidence in favour of the view that such rules must be disallowed, or at least evaluated as extremely costly, in synchronic grammars. It may turn out, of course, that the relevant type of grammatical reanalysis happens only when the obligatory rule in question precedes all other rules which might give surface evidence of the underlying structure to which it applies. In any event, the issue is an empirical one on which evidence from linguistic change has direct bearing.

While I have no firm evidence against the extraction analysis for Walbiri, it is called into question by considerations such as those outlined above. This

is not to say, however, that one could not find language-internal evidence against an extraction analysis. Further research on Walbiri itself might reveal data which would make the extraction analysis unworkable. Consider, for example, a sentence like

- (29) *maliki-li ka minitja watjllipi-nji, kutja-lpa-pala-njanu kulu-yku nja-gu.*
 (dog-erg AUX cat chase-nonpast, COMP-AUX recip anger-erg/inst look-past)
 'The dog is chasing the cat, which were looking at one another angrily.'

I am not sure of the status of such sentences; but if sentence (29) proved to be fully grammatical, with a NP-relative interpretation in which the relative clause is simultaneously construed with the main-clause subject [*maliki-li*] 'dog-erg' and the main-clause object [*minitja*] 'cat', it could not be derived by means of an extraction rule alone—at least not under any straightforward formulation of that rule. But such a sentence would be consistent with the adjunction analysis, since the main and subordinate clauses are linked by NP-coreferentiality—the relative clause is presumably reduced from a subordinated version of [*maliki-li manu minitja-lu lpa-pala-njanu kulu-yku nja-gu*]. 'The dog and the cat were looking at one another angrily.' In short, the study of NP-relative clauses with split antecedents might provide Walbiri-internal evidence against the extraction analysis. And there are undoubtedly other avenues of research which could be followed to settle the question for Walbiri, or for any language. The recursive capabilities of the two competing analyses might, for example, provide evidence bearing on the issue. Both analyses permit multiple subordinations and both analyses can account syntactically for the existence of sentences like

- (30) *kali phi-tji ma-ninjiti-nta yali, gula-ka ma-da-ni yapa-kari-li, gula-ka njura njalipa-njanu-la njina.*
 (boomerang AUX get-go-imperative that, COMP-AUX have-nonpast person-other-erg, COMP-AUX camp us-possessive-loc sit [-nonpast])
 'Go get me that boomerang that that other person who lives in our camp has.'

(This is from a speaker who uses [*gula-*] in place of [*kutja-*] for the instantiational referential complementiser.) But it might well turn out that a study of the full recursive capabilities of this structure, and the problem of constructing a relative clause with a main-clause noun phrase in multiply subordinating sentences, will uncover evidence favouring one analysis over the other.

I would like now to turn to a consideration of a number of other processes involved in the formation of relative clauses in Walbiri—processes whose counterparts in other languages of the world are often associated with relative clauses of the embedded type. In part, I will be concerned with the question of how these relate to the validity of the extraction analysis (with largely negative results, as it happens), but primarily I will be concerned with providing a partial schedule of topics, so to speak, for the continued investigation of this structure in Australia.

1.1. Relativisation

An obvious question which suggests itself in relation to the issue of extraction versus adjunction is whether there exists a process of relativisation which distinguishes NP-relatives from T-relatives. And if there is such a process, does it necessarily apply within the domain of a structural configuration of the type proposed under the extraction analysis—that is, a structure of the type represented by (21) above? The question of relativisation is basically this: In NP-relative structures, what happens to the coreferential noun phrase in the subordinate clause?

For Walbiri, to my knowledge, the answer to this question is that there is no treatment accorded to coreferential noun phrases in NP-relatives which is distinct in any essential way from the treatment accorded to coreferential noun phrases in T-relatives, or other complex sentence types, for that matter. Wherever NP-coreferentiality occurs between the main and subordinate clauses, the second occurrence is either deleted, obligatorily in the case of infinitive clauses (see above), or else, in the case of finite clauses, the second occurrence may either delete or be 'pronominalised' (that is, represented in surface structure by a determiner, normally the 'anaphoric' determiner [*gula-*]); or the noun may even remain undeleted, with or without an accompanying (but not necessarily adjacent) determiner. Moreover, there is no special treatment of the coreferential noun phrase in the subordinate clause as distinct from that in the main clauses. The deletion or pronominalisation depends upon the linear order of the two clauses. The favoured pattern is that in which the *second* of two coreferential noun phrases is affected. Thus, if the main clause precedes the subordinate, then the coreferential noun phrase in the latter is affected, as in

- (31) *natjulu-lu ka-na-la makiti-ki wari-ni yanika-ku, kutja-phi-na wawiri luwa-nu (gula-yku).*
 (I-erg AUX gun-dat seek-nonpast, that-dat COMP-AUX kangaroo shoot-past (it-inst))
 'I am looking for the gun that I shot the kangaroo with.'

(The favoured position of the anaphoric element in such cases is final, or near-final, within the subordinate clause.) If the subordinate clause precedes, then the coreferential noun phrase in the *main* clause is affected, as in

- (32) *makiti-li kutja-phi-nga njuntulu-lu wawiri luwa-nu yanika-yku, gula-ku ka-na-la wari-ni.*
 (gun-inst COMP-AUX you-erg kangaroo shoot-past that-inst, it-dat AUX seek-nonpast)
 'That gun you shot the kangaroo with, I am looking for it.'

(In this ordering, the favoured position for the anaphoric determiner is initial within the main clause.) In the following sentence, the coreferential noun phrase in the second clause is represented fully by the determiner and the noun:

- (33) *yayka kutja-φ-na-tjana panu nja-ŋu wakuljari pili-ŋka, ŋula-ku kapi-ŋa-tjana tjankadu-ya-ni natju pili-kira wakuljari-ki.*
 (those COMP-AUX many see-past wallaby hill-loc, them-dat AUX against-go-nonpast I hill-dir wallaby-dat)
 'Those many wallabies which I saw in the hills, I will go to the hills after them.'

This sentence is particularly interesting, incidentally, because of the fact that there are two instances of NP-coreferentiality in it (*/pili/* 'hill' occurs in both clauses, and */wakuljari/* '(rock-)wallaby' occurs in both). And although the use of the anaphoric determiner */ŋula-ku/*, necessarily construed with */wakuljari-ki/* 'wallaby-dat', would normally strongly favour the NP-relative interpretation according to which the relative clause specifies the wallabies, the context in which the sentence was recorded—a dialogue concerning projected itineraries in a food-gathering expedition—makes it quite possible, even more likely, that the relative clause is being used to specify the hills. Be this as it may, sentences of this type—not uncommon in ordinary speech—demonstrate that deletion of the second of two coreferential noun phrases is not inevitable.

The treatment of coreferential noun phrases in NP-relative clauses is not distinct in any way known to me from the treatment of coreferential noun phrases in complex sentences of other types. And since the deletion and pronominalisation processes involved depend upon the surface linear order of the main and subordinate clauses, it is clear that they cannot apply before the hypothesised extraction rule—they cannot, therefore, be used to support the view that the configuration (21) exists at some underlying level of syntactic representation.

I do not mean to imply that problems concerned with coreferentiality, pronominalisation, and deletion are not worthy of study in their own right. There is much to be investigated in this area. For example, deletion of an entire noun phrase surely depends upon recoverability to some extent. At least it is rather clear from the data available that noun phrases in certain grammatical relations (for example, subject and object) delete more readily than others (for example, instrumentals, locatives, benefactives). Thus, pronominalisation (or retention) is favoured over deletion in sentences like (31), to a greater extent than in sentences like

- (34) *natjulu-lu ka-na-la makiti-ki wari-ŋi, kutja-φ-npa watjawatja-ma-nu njuntulu-lu.*
 (I-erg AUX gun-dat seek-nonpast, COMP-AUX loss-caus-past you-erg)
 'I am looking for the gun you lost.'

where deletion is much preferred. Likewise, in sentences like (35), retention and pronominalisation are favoured over deletion:

- (35) (a) *ŋura ka-na-tju ŋu:lka-ŋji, yi-φ-na ŋuna ŋura-ŋka.*
 (place AUX clear-nonpast, COMP-AUX lie[-nonpast] place-loc)
 (b) *ŋura ka-na-tju ŋu:lka-ŋji, yi-φ-na ŋuna ŋula-ŋka.*
 (place AUX clear-nonpast, COMP-AUX lie[-nonpast] it-loc)
 'I am clearing the place in order to lie down on it.'

(These are from a speaker who uses the purposive complementiser alternant */yi-/* rather than */yuru-/*.)

It is interesting to note further that the well-formedness of complex sentences exhibiting NP-coreference does not depend upon NP-identity, but rather on the strictly semantic notion of coreference. Thus, sentences like (36), in which nominal coreference is manifested by a pair of synonyms, are acceptable and not particularly unusual:

- (36) *walpa-ŋku ka-ŋalpa tjuru wa:lwa:l-luwa-ni, kutja-ka payi wayka.*
 (wind-erg AUX hair tossing-strike-nonpast, COMP-AUX wind speak [-nonpast])
 'The wind tosses our hair when it blows (lit. speaks).'

While the study of these matters is important, and perhaps crucial to a proper understanding of Walbiri linguistic competence, it seems to me unlikely at this point that it will contribute in any substantive way to the question of the underlying syntactic source of NP-relatives.

1.2. Case agreement

At an earlier point in this discussion, it was pointed out that an infinitive clause may agree in case with the main-clause noun phrase which controls the deletion of a coreferential noun phrase within the infinitive. This is illustrated by sentence (18), repeated here for convenience:

- (18) *natju ka-na-la kuḍu-ku maŋi-tjari-mi, wanti-ŋtja-wanu-ku.*
 (I AUX child-dat grief-inchoative-nonpast, fall-infinitive-COMP-dat)
 'I am sorry for the child that fell.'

The fact of case-agreement might, on initial consideration, be taken as evidence in favour of an underlying structure in which the infinitive clause is embedded under the same NP-node as the nominal with which it agrees. It is known, for example, that when a noun phrase is dismembered by the permutation rules which account for the free word order so characteristic of Walbiri, each constituent of the noun phrase is separately marked for case. Thus, while in (26) the subject noun phrase */maliki wiŋi-ŋki/* 'dog big-erg' is, as a unit, marked for ergative case, the constituents of that noun phrase are separately marked for the ergative in alternative renditions of (26) in which the parts of the noun phrase are separated:

- (37) (a) *maliki-li φ-tji yalku-ŋu wiŋi-ŋki.*
 (dog-erg AUX bite-past big-erg)
 (b) *wiŋi-ŋki φ-tji yalku-ŋu maliki-li.*
 (big-erg AUX bite-past dog-erg)

I assume, speculatively, that this is accomplished by a rule of concord which marks each constituent of a noun phrase with an abstract case feature appropriate to the case category of the noun phrase as a whole. Whether the actual case ending appears once or repeatedly depends upon whether the noun phrase constituents, at the time the case features are given phonological shape, are dominated by a common NP-node—if they are, then the case will

be spelled out once, on the final constituent of the noun phrase; but if they are not, the case will be spelled out separately on each of the constituents. Whatever the details of concord may be, it is obvious that the case agreement in (18) would be an automatic consequence of the concord rule under the extraction analysis, provided the extraction rule followed concord. Concord would then be a rule giving surface evidence of an underlying complex noun phrase configuration.

Although it is not inconceivable that this is the correct analysis of sentences like (18), case agreement cannot be used as an argument in favour of the extraction analysis for NP-relatives in general, for the simple reason that it is not limited to infinitives like that in (18), the only type for which the NP-relative interpretation seems at all appropriate. It applies obligatorily in the case of T-relative infinitives employing the complementiser /-kara/, and it applies optionally in the case of purposives and complements in /-kura/. It appears, therefore, that case agreement is to be distinguished from case concord. I suggest that it is intimately linked with the obligatory coreferential noun phrase deletion characteristic of infinitive clauses. That is to say, case agreement is a surface manifestation of the control relation which holds between a noun phrase in the main clause and a noun phrase (obligatorily deleted) in the infinitive clause. And however the agreement is effected, it is defined over the control relation and not over the strictly structural relation of shared domination which is presumably involved in case concord. Viewed in this light, the phenomenon of case agreement is closely similar in nature to the phenomenon of complementiser choice (discussed above in connection with infinitives); this is also defined over the control relation.

If it is correct that case agreement is to be distinguished from case concord, and if, moreover, case agreement is to be defined in terms of control rather than in terms of shared domination, then there is no reason to expect it to be associated with NP-relatives to the exclusion of other subordinate clauses—and it is evidently not limited to NP-relatives in Walbiri. It cannot, therefore, be used to support the extraction analysis for NP-relatives; nor can it be used to support any analysis which posits a source for NP-relatives which is syntactically distinct from that of, say, T-relatives and purposives.

1.3. Attraction

The prevailing surface structure fact about Walbiri relative clauses is that they are marginal to, rather than integrated into, the main clause. This is entirely consistent with the adjunction analysis, which directly represents the marginality of the subordinate clause to the main clause by restricting recursion in the phrase structure component to the rule which expands the category S.

However, this prevailing surface structure marginality is fully true only in the case of finite relative clauses. Infinitive clauses, by contrast, have the ability to appear *within* the main clause and to permute with other constituents of it. Consider, for example, the following sentence:

- (38) *panka-njtja-kura* ϕ -*na* *wawiri luwa-nu njtjulu-lu*.
(run-infinitive-COMP AUX kangaroo shoot-past I-erg)
'I shot the kangaroo while it was running.'

This is an acceptable alternative to:

- (39) *njtjulu-lu* ϕ -*na* *wawiri luwa-nu, panka-njtja-kura*
(I-erg AUX kangaroo shoot-past, run-infinitive-COMP)

In (38), the infinitive clause is clearly a constituent of the main clause in surface structure, as evidenced by the positioning of the main-clause auxiliary—this auxiliary, having the null base / ϕ -/, must follow the first constituent of its own clause. Furthermore, the infinitive clause may permute to a medial position within the main clause, as in

- (40) *wawiri* ϕ -*na* *panka-njtja-kura luwa-nu njtjulu-lu*.

This behaviour is observed with particular frequency when the infinitive clause consists, as it does in this instance, of a single word.

It is possible that this reflects an embedded source for infinitive relative clauses. But if so, the embedded source is not exclusive to NP-relatives, since all infinitive types can appear as surface structure constituents of the main clause—in fact, the infinitive in (38–40) belongs to the type which most closely approximates the T-relative in semantic interpretation. Also, the infinitive type which most closely approximates the NP-relative gives no evidence of being embedded under NP—nor does any other type. The degree of embedding which they exhibit is best characterised by saying that they may appear as integrated constituents of the main clause. In any event, there is little evidence one way or the other concerning the deep structure embeddedness of infinitive relative clauses. Since their surface structure position is either marginal to or internal to the main clause, it is possible, in the absence of decisive evidence, to propose at least two hypotheses concerning them: (1) the infinitive relative clause is embedded within the main clause in deep structure, and it may optionally extrapose, normally to the position following the main clause; (2) the infinitive, like the finite relative clause, is adjoined to the main clause in deep structure; but unlike its finite counterpart, the infinitive may move into the main clause, thereby becoming a constituent of that clause for the purposes of such elementary syntactic processes as AUX-Insertion and constituent permutation. I will refer to the process involved in the second of these alternatives as *attraction*.

I do not know whether a strong case can be made for deriving infinitive clauses from finite clauses by a process of auxiliary deletion—under appropriate conditions of modality sequencing between the main and subordinate clauses. But this seems a natural suggestion and, if it were the correct analysis of infinitives, it would follow that infinitives are of the same deep-structure status as finite relatives. To maintain this proposal, however, it will be necessary to account, in some natural way, for the fact that infinitives display a much more varied array of complementisers than do finite dependent clauses—although, by and large, for each general finite type there is a corresponding infinitive type.

There are many differences between finite relatives and infinitive relatives. The latter, unlike the former, obligatorily suffer deletion of a noun phrase under appropriate conditions of control; they may be marked for case in agreement with a controller in the main clause; and they may be integrated

into the main clause. But the most striking difference has to do with their clausal status. Finite dependent clauses are full sentences in all respects—they display all of the internal syntactic properties and capabilities characteristic of main clauses; and they are subordinate only by virtue of the complementiser, but even this is not enough to prevent them from appearing as independent clauses, *cum* complementiser—purposives in /yuyu- (yi- ~ yiŋa-)/ are used independently to express a desire or a necessity (for example, /yi-lpa-na ya-ntala wilinjij/ 'I should go hunting; I would like to go hunting.'), and clauses in /kutja-/ (in the present tense) are used independently to render a presentational sense (for example, /yali kutja-ka kari-mi tjapanangka/ 'There stands Japanangka.'). By contrast, infinitives, if they have a sentential origin, are severely reduced in structure. In their shallow syntactic behaviour, at least, they have the characteristics of nominals. This nominal character consists not only in the ability of infinitives to accept case inflection, but also in their ability to dismember and allow their erstwhile constituents to permute with the constituents of the main clause. As in the case of noun phrases, so in the case of infinitives, when dismemberment occurs, the endings which formerly marked the whole appear on each of the separated constituents. In this, the complementisers behave like case endings. Compare, for example, sentence (41a) and the alternative rendition (41b):

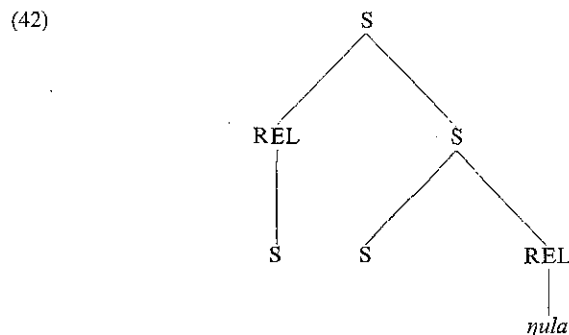
- (41) (a) *ɲarka ka-ɲa nja-nji, kalɪ tjaŋɪ-ɲinjɪtja-kura.*
(man AUX see-nonpast, boomerang trim-infinitive-COMP)
(b) *ɲarka ka-ɲa kalɪ-kira nja-nji tjaŋɪ-ɲinjɪtja-kura.*
(man AUX boomerang-COMP see-nonpast trim-infinitive-COMP)
'I see the man trimming the boomerang.'

Note that in (41b) the infinitive complementiser /-kura/ appears on each of the erstwhile constituents of the infinitive clause. This behaviour of infinitive complementisers is perhaps not surprising in view of the fact that many of them are identical in form to case endings (for example, /-kura/ 'directional, T-relative'; /-ɲkatjinta ~ -latjinta/ 'comitative, T-relative'; /-ku/ 'dative, purposive')—this is, in itself, an extremely intriguing phenomenon, deserving of attention; it is not limited to Walbiri.

It is my feeling that the ability of infinitives to attract into the main clause is intimately associated with their reduced status. Full sentences may not attract into the main clause, but structures which are less than a full sentence may. The possibility that attraction exists as a syntactic process in Walbiri is appealing from another standpoint. Recall that when a finite relative clause is preposed to the main clause, it is customary to initiate the main clause with the anaphoric element /ɲula/. Now, in the case of NP-relatives, there is the distinct possibility that /ɲula/ is nothing other than the regular anaphoric determiner associated with retention (or partial retention—that is, pronominalisation) of the second of two coreferential noun phrases. But this does not account for its appearance in complex sentences for which the NP-relative interpretation is inappropriate (for example, T-relatives, conditionals, and purposives). The occurrence of /ɲula/ there must be accounted for in a different way. I would like to suggest the following. Preposed relative clauses, of all types, are derived from right-adjoined relatives by means of a transformational rule which positions them to the left of the main clause and

Chomsky-adjoins them to the top-most S-node. This might, incidentally, account for the prevailing tendency to pause between a preposed subordinate clause and the main clause since, after preposing, the former would be removed from the latter by two S-nodes. The preposing rule does not entirely eliminate the original right-adjoined relative clause; rather, it leaves a trace of it in the form of the anaphoric element /ɲula/ (which functions as a 'sentence proform', in this case). This element, being less than a sentence, subsequently attracts into the main clause—and, preferably, into a focused position within that clause; hence its favoured initial position. Attraction of /ɲula/ into the main clause is, so far as I can tell, obligatory.

The preposing rule postulated here operates on a structure of the form represented in (22) above to produce a derived structure of the following form:



Subsequently, /ɲula/ attracts into the main clause—that is, the clause immediately to its left—and assumes a focused position there.

There is independent motivation for the first step in this derivation—in particular, the leaving of a trace of an extracted constituent. Walbiri has a left-dislocation rule which extracts a noun phrase from a finite clause, leaving /ɲula/ behind. Apparently, a left-dislocated noun phrase is Chomsky-adjoined to the S-node—in any event, it is clearly removed from the sentence as evidenced both by pausing and by the fact that it is no longer a constituent of the sentence for the purposes of Aux-Insertion:

- (43) *ɲapiri ɲangka, ɲula ka kari-mi wulpayi-ɭa.*
(eucalyptus the, it AUX stand-nonpast creek-loc)
'The river red gum, it grows in creeks.'

The second part of the derivation—that is, attraction of /ɲula/ into the main clause—is strictly associated with the suggested preposing rule, and its justification will depend upon the outcome of further research relating to the proposal as a whole.

My own interest in this proposal is considerably heightened by sentences like the following:

- (44) (a) *maliki kutja-φ wanti-tja, ɲula-kura φ-ɲa yaɖa-paka-ɲu ɲatjulu-ɭu.*

(dog COMP-AUX fall-past, then-COMP AUX rep-strike-past I-erg)

'When the dog fell, thereupon I struck it.'

(b) *ɲatju kutja-φ-ɲa wanti-tja, ɲula-kura φ-tju maliki-li-iki yada-pu-ɲu.*

(I COMP-AUX fall-past, then-COMP AUX dog-erg-then rep-bite-past)

'When I fell down, thereupon the dog bit me.'

These contain preposed T-relative clauses. Interestingly, the anaphoric trace, left behind by the preposing operation and subsequently attracted into the main clause, is inflected by precisely the same complementiser that would have appeared on the subordinate clause if it had been an infinitive—that is, the complementiser which appears when the object of the main clause controls the deletion of the subject of an infinitive T-relative. This is very suggestive. It suggests, in effect, that a record of the particular NP-coreferentiality holding between the main and subordinate clauses—including information concerning the grammatical relations which the coreferential noun phrases bear in their own clauses—is encoded in the relative clause, perhaps in the REL-node, or in the relative complementiser, and is, moreover, maintained in the trace left behind in the preposing process. The spelling out of the complementiser then follows a general rule that the case-like suffixal form is used whenever the appropriate 'record keeping' features are present in a category which is less than a full sentence—that is, not only infinitives, but anaphoric elements as well.

A great deal of work remains to be done on the relative clause in Walbiri. My purpose here has been merely to indicate some potentially fruitful topics for investigation. An important area which I have not touched upon in this discussion is the accessibility of a noun phrase to relativisation (cf. Keenan 1972, and other references to his work cited there). If the adjunction analysis is correct for Walbiri, then the accessibility question in Walbiri amounts to the following: In structure (23), under the NP-relative interpretation (assuming this to be a real notion), what grammatical functions and what structural positions may NP_i occupy? In Walbiri, there are no apparent limits on the grammatical functions of NP_i within the immediately subordinate clause, but I have not as yet been able to determine the total range of structural positions which NP_i may occupy, though I doubt that they differ in any essential way from the positions which any anaphoric element, construed with an antecedent in the main clause, may occupy.

2. Examples of the adjoined relative in Kaititj

I would like now to turn to a brief presentation of data on the relative clause from another Australian language. I have chosen the Arandic language Kaititj to do this. Although Kaititj is an eastern neighbour of Walbiri, and therefore geographically close to the latter, its relative clause differs in interesting ways, as does that of the Arandic languages generally.

Kaititj, like Walbiri, has a class of finite subordinate clauses which receive a NP-relative interpretation. These are especially marked by means of an enclitic complementiser /-ar/ (/-al/ in the other Arandic languages) which attaches to the first constituent of the subordinate clause:

(45) *agir atj ari-nk, atuyi-l-ar wi-nh.*

(kangaroo I:erg see-pres, man-erg-COMP shoot-past)

'I see the kangaroo that the man shot.'

(Arandic segmental phonology is quite complex and not particularly well understood; and I would like to make a few comments on the orthographic representations. The symbol /i/ represents a high to high-mid central vowel [i ~ ə], except morpheme-initially, where it is a high-mid front vowel. It tends to front and raise when adjacent to /y/, and to round when adjacent to /w/. Word-final vowels, omitted from the transcription, are predictable entirely—they are the high to high-mid central vowel when unstressed; but they are the low central vowel [a] when stressed. Stress is also predictable, appearing on the first post-consonantal vowel in the word. The symbol /g/ designates an unrounded dorso-velar glide, and the symbol /h/ is used as a diacritic to represent lamino-dental articulation. There also exists a series of nasals with stop-onset—these are represented by upper-case letters. Other symbols have their conventional Australianist values.)

The subordinate clause in (45) is presumably reduced from the following:

(46) *atuyi-l agir wi-nh.*

(man-erg kangaroo shoot-past)

'The man shot the kangaroo.'

by deletion of /agir/ 'kangaroo' under identity with the object noun phrase in the main clause. Kaititj, and the other Arandic languages as well, differ rather strikingly from Walbiri in that finite relative clauses are inflected for case in agreement with the main-clause noun phrase with which they are construed. This is not apparent in (46), since the relevant main-clause noun phrase there, being an object, is in the absolutive and is, therefore, not overtly marked for case. But in (47) below, the main-clause noun phrase is in the dative case—in conformity with the case government of the main-clause verb /uNthu-/ 'to seek'—and the relative clause accordingly, is inflected for dative case. The case ending is suffixed directly to the finite verb:

(47) *agiri-w ayij uNthu-ran, atuyi-l-ar wi-nhi-w.*

(kangaroo-dat I:nom seek-prog, man-erg-COMP shoot-past-dat)

'I am looking for the kangaroo that the man shot.'

Further examples of case agreement are presented below:²

(48) (a) *agiri-wal ayij api-yir, ɲt-ar wi-nhiri-wal.*

(kangaroo-dir I:nom walk-fut, you:erg-COMP shoot-past-dir)

'I will go up to the kangaroo which you shot.'

(b) *agiri-wal ɲ api-n, atj-ar ayNi-njiri-wal.*

(kangaroo-dir you:nom walk-imperative, I:erg-COMP spear-past-dir)

'You go up to the kangaroo I speared.'

(c) *agiri-w ayij uNthu-ran, atjar ayNi-nji-w.*

(kangaroo-dat I:nom seek-prog, I:erg-COMP spear-past-dat)

'I am looking for the kangaroo I speared.'

- (d) *ulakiyti-l ayiŋ anti-yan, atjiri-yi-l-ar atji-ŋ katji-mpwari-nhi-l.*
(windbreak-loc I:nom sit prog, brother-my-erg-COMP me-obj
benefactive-make-past-loc)
'I am sitting in the windbreak that my brother made for me.'
- (e) *atuyi-thiy ayiŋ api-nhi-ŋin, ŋ-ar uNthu-yayni-thiy.*
(man-relative I:nom walk-past-hither, you:nom-COMP seek-past:
imperfective-elative)
'I have come from the man whom you were seeking.'
- (f) *atuyi-w ayiŋ uNthu-ran, ŋki-ŋ-ar alari-nhi-w.*
(man-dat I:nom seek-prog, you-obj-COMP hit-past-dat)
'I am looking for the man who hit you.'

Kaititj shares with Walbiri the option of preposing the relative clause, although it seems to be taken up somewhat less often in Kaititj than in Walbiri—in the case of the NP-relative at least. When the relative clause is preposed, the coreferential noun phrase remains undeleted in the subordinate clause, but its main-clause partner is represented by a determiner or by the anaphoric element *riŋhi* (advanced to initial position in the main clause, as in Walbiri):

- (49) *alu-yi-l-ar atiy aŋi-nh, riŋh atj alpiriyini-nk.*
(father-my-erg-COMP tree chop-past, it I:erg carry-pres)
'The tree that my father chopped down, I am carrying it.'

Although my data are not absolutely clear on the matter, sentences like (50) below suggest that case agreement is not contingent upon deletion of a noun phrase from the relative clause, as it is in the case of the Walbiri infinitive, since the preposed relative clause—from which no noun phrase has been deleted—shows case agreement:

- (50) *atuy anh-ar aNti-yani-l, anhi-l-at atji-ŋ wi-nhir.*
(man that-COMP stand-prog-erg, that-erg-emph me-obj shoot-past)
'That man who is standing (there), that one shot me.'

Perhaps the most interesting possibility suggested by the data from Kaititj relates to the phenomenon of attraction. Although this must be regarded as a matter in need of exacting research, the preliminary indications are that Kaititj allows a finite relative clause to attract into the main clause and, as a unit, to replace the main-clause noun phrase with which it is construed. Consider, for example, the following sentence:

- (51) *agir-ar ampwari-nhi-wal ŋ api-n.*
(kangaroo-COMP die-past-dir you:nom go-imperative)
'Go up to the kangaroo that died.'

There are several things about (51) which are worthy of note. Firstly, unlike other complex sentences cited for Kaititj, (51) contains no intonational break, suggesting that the subordinate clause is integrated into the main clause. This integration is further evidenced by the position of the main-clause subject pronoun *ŋ* 'you-nom'—a singular subject pronoun often

becomes reduced in stress (and it is reduced in (51)); when they do, they behave as clitics and move to second position within their clause (not unlike the Kaititj complementiser *-ar* and the Walbiri auxiliary), forming a prosodic unit with the first constituent of the clause. These singular pronouns normally undergo this process of cliticisation, and sentence (51) is evidently an instance. The pronouns typically remain initial within their clause only when augmented in some way, whether by emphatic stress or by the relative complementiser *-ar* (cf. (48a, b, c) above). Secondly, the position of the complementiser *-ar* in (51) indicates that the noun phrase *ŋagir* 'kangaroo' is a surface constituent of the subordinate clause, not the main clause—the main-clause coreferent is entirely absent from (51). And finally, the case category associated with the noun phrase *ŋagir*, that is, absolutive (or nominative), also indicates that that noun phrase is a constituent of the subordinate clause—its absolutive marking follows from the fact that it is the subject of the subordinate verb, which is intransitive.

The following are additional examples of this apparent attraction of a relative clause into the position of the coreferential main-clause noun phrase:

- (52) (a) *atuy-ar aNti-yani-wal ayiŋ api-nk.*
(man-COMP stand-prog-dir I:nom go-pres)
'I am going up to the man who is standing (there).'
- (b) *atuy-ar aŋki-rani-thiy ayiŋ api-nk.*
(man-COMP speak-prog-elative I:nom go-pres)
'I am walking away from the man who is speaking.'

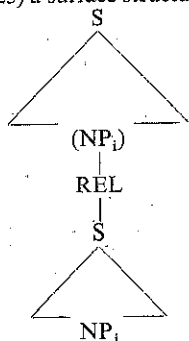
In (51) and (52), the coreferential noun phrase in the subordinate clause is the subject, and therefore initial in its clause. If the coreferential noun phrase is not the subject, it is apparently fronted, leaving the somewhat unusual surface ordering in which the complementiser *-ar* appears to attach to the second constituent of the subordinate clause. It is quite possible that this apparent fronting is in fact raising, and that it brings the subordinate noun phrase out of its own clause—in which case the positioning of the complementiser would not be exceptional. The case marking in (53), however, clearly indicates the grammatical relation of the fronted noun phrase within the subordinate clause (that is, dative as opposed to the elative appropriate to its main-clause partner (see (48e))):

- (53) *atuyi-w (,) ŋ-ar uNthu-yayni-thiy ayiŋ api-nhi-ŋin.*
(man-dat (,) you:nom-COMP seek-past:imperf-elative I:nom walk-past-hither)
'I have come from the man whom you were seeking.'

(This example was recorded with a tentative pause, or an audible decrease in tempo, following the fronted noun phrase.) Other examples of this fronting, or raising, follow:

- (54) (a) *kayl ŋi-ar irki-nhi-w ayiŋ itirari-ran.*
(boomerang you:erg-COMP trim-past-dat I:nom crave-prog)
'I want the boomerang you trimmed.'
- (b) *kayl ŋi-ar irki-nhi-l atj aNhiluyk wi-with.*
(boomerang you:erg-COMP trim-past-inst I:erg emu hit-desiderative)
'I want to hit an emu with the boomerang you trimmed.'

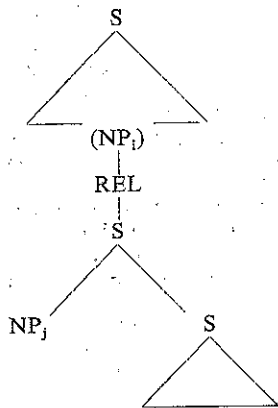
It seems natural to suggest that sentences like (51-2) are derived by means of a transformational rule, following case agreement, which attracts a right-adjoined relative clause into the main clause. Moreover, since the main-clause coreference partner does not actually appear in (51-2), it is possible that it is replaced by the relative clause. One might speculate along these lines, that Kaititj, like Walbiri, has underlying structures of the adjoined type represented in (23). But, unlike Walbiri, Kaititj not only inflects its finite clause for case in agreement with the main-clause noun phrase NP_i, but it also has the option of attracting the relative clause into the main clause to replace NP_i, thereby deriving from (23) a surface structure of the form (55)



According to this hypothesis, Kaititj possesses an embedded relative clause—at the surface structure level of syntactic representation, but not at deep structure.

To account for sentences like (53-4) as well, one might speculate further that, if NP_j—the coreferent in the subordinate clause—is a nonsubject, and therefore noninitial in its clause, it is extracted to the right and, perhaps, Chomsky-adjoined to the subordinate S-node. This extraction, or raising, would convert (55) to:

(56)



The details of such a proposal must, of course, await further research. It is not clear, for example, whether the attraction rule actually involves replacement of NP_i, for there are apparent instances of attraction in which NP_i, with its case marking appropriate to its role in the main clause, remains undeleted while NP_j is deleted from the subordinate clause:

- (57) *atjiri-yi-l-ar atji-ŋ katji-mpwari-nhi-waŋ ayiŋ alpi-nk, anjtju-waŋ.*
 (brother-my-erg-COMP I-obj benefactive-make-past-dir I:nom return-pres, shelter-dir)
 'I am returning to (that which) my brother made for me, to the shelter.'

But the status of this sentence, and others like it, is not clear. It is possible that the main part of (57) is simply indeterminate with respect to nominal reference i.e., that the nominal is unspecified and, therefore, not overtly represented) and that the apparent main-clause noun phrase *[anjtju-waŋ]* 'shelter-dir' is, in fact, merely appended to the sentence as a whole, as an afterthought, to supply specification. This is not an unusual practice in Australian usage, and the intonational break preceding *[anjtju-waŋ]* is consistent with this alternative interpretation.

In considering the details of the attraction proposal, it may prove relevant to study parentheticals as well. Sentences like (58a-b) below show the relative clause inserted in the position immediately following NP_i (that is, the main clause coreferent):

- (58) (a) *atuy withi-l-at, atji-ŋ-ar alari-nhi-l, ŋki-ŋ ari-mikitj.*
 (man the-erg-emph, me-obj-COMP hit-past-erg, you-obj see-admonitive)
 'The man, who hit me, is liable to see you.'
 (b) *atuy, atji-ŋ-ar alari-nh, ŋki-ŋ uNihu-ran.*
 (man, me-obj-COMP hit-past, you-obj seek-prog)
 'The man, who hit me, is looking for you.'

But parentheticals, unlike attracted clauses of the type represented by (51-2), are set off intonationally by clearly perceptible pausing.

In this brief discussion of Kaititj, I have restricted my attention to clauses receiving the NP-relative interpretation, since these are the most clearly relevant to the issues surrounding the adjunction analysis. It is clear that Kaititj presents a direct challenge to this conception of relatives, since it possesses both the adjoined and the embedded relative clause in surface structure. I have suggested that the clauses are underlyingly adjoined and derivatively embedded. Obviously, of course, there exists the alternative possibility that they are underlyingly embedded and derivatively adjoined. And a third possibility, certainly worth attention, is that both types exist at deep structure. If the embedded relative is basic in Kaititj, then, to account for sentences of the type represented by (51-2), there must be some provision for eliminating the head noun phrase, since it does not appear in surface structure. But this is not unprecedented—for a discussion of the 'headless' relative clause in Navajo, an American Indian language, see Platero (1973); and, for an alternative account of the phenomenon, see Hale and Platero (1974).

3. Concluding remarks

Although I cannot at this point give definitive arguments in support of the basicness of the adjoined relative in the two languages used to exemplify it in this paper, I have presented the adjunction analysis as a possibility which, I feel, deserves serious consideration.

It is my opinion that, historically at least, the adjoined relative takes priority over the embedded relative in Australia. It has been reported in languages as distinct from Walbiri and Kaititj as Lardil of Mornington Island in the Gulf of Carpentaria (see, for example, Klokeid 1973), the Northern Paman language Linnithig of Cape York Peninsula (see Hale 1966), and Mabuig of Torres Strait (see Klokeid 1970); and I have found it also in Ngarluma of the northwest coast, Warramunga of central Australia, and in Gurindji of northern central Australia.

I am encouraged, further, to speculate that the development of the embedded type, exemplified here by Kaititj, is intimately related to the phenomenon of attraction. The attraction rule itself, in my opinion, has entered the grammars of certain Australian languages for a reason. That is to say, it is functionally motivated.

If it is true that the NP-relative interpretation is achieved by means of an interpretive rule which embeds the semantic reading of an adjoined relative clause into NP_i in the main clause, where this noun phrase has a coreferential partner NP_j in the subordinate clause, then, subsequent to the interpretation rule, there exists a syntactic/semantic disparity in subordination—the relative clause is syntactically adjoined but semantically embedded. The attraction rule, I propose, exists precisely to eliminate this disparity. (See Hale 1971, for further discussion of this proposal.) If the attraction-rule becomes obligatory at some stage in the historical development of a language, it does not seem unreasonable to imagine that a grammatical reanalysis takes place, giving rise to a deep-structure relative clause of the embedded type. I suspect that this is the genesis of the embedded relative clause in many languages of the world which indisputably possess it.

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Notes

1. There is some question as to whether a complement clause in *-ŋkani ~ -[ani]* is necessarily construed with a dative NP in the main clause, as is the case in (16). There is an alternative in which the dependent clause is not construed with a NP in the main clause at all. In this alternative, the subject of the dependent clause remains undeleted but is inflected with the dative ending *-ku*:

kuḍu ka tjaḍa-ŋuna-mi, kiḍa-njanu-ku kaḷi tjanṭi-ninṭja-lani.
(child AUX sleep-lie-nonpast, father-own dat boomerang trim-
infinitive-COMP)

That the NP *[kiḍa-njanu-ku]* (father-own dat) is a constituent of the subordinate clause, rather than of the main clause, is evident not only from the intonational properties of this sentence but also from the fact that the dative NP in question fails to cause dative agreement in the main-clause auxiliary—compare (16), in which the main-clause auxiliary *[ka-la]* contains the third person singular dative pronominal element *[-la]*, in agreement with *[kiḍa-njanu-ku]*.

2. Apparently, case-agreement applies only when the subordinate clause shows verb-final word order. In an alternative rendering of (48c)—in which the subject, not the verb, is in final position—the subordinate clause does not show case agreement:

(48c) *agiri-w ayiṅ uNthu-ran, ayNi-nj-ar atj.*

(kangaroo-dat I:nom seek-prog, spear-past-COMP I:erg)

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