WPFG

working papers in functional grammar

WPFG no. 5
October 1985

Subordinate clauses in Australian aboriginal languages

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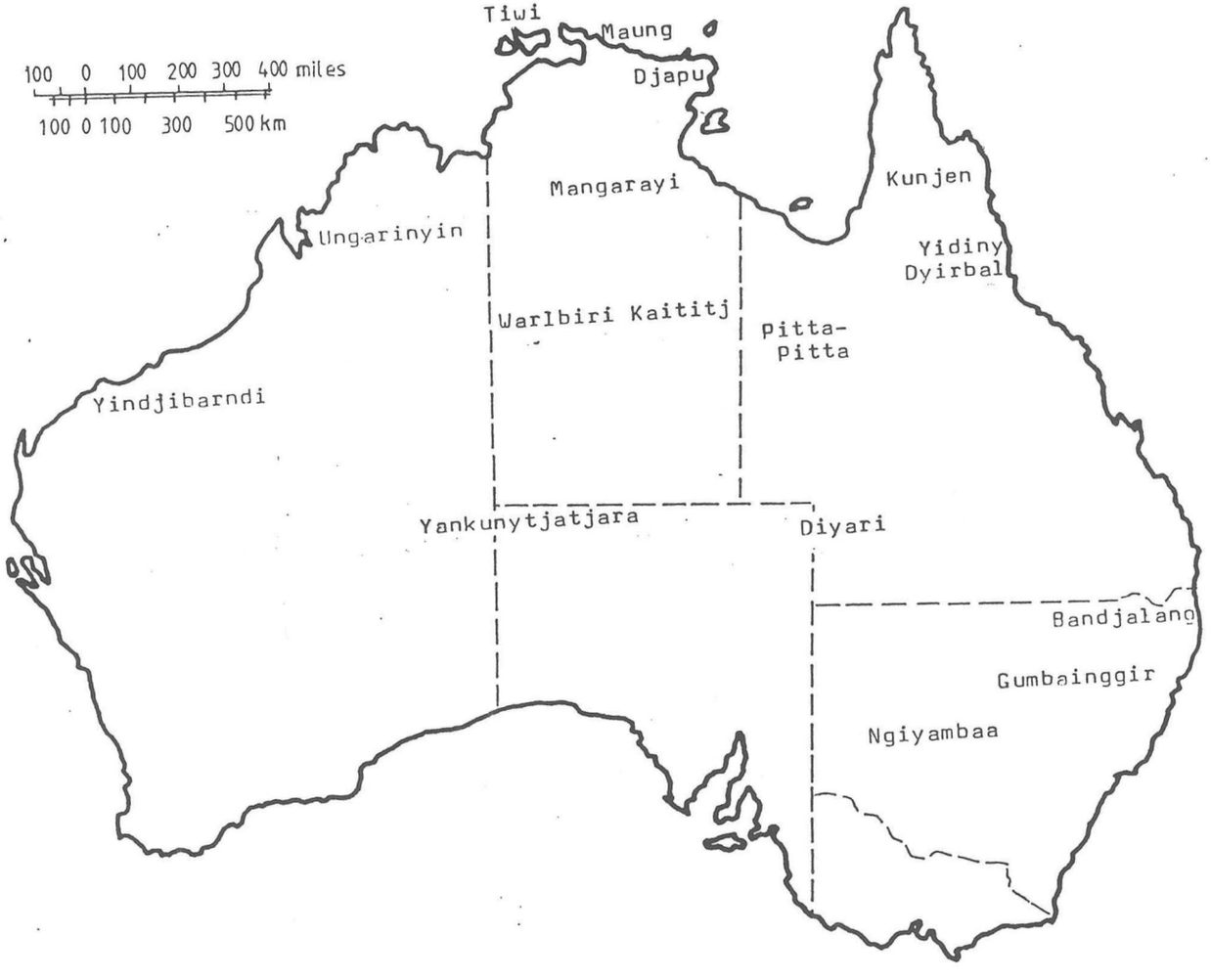
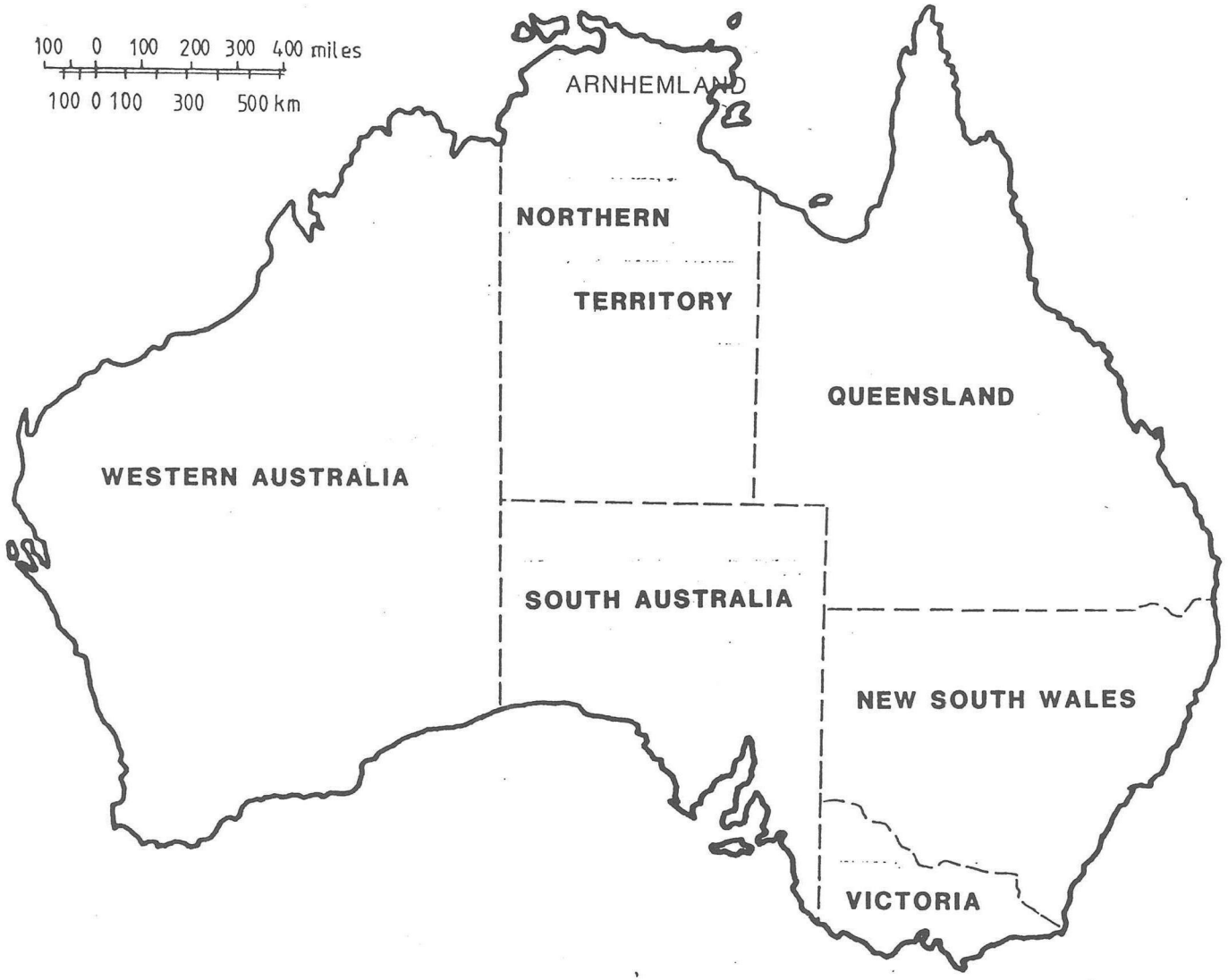
ABBREVIATIONS

A/Ag	agent
ABL	ablative
ABS	absolutive
ACC	accusative
AUX	auxiliary
AH	accessibility hierarchy
CAUS	causative
COMP	complementiser
CON	concomitant
DAT	dative
DEF	definite
DEM	demonstrative
DIR	directional
DS	different subject
DU	dualis
ERG	ergative
FG	functional grammar
GEN	genitive
Go	goal
INCHOAT	inchoative
IMPER	imperative
IMPL	implicated (clause type)
INFIN	infinitive
INST	instrumental
LOC	locative
MC	main clause
NOM	nominative
NPAST	non-past
O/Obj	object
PART	participle
PAST	past tense
Pl	plural
PRES	present tense
PROG	progressive
PURP	purposive
RC	relative clause
REDUP	reduplication
REFL	reflexive
REL	relativiser
SC	subordinate clause
SERIAL	serialisation (affix)
S/Subj	subject
Sg	singular
SS	same subject
SUBORD	subordinate
TG	transformational grammar

1,2 and 3 refer to personal pronouns.



Map 1. Approximate locations of languages referred to



Map 2. States and areas referred to in the text

0.1 INTRODUCTION

In Australian Aboriginal languages there has been a tradition of describing a wide range of subordinate constructions as 'adjoined relative clauses'. The term comes from a well known article by K. Hale with the title The Adjoined Relative Clause in Australia (Hale, 1976). Although this document contains a valuable analysis of a particular group of subordinate constructions, the label given to these clauses is somewhat confusing. 'Adjoined relative clause' is a convenient name, as it includes such a wide range of constructions. It was therefore taken over by a large number of linguists without much re-analysis of their own data. But as Goddard (in conversation) stated: "The term includes in fact a lot of constructions that are not relative clauses. And if it is not a relative clause, we shouldn't call it a relative clause."

That a number of Australian languages make use of real relative clauses is beyond doubt, as will be shown in this paper. On the other hand, there are languages that use a type of subordinate construction that is more appropriately described as a circumstantial clause. In the great majority of cases this circumstantial clause can have an RC interpretation. This is the main reason for including these constructions in the category of 'adjoined relative clauses'.

In this paper the 'adjoined relative clause' will be reanalysed. There is a need for a more subtle subcategorisation of this large collection of subordinate clauses. The reanalysis will be done along a number of parameters that were found to be recurring in the different language descriptions. By assigning the proper values to these parameters, it will become clear that Aboriginal languages offer examples of a continuum of subordinate constructions. The two extremes of this continuum are shown to be relative clauses and circumstantial clauses.

The 'adjoined relative clause' has traditionally been described in terms of Transformational Grammar. In this paper a different theoretical framework will be used, namely, Functional Grammar as developed by Dr. S. Dik. It is important to note, however, that my goal is to reanalyse linguistic data containing subordinate clauses rather than setting up a watertight theory of these constructions. In this respect I follow the Australian (or English) traditional approach rather than the Dutch.

0.2 THE DATA

For the purpose of this paper, data have been collected from 17 different languages. As shown on Map 1, most areas of Australia are represented (see note 1).

To put the sample of 17 in the proper context, I will quote Yallop (1982, page 29) on the number of languages in Australia in the past and in the present: "...by allowing for considerable

dialect variation within each language and by excluding alternative names for one language, we come to a figure of about 250. Of these, about 70 are still spoken by 50 or more people. Only 5 have more than 1000 speakers." Although 17 may be a small percentage of the total, we have to realise that data on subordinate constructions from most languages are not readily available.

In the study of language universals, a number of criteria are established to ensure that the sample of languages used in a particular study is of an acceptable variety. The sample should be varied in terms of (1) genetics, (2) geography and (3) typology (Comrie, 1981). A few words of justification for my own choice of languages may be appropriate.

(1) According to the classification given by Yallop (1982, page 45-47) 12 of our languages belong to different families or groups. Two are not listed as "principle languages, still spoken", namely, Ngiyambaa and Yidiny. Later in the text Yidinic is referred to as a separate family. The 3 remaining languages belong to the same family or group; they are Yankunytjatjara, Yindibarndi and Warlbiri. The latter 3 are, however, quite far apart in terms of geography and typology.

(2) It is clear from Map 1 that our sample is 'safe' with regard to the geographical spread. This criterion is important in distinguishing between genetic characterics and diffusion.

(3) The major typological classification in Australia is the distinction between suffixing (Pama-Nyungan) and prefixing (non-Pama-Nyungan) languages. Four languages are non-Pama-Nyungan: Ungarinjin, Tiwi, Maung and Mangarayi. The others are Pama-Nyungan. Further, Djapu belongs to a group of languages in the north eastern corner of Arnhemland that are difficult to classify. They form a pocket of suffixing languages surrounded by prefixing families. For more detail on the typological spread I refer to Yallop (1982).

Finally, Yallop includes the following languages in a listing of the 25 major Australian languages: Tiwi, Western Desert (incl. Yankunytjatjara), Yindjibarndi, Warlbiri and Aranda (incl. Kaititj). On the other hand, languages such as Gumbainggir, Ngiyambaa and Yidiny are extinct or nearly extinct.

0.3 SUMMARY

In chapter 1 some aboriginal examples of Relative Clauses will be compared to English examples, to come to a functional definition of a Relative Clause (RC). The definition comes from Comrie (1981) and has proved to be useful in typological research. Comparing Aboriginal languages to a typological standard with respect to RCs will make us realise that the Aboriginal case is not so straightforward. An example of this is the application of the Accessibility Hierarchy to Dyirbal, as discussed by Dik

(1980). However, there are more basic differences and for this reason an inventory of types is undertaken and set out in chapters 2 and 3.

Chapter 2 gives some examples from different languages of RC-like constructions and subsequently offers the range of subordinate constructions of one particular language, Diyari (Austin, 1981a). Switch-reference is discussed at the same time, as this is a widespread phenomenon in Australian subordinate constructions. Goddard (forthcoming) gives an interesting alternative view on switch-reference in his discussion of Yankunytjatjara.

In chapter 3 the inventory is examined in more detail along a number of parameters, such as the possible interpretations of a subordinate clause (SC), its place of occurrence in the main clause (MC), whether the SC is case-marked, whether it uses a finite or non-finite verbal form and its relation to the Accessibility Hierarchy. These parameters will be discussed individually first and then related to each other to show their interaction and correlations. Hale's article on adjoined relative clauses will be discussed throughout this chapter.

In the short chapter 4, the observations will be summarised. The analysis of the values of parameters indicates that there are two extremes with a range of constructions in between. Yankunytjatjara makes use of both these two extremes: circumstantial clauses and RCs.

In chapter 5 these two types of clauses will be described within the theory of Functional Grammar (FG), as satellites of Circumstance and RCs. It will be shown how both are produced in FG which will determine their different status. The difference in place of occurrence will be explained along FG constituent ordering principles. Finally, all the constructions that fall in between satellites of Circumstance and RCs are analysed according to the parameters and related to the different components of FG.

In chapter 6 two alternative historical developments will be proposed, and the literature of the relation between possessive phrases and RCs will be discussed. Dixon (1969) puts this relationship in a TG model. Eades (1976) proves him wrong and suggests to follow Silverstein (1976). Finally a functional approach will be examined and suggestions will be given to analyse the diachronic development of RCs.

1.0 TYPOLOGY

In this section we will discuss the notion of 'relative clause' (RC) in a context wider than the Australian The name 'relative clause' has been given to a variety of subordinate constructions and we need therefore to have a working definition, to make sure that the notion of RC as employed in this paper is a clear one from the start.

RCs can differ considerably in syntactic properties in different languages. This can be illustrated clearly with an example that shows a subordinate clause in an Aboriginal language that may be translated with an RC in English. The example is from Kaititj (Hale, 1976):

(1) agir-w kangaroo-DAT aying I:NOM uNthu-ran, seek-PROG, artuyi-l-ar man-ERG-COMP wi-nhi-w shoot-PAST-DAT
'I am looking for the kangaroo that the man shot.'

(see note 2 for spelling conventions)
This is a straightforward example in that it is directly translatable into an English RC. Mostly, however, the SC in an Aboriginal language must appear sentence-finally and cannot be 'attracted' into the sentences as in English

(2) 'The man who shot the kangaroo was cooking the meat.'

Moreover there is often an alternative to an SC construction as in (1), namely one with an non-finite rather than a finite verb. In Warlbiri, for example, there is an infinitive or nominalised construction such as (Hale, 1976):

(3) Ngatju I ka-rna-rla AUX kurdu-ku child-DAT mari-tjara-mi grief-INCHOATIVE-NOM-PAST
wanti-njtja-wana-ku fall-INFIN-COMP-DAT
'I feel sorry for the child that fell.'

Although the Warlbiri example and its English translation are quite different syntactically, they fulfil the same semantic function, namely narrowing down the potential reference of the term kurdu 'child' to the one 'that fell'. So in both sentences the RC has a restrictive function.

Syntactically these constructions differ a lot between languages. We can conclude from these types of examples that a functional/semantic definition is to be preferred over a syntactic one (Comrie, 1981). This is especially so when speaking in terms of typology and language universals, which are supposed to cover not only English and Aboriginal languages but preferably all other languages as well. In addition, Comrie (1981) assumes that the restrictive RC is more central to the notion of RC than its non-restrictive counterpart, the latter being a clause that gives extra information on the term it qualifies rather than restricting its potential reference.

A clear example of the difference between restrictive and non-restrictive RCs (from Mallinson & Blake 1981) would be:

(4a) All teachers, who have been sacked, are to attend a protest meeting.
(4b) All teachers who have been sacked are to attend a protest meeting.

In (4a) all teachers are to attend the protest meeting and "who have been sacked" is a piece of extra information, whereas in (4b) only the teachers who have been sacked are to attend the meeting.

1.1 A DEFINITION

A definition of RCs, as follows from the previous discussion, could be that an RC is a restricting clause that narrows down the potential range of referents indicated by a particular term. This particular term is called the Head of the RC. This definition will be used as it has shown to be fruitful in the research in typology in a wide variety of languages.

Two points have to be made in relation to the definition. Firstly, the definition as given by Comrie (1981) also includes participial constructions such as "passengers leaving on flight 738 proceed to the departure lounge". This type of construction is comparable to certain participial constructions in a number of Aboriginal languages, as we will see in later sections. Note here that, although syntactically there is a difference with what is usually seen as an RC (namely a finite clause), semantically or functionally the participial construction plays the same role as as a restrictive RC, and can in fact be paraphrased by an RC. Furthermore even restrictive adjectives are compatible with the current definition, as in "the good students all passed their examination". The latter will not be discussed in this paper.

The second point to be made concerns the definition in relation to Aboriginal languages. One of the major ideas from Hale (1976) will be echoed in this paper, namely that most Aboriginal languages do not make use of subordinate constructions that would fit into the category of 'head and restricting clause'. There is, however, some evidence to support the hypothesis that certain subordinate constructions are developing into RC constructions falling under our definition.

From now on, the term 'RC' will be used to indicate the semantic notion as defined by Comrie. This implies that 'RC' refers to an interpretation of an SC rather than to a syntactic notion. In the majority of languages 'RC' represents only one of the possible interpretations of a certain SC construction. If it represents the only interpretation, the SC itself is also referred to as 'RC'.

1.2.1 ACCESSIBILITY HIERARCHY

Cross-linguistically there is evidence for a hierarchy of ease with which constituents can be relativised.

SUBJECT > DIRECT OBJECT > NON-DIRECT OBJECT > POSSESSOR

(Comrie 1981)

Subjects, therefore, are assumed to be most easily relativised. On the other hand, possessor constituents are least easily accessible to RC formation. I will give a few examples here, showing relativisation of subject, of direct object and of possessor respectively (an instance of relativised non-direct object was not available from the data).
From Bandjalang (Crowley, 1978):

(5) mali-yu baygal-u banga-na:(-yu) mala dya:dyam-i nya:ni
that-A man-A kick-REL (-A) that-O child-O see-PAST-DEF
mala dubay
that-O woman-O
'The man who kicked the child saw the woman.'

From Tiwi (Osborne, 1974):

(6) ngerepemani kukwaRi jiikeRemani
I-saw pit-O he-made
'I saw the pit he made.'
(In this example /e/ stands for schwa.)

From Pitta-Pitta (Blake, 1979):

(7) nhatyi-ka nga-thu walka-nha tyira-nha in-tu
see-PAST I-ERG kid-ACC boomerang-ACC you-ERG
thuka-la-ka-nha
take-CAUS-PAST-ACC
'I saw the kid whose boomerang you took.'

Furthermore if a particular language can relativise non-direct objects, it is supposed to relativise direct objects and subjects as well. Or in more general terms, if in a particular language a certain relativization strategy is applicable to a constituent of the accessibility hierarchy (AH), the strategy should be applicable to all constituents higher up in the AH. Every language has its own cut-off point on the AH. Every language can relativise constituents to a certain point on the AH and all constituents to its left but none to its right. This is a strong claim and has been the reason for some discussion about whether certain languages are counterexamples to the AH or whether the AH should be re-written as a weaker universal. In the next section one such example, from Australia, will be examined. In this case, however,there will be no need to change the strong version of the universal.

1.2.2. DYIRBAL AND THE AH: AN EXAMPLE

Dik (1980) discusses the case of Dyirbal as a possible counterexample to the theory of the AH. In Dyirbal only absolutive NPs can be freely relativised, but ergative NPs cannot. If the ergative is interpreted as Subject and the absolutive is interpreted as Object, Dyirbal is a counterexample (Comrie and Keenan, 1977). Translated into AH terminology we are here confronted with a language that relativises direct objects freely, but cannot relativise subjects. Comrie's claim that if a certain language relativises a certain constituent on the AH, it relativises all constituents to its left, would not be valid in the case of Dyirbal. However, there is evidence to suggest that in Dyirbal it is the absolutive case rather than the ergative that represents the subject. Comrie and Keenan (1977) already suggest that in Dyirbal the absolutive may be re-analysed as such. Consider the following theory on the development of ergative systems, as translated into FG terminology. We can safely conclude that Dyirbal is not a counterexample to the AH.

The theory assumes that ergative systems may develop out of nominative-accusative systems in the following way (Dik,1979). Compare:

(8a) John (NOM) hit the dog (ACC).
(8b) The dog (NOM) was hit by John (OBLIQUE).

In a nominative-accusative system (8a) would be the standard way of describing the action of 'John hitting the dog'. (8b), on the other hand, would be a more marked way of expressing the same meaning. In active-passive pairs the passive is often the more marked construction. Note also the indication of cases in the example.

It is assumed now that in many Aboriginal languages a 'markedness-shift' has occurred with the result that (8b) became the normal, less marked way of communicating the action of 'John hitting the dog'. Case-marking remains the same: the dog in nominative (or absolutive) and (by) John in what is called the ergative. This markedness-shift is of course only possible with transitive sentences, as intransitives have no passive counterpart.

If (8b) becomes the unmarked expression, (8a) will in fact become redundant and will finally disappear. There will be pressure to reinterpret constructions such as (8b) as active, as the opposition between active and passive has been lost.

In FG the markedness-shift and the reinterpretation of the passive as active can be explained in terms of subject and object assignment. A nominative-accusative system can be represented as follows:

(I)	Active (unmarked)		Passive (marked)
intr.	V(x1) AgSubj NOM		-
tr.	V(x1) AgSubj NOM	(x2) GoObj ACC	Vpass(x2) GoSubj (x1) Ag NOM OBLIQUE

(For a short outline of FG, see Appendix)
When the markedness-shift has taken place the active-transitive construction will no longer be used and disappears, whereas the passive becomes unmarked.

(II)	Active (marked)	Passive (unmarked)
intr.	V(x1) AgSubj NOM	-
tr.	-	Vpass(x2) GoSubj (x1) Ag NOM OBLIQUE

The next step, the reinterpretation of the passive as active, results in the following situation:

(III)	Active		Passive
intr.	V(x1) AgSubj NOM		-
tr.	V(x1) AgSubj OBLIQUE (=ERG)	(x2) GoObj NOM (=ABS)	-

An important detail in this process is that the agentive phrase (x1) Ag is reinterpreted as subject and (x2) Go as object. In (8b) then the dog would be reinterpreted as object and the agentive phrase by-John as subject.

We can now apply this theory to Dyirbal. According to Dik (1980) Dyirbal is a nominative-accusative language with an unmarked passive construction and no active-transitive counterpart anymore. The agentive phrase is not yet reinterpreted as subject. In FG Dyirbal can be represented as in (II).

Thus, the absolutive NPs in Dyirbal are still to be seen as subject. We can conclude then that Dyirbal is compatible with the AH.

2.0 THE INVENTORY OF TYPES

Relative clause constructions seem to vary considerably amongst the different languages and are a recent development, according to Dixon (1980). In the prefixing language Maung, for example, the article can be used as a relative pronoun (Capell & Hinch, 1970).

(9) dja arargbi dja gardimurnangani da walidj ginima
the man /the he-it-brings-back the food/ he-it-gets
dja rubiya
the money
'The man who brings back the food gets the money.'

This seems a straightforward instance of an RC. In most languages, however, the examples are less straightforward. We will use the more general term 'subordinate clause' (SC) until the reanalysis has cleared up the status of these constructions.

In Kunjen interrogative forms are used to mark SCs with finite verbs (Sommer, 1972). These forms have a clear semantic content in addition to their syntactic function. The interrogative form anen 'what?' functions as a relativizer and semantically indicates that the speaker is somehow responsible for the validity of the expression, either by having been an eyewitness or by attesting something universally accepted (for example a cultural myth).

(10) inh pigipig fence adhen anen ubma-r egng adhen edndelay
meat pig fence my REL break-down-PAST food my completely
idya-r
eat-PAST
'The pig that I attest broke down my fence, ate all my vegetables.'

Warlbiri SCs are introduced by a special complementizer kutja-

(11) ngatjulu-rlu rna yankiri pantu-rnu, kutja-lpa ngapa nga-rnu
I-ERG I emu spear-PAST COMP-AUX water drink-PAST
'I speared the emu which was drinking water.'
'I speared the emu while it was drinking water.'

These examples show three languages, unrelated in geographic and genetic terms, using the same type of construction. These examples are fairly typical for Aboriginal SCs, particularly the possibility of more than one interpretation, as in the Warlbiri example (11). In addition to finite SCs, a number of languages have either participial or infinitive constructions that fulfil the same function.

Before examining the parameters along which we can view the SCs in more detail, we will first discuss a syntactic feature referred to as 'switch-reference' that occurs in a large number of languages across the continent. Switch-reference will be

exemplified with the system of SCs in Diyari. This gives us an opportunity to first see the working of switch-reference and second to have a closer look at the inventory of SCs in one particular language.

Subsequently, an alternative view on switch-reference will be presented which will lead to the interesting conclusion that half the clauses using switch-reference can be interpreted as circumstantial clauses.

2.1 SWITCH-REFERENCE

Switch-reference is a system of marking the verb to indicate whether the subject or agent in the subordinate clause is the same as in the main clause, or different. The following example comes from Pitjantjatjara (from Yallop, 1982):

(12) tjiki-rra-rna nyangu palunya
drinking-I saw him
'I saw him (while I was) drinking.'

(13) nyangu-rna palunya tjiki-nyangka
saw-I him drinking
'I saw him (while he was) drinking.'

Thus -rra in (12) indicates that the subject is coreferential in the main and subordinate clause, whereas -nyangka in (13) indicates different subject. Switch-reference suffixes are always stuck to the subordinate verb.

One point here needs explanation. According to Austin (1981a) the category subject denotes the syntactic subject, which is the conflation of S and A, where S is the subject of an intransitive clause and A the subject of a transitive clause. This seems to be true for all languages that employ switch-reference, whether the language has an ergative system throughout or a split system (partly ergative, partly nominative-accusative).

All languages that have some form of switch-reference are spoken in a geographically continuous area, stretching from the west coast across to South Australia, the southern part of the Northern Territory and Western Queensland (see Map 2). Not all of these languages have switch-reference for the same subordinate clause types as Diyari. To the north and south of the area in which swith-reference occurs, it is only used in SCs that can be interpreted as RCs.

2.1.1 DIYARI

Switch-reference can be clearly exemplified by a language from north east South Australia, Diyari, as described in Austin (1981b). Diyari makesuse of suffixes for 'same subject' (SS) and 'different subject' (DS). It has different sets of such suffixes

for two different clause types:

(i) implicated clauses: the state of affairs expressed in the subordinate clause occurs after, or is implicated by, the state of affairs described in the main clause. This category includes purposive, consequential and temporal SCs. Out of context sentences can have either of these interpretations, as in:

(14) punthapuntha mindi-yi, pangka-nhi widi-lha
mouse-ABS run-PRES bed-LOC enter-IMPL(SS)

(lha IMPL(SS) indicates the implicated suffix for same subject)

Purposive:'The mouse runs to get into bed.'
Consequential:'The mouse runs and gets into bed.'
Temporal:'The mouse runs before getting into bed.'

(ii) relative clauses: this type of SC can have a number of different interpretations. It can specify the time-setting, the reason, a possibility or condition, or it can be interpreted as a restrictive or non-restrictive RC. Again ,out of context, these clauses can have more than one of these interpretations, such as in:

(15) thanali warla nganka-rna, thalara marda kuda-rna
they-ERG nest-ABS make-REL(SS) rain stone-ABS put-PART
ngari-yi warla-nhi
go-down-PRES nest-LOC

(rna REL(SS) indicates the suffix for same subject)

Time:'When/After they made the nest, they put the rain stone in it.'
'Having made the nest, they put the rain stone in it.'
Condition:'If they make the nest, they put the rain stone in it.'
RCs:'They, who make/made the nest,put the rain stone in it.'
'They put the rain stone in the nest(,) which they make/made.'

As can be seen in these examples, switch-reference is a relatively simple device to keep track of the relationships between the nominal constituents in the different clauses. Note that the coreferential term is mostly only expressed once, and occurs in the first clause in the sentence whether main or subordinate.

Even in cases of multiple subordination, including combinations of both types of subordinate clauses, switch-reference makes it unambiguously clear who the agent or subject is.

2.1.2 VERB-SERIALISATION IN YANKUNYTJATJARA

Goddard (forthcoming) has put forward an alternative view in respect to switch-reference in Yankunytjatjara. He describes SS (same subject) switch-reference as verb-serialisation, whereas DS (different subject) constructions are re-analysed as

circumstantial clauses. The latter will be discussed later in Section 3.2.

Verb-serialisation is defined as "constructions in which verbs sharing a common argument are merely juxtaposed with no intervening complementisers or conjunctions" (Foley and Van Valin (1984) in Goddard). Goddard distinguishes 'loose serialisation' and 'tight serialisation'. Tight serialisation involves not more than two verbs that belong to a single intonation group. The verbs cannot be separated with a pause or any intervening material. The serial form always precedes the finite form.

(16) ngayulu Maudie-ku ngura-ngka yanku-la ngari-ngu
I-ERG Maudie-GEN camp-LOC go-SERIAL lie-PAST
'I went and stayed at Maudie's place.'

Tight serialisations are treated syntactically as simple verbs, for example, in nominalisations for the purpose of SC formation. In semantic terms they indicate a compound action.. Another example of this is nyakula wantima 'see and leave alone = ignore'.

Loose serialisation may involve any number of verbs. They are commonly set off from one another by pause and intonation. Furthermore, each verb may have its own arguments as well as arguments in common with the other verb. The subject is always a common argument. The serial form may precede or follow the main verb, as in respectively

(17) munu-li Mimili-la ngari-ra, mungawinki maa-yana-nyi,
and-1DU-NOM Mimili-LOC lie-SERIAL morning away-go-PRES
Intalka-ku-lta
Indulkana-PURP-and then
'And having slept at Mimili, in the morning we'll go off to Indulkana.'

(18) papa pala mira-nyi, walytja purtu nyaku-la
dog-NOM just there cry out-PRES owner-ACC in vain see-SERIAL
'That dog is crying out, not being able to see (its) owner.'

According to Goddard these serial constructions are found extensively in the languages described by Austin in terms of switch-reference. The following instance of loose serialisation is from Dyari. It was treated by Austin as an example of an RC. It is clear, however, that this construction is not compatible with our definition of RC.

(19) kanku-kanku nhawu wapa-yi, ngapiri wanhthi-wanhthi-rna
REDUP-boy-ABS 3sgNFS go-PRES father-ABS REDUP-search-SERIAL
'The boy goes looking for (his) father.'

(IN 3sgNFS, NFS is the abbreviation for Non-Feminine Subject)
The serialisation marker -rna was labelled as a subordinate-same-subject suffix. This Diyari sentence does not easily translate

into an RC-construction. Note furthermore the similarity with example (16) from Yankunytjatjara.

I will come back to Goddard's article in a later section on circumstantial clauses.

Apart from switch-reference and verb-serialisation, I have given here the types of subordinate constructions, found in Diyari, which go beyond our notion of RC as defined by Comrie. As mentioned in section 1.1 the notion of RC represents, in the majority of languages, only one of the possible interpretations of a certain construction. As the whole construction is usually labelled 'relative clause', the term 'relative clause' has a slightly different meaning in every language description looked at for the purpose of this study.

In the next chapter we will analyse all the constructions that have been labelled as 'relative clauses' in terms of a number of parameters. This is essential in the process of coming to conclusions about which constructions are RCs, which are RC-like and which are something else.

3.0 PARAMETERS

Australian Aboriginal languages have a wide range of subordinate constructions of which a number are comparable to our notion of RCs, as defined in section 1.1. Comparisons can be made in more detail along the following parameters:

(i) possible interpretations of SCs

(ii) place in the MC - marginal or embedded

(iii) case-marking of SCs

(iv) use of finite and non-finite verbal forms

(v) cut-off point n the AH

This set of parameters followed from a comparative study of parameters used by the various linguists in the description of SCs in Aboriginal languages. Languages that have been investigated are listed in table 1 and set out against these parameters.

Initially the parameters will be discussed separately as if they act independently from one another. Later we will include the correlations between the different values of the parameters.

3.1 POSSIBLE INTERPRETATIONS

Diyari, as discussed in section 2.1.1, is certainly not an exception in having more than one possible interpretation for its subordinate constructions. Almost all languages investigated for this paper have at least one alternative to the RC interpretation. Diyari is in fact typical in that the SC can indicate the time-setting in which the state-of-affairs of the MC occurs. In addition a conditional interpretation is often possible. This implies that the actual meaning of such an SC in Aboriginal languages is a lot less strictly defined than SCs in English, for example. English, therefore, needs more than one translation for one particular utterance of such a subordinate clause in an Aboriginal language.

In table 1 I have mentioned RC, temporal and conditional as possible interpretations. These are the most widely occurring ones. In addition languages may include interpretations such as causal, circumstantial or contrast in their semantic range of one particular construction, i.e. one particular affix or complementiser. One of the Warlbiri infinitive (or nominalised) types has an RC interpretation with strong causal connections.

(20) ngatjɐ ka-rna-rla kurdu-ku mari-tjari-mi, wanti-njtja-
I AUX child-DAT grief-INCHOAT-NPAST fall-INFIN-
warnu-ku
COMP-DAT
'I am sorry for the child that fell.'

Also in Warlbiri we find instances of a type of circumstantial clause that does not necessarily need a constituent co-referential with an MC constituent. For example

(21) ngalipa ka-rlipa yutjuku-rla njina-mi, ngapa wanti-njtja-
we AUX shelter-LOC sit-NPAST rain fall-INFIN-
puru
COMP
'We (pl.incl.) (will) sit in the shelter while it rains.'

The SC indicates the circumstance under which "we sit", rather than a specific time setting, cause or whatever. In this example there is no constituent co-referential in MC and SC. However, in instances in which there are co-referential NPs, a similar interpretation is possible, as in

(22) ngatjulu-rlu rna yankiri pantu-rnu, kutja-lpa ngapa nga-rnu
I-ERG AUX-I emu spear-PAST COMP-AUX water drink-
PAST
'I speared the emu while it was drinking water.'

This example has been translated with <u>while</u> here, as this probably comes closest to a circumstantial interpretation. As seen in 2.0 the alternative was a translation <u>that</u>, an RC interpretation. Both are accepted as proper translations of this one construction. Pitta-Pitta offers us a comparable example:

(22) a. yalu-nha inpa tharupali-ka-maru, nga-thu wiri thawi-ka
speech-ACC you-NOM speak-PAST-CON I-ERG LIKE spill-PAST
'I almost spilled it with you talking.'

The English translation here is as 'vague' as the actual Pitta-Pitta utterance. The SC may indicate a time setting, ('when you were talking') or a causal connection ('because you were talking'), (an RC interpretation is unacceptable because of the lack of co-referential constituents). We have to realise that these interpretations are dependent on context. No utterance appears on its own (except in a linguistic context). Whatever the context, 'you were talking' is referring to the circumstance under which 'I almost spilled it'. Similarly, 'I speared the kangaroo' under the circumstance that 'it was drinking water'. In different contexts, or in other words under different circumstances, it may be interpreted as an RC, temporal or sometimes conditional. The problem with different interpretations is caused by the fact that we try to grasp the meaning in well sounding English translations. Let us not forget though that the different interpretations are required in the language into which these constructions are translated, in English, whereas in Warlbiri and Pitta-Pitta it is still only one

PARAMETERS- LANGUAGES	interpretations NP-Rel.		T-Rel.		Condi-tional	place in MC marg.	embed.	case-marking	finite (see note 3)	non-finite	cut-off point in AH
Bandjalang	+		+		+	+	+	+ opt.	+(?)	+(?)	Dir.Obj.
Diyari	+	^	+	^	+	+	−	−	+	−	Not relevant
Dyapu	+	^	+	^	+	+	−	−	+	+	Indir.Obj.
Dyirbal	+		(+)		−	+	+	+	−	+	Subj.
Gumbainggir	+	^	+	^	+	+	+(?)	N:+/S:−	+	+	(Dir.Obj.)
Kaititj	+		?		?	(+)	+	(+)	+	?	?
Kunjen	+		+		+	+	+	−	+	+	Indir.Obj.(?)
Mangarayi	+		+		?	+	−	−	+	−	Subj.(?)
Maung	+	^	+	^	+	+	−	−	+	−(?)	Subj.(?)
Ngiyambaa	+	^	+	^	+	+	−	−	+	+	Indir.Obj.(?)
Yankunytjatjara	+		−(?)		−(?)	−(?)	+	+	+	+	?
Pitta-Pitta	+	^	+		+	+	?	+	+	−(?)	Poss.
Tiwi	+		+		+	+	−	−	+	?	?
Ungarinjin	+		+		+	+	−	−	+	?	? not relevant
Warlbiri	+	^	+	^	(+)	+	−	−	+	+	? not relevant
Yidiny	+	^	(+)	^	(+)	+	−	?	−	+	Subj.
Yindjibarndi	+	^	+		+	+	?	+	+	+	Subj.

TABLE 1. 17 languages and their SC behaviour according to a number of parameters.

^ = the same expression for both interpretations
( )= not so frequently used or under certain conditions

expression of a particular SC. This is an important reason why we should try and find one suitable English equivalent for these constructions rather than a range of possible equivalents from which we have to choose. This one equivalent can be a more or less proper translation or a linguistic notion such as 'circumstantial clause'. In some cases a not so proper English translation which is, however, a good equivalent may even be preferred. If the translation is not perfectly correct English but represents the proper equivalent, it becomes clear that there is a difference in the construction between the two languages. My feeling is that in such a situation we get closer to linguistic reality staying close to the construction to be translated. In the end our goal is to find the real meaning of the original construction and not so much to find a perfect English translation. Hale (1976) makes suggestions to look in this direction.

In his well-known article of 1976, Hale studies Australian SCs, and labels the types we have investigated as 'adjoined relative clauses'. The main reasons for the term 'adjoined', as already mentioned, are the marginal place the SCs seem to take with respect to the MC, as well as their loose syntactic and semantic connections with an MC nominal constituent. Hale analyses these constructions in terms of two major notions: NP-relative and T-relative interpretation. We have been calling them respectively RC-interpretation (following the definition) and temporal interpretation. Apart from these two, interpretations such as conditional, causal, and so on are recognised and in fact, as Hale states: "It is abundantly clear, in any event, that the acceptibility of a relative clause does not depend upon its ability to receive a T-relative or NP-relative interpretation." In the following example neither interpretation is possible and it has to be translated with what Hale calls 'a contrastive parallel' to the state-of-affairs expressed in the MC. Note that the same complementiser kutja is used which often represents NP- or T-relatives.

(23) kutja-ka-lu yuwali nganti-rni tjurlpu panu-kari-rli kankarlu
COMP-AUX nest build-NPAST bird many-other-ERG up
watiya-rla, marna-ngka ka-njanu tjinjtjiwarnu-rlu nganti-rni
tree-LOC spinifex-LOC AUX-REFL jinjiwarnu-ERG build-NPAST
yutjuku-pardu
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.'

Example (23) shows us again that in this type of construction a co-referential NP is not a necessity. This implies that in the range of SCs using complementiser kutja we are getting further away from our notion of RC. Again the SC here actually describes a circumstance in which the state-of-affairs of the MC takes place. In English this instance is best reflected with a contrastive 'whereas'. Another example of an 'adjoined relative clause' that is fairly remote from our definition of RC is given

below. It is an instance of enabling condition:

(24) njampu kutja-ka-rna tjunma marda-rni ngatjulu-rlu, ngula
this COMP-AUX knife have-NPAST I-ERG so
kapi-rna-tju ngatjulu-rlu-lku patji-rna
AUX-REFL I-ERG-now/then cut-NPAST
'I have this knife, so I am going to cut myself.' or
'Now that I have this knife, I am going to cut myself.'

How wide the range of different interpretations is has not been investigated as yet.

Hale warns us not to accept the distinction between NP- and T-relative as 'a discrete and clear-cut one'. He is in fact very sceptical about the approach and expects this two-way distinction to be too simple, as can be seen in the last two examples.

Most linguists have followed the example set by Hale: they make use of the notions of NP-relative and T-relative and then give us a warning that the distinction is in fact not sufficient to fully describe all SCs of this type. It is therefore often necessary to classify these SCs as circumstantial clauses instead of NP-and T-relatives.

To show the relativity of the English interpretations given to the examples in this paper, a quote from Hale (1976): "...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." The communicative value may involve notions such as 'relevance', 'informativeness' and the like. Hale, in fact, found in his data that the RC and temporal interpretations only account for part of the observed instances of SCs in Warlbiri.

This inventory of interpretations is probably not complete, as there seems to be quite a variety of constructions. The situation is in fact fairly complex. Every language uses its range of affixes and complementisers in different ways to encompass all SC functions. In fact, different constructions often share a particular affix or complementiser. This sharing is a language-specific characteristic. Hardly any language uses exactly the same sharing strategy. Table 1 shows the ways in which languages express RC, temporal and conditional interpretations and the overlap in strategies.

Languages such as Djapu and Diyari have one expression for a construction that can be interpreted in English as NP-relative, T-relative or conditional (this is indicated by ^ between the + marks). On the other hand, languages such as Bandjalang and Tiwi have separate expressions for these three translations. Warlbiri has the same expression for conditional only under certain conditions, whereas Pitta-Pitta has a separate suffix for conditionals, and so on. Thus every language has grouped our interpretations in its own particular way. It would be interesting if some regularity could be discovered in these

strategies. This topic however will only be covered to the extent that is relevant to this paper, to the description of our particular type of SC.

David Wilkins (in personal conversation) suggested that a certain hierarchy may be discovered in the use of these strategies, instead of assuming that all languages have these interpretations randomly organised. Statements of the following kind could then be developed: if a language has one strategy to express both RCs and conditionals, then this strategy includes temporal interpretations. It was outside the scope of this paper to study this phenomenon.

3.2 THE PLACE IN THE MAIN CLAUSE

A second aspect, in which Aboriginal SCs deviate from the usual typologically valid parameters for RCs, is the place of occurrence in the MC. In many languages across the continent they are only found in the margins of the MC, either preceding or following it. This is the main reason why Hale (1976) labels them 'adjoined relative clauses'. However, in a number of languages SCs can be found in the middle of the main clause next to the constituent they qualify. Instances from Kunjen and Maung have already been given in 2.0. The following example is from Dyirbal (Dixon 1972):

(25) bayi yari banggul yuringga bagal-ngangu banagangu
the man / kangaroos spear-ngai-REL/ is returning home
'The man who had speared kangaroos is returning home.'

An important question related to the matter of adjoinedness is whether the constituent plus RC ever form a syntactic unit for a particular syntactic rule. In other words to what extent is a constituent and its RC a bound unit ?

In Warlbiri, there is no evidence to assume that a constituent and its RC form a syntactic unit. Hale shows that complex terms consisting of a noun and an adjective are treated differently from a noun plus RC. In Warlpiri, the auxiliary often occurs in second position in the sentence (under certain conditions). The first position can be filled by a noun or noun plus adjective, but not by a noun plus RC, implying that the former makes up one constituent, whereas the second does not.

In contrast, in Dyirbal, for example, there is evidence to assume that a constituent and its RC form a syntactic unit. In his transformational approach Dixon found that the ngai-construction moves a complete NP including its RC. We will take this for granted, as it is not relevant here to go into the syntax of ngai-constructions. However, that RCs in Dyirbal are NP-relative in the overwhelming majority of cases and always carry the same case-marking as the constituent they qualify, are indications of a stronger syntactic bond than in Warlbiri.

Thus the place of occurrence of RCs or SCs seem to vary from strictly marginal to adjacent to the term they qualify, depending on the particular language as well as the particular construction.

In addition to this range of positions, a number of Aboriginal languages know the possibility of 'replacement'. The RC actually occurs in the position where we would expect a nominal constituent. The expected nominal constituent, however, is not expressed at all. The following example is from Kaititj (Hale, 1976):

(26) agir-ar ampwari-nhi-warl ng api-n
kangaroo-COMP die-PAST-DIR you-NOM go-IMPER
'Go up to the kangaroo that died.'
Lit.:'Go up to- the kangaroo died.'

Note that agir 'the kangaroo' is not marked for directional, but the directional suffix is stuck to the verb of the SC ampwari nbi 'died'. Agir is the subject of this clause. Furthermore there seems to be no intonational break.

I decided not to take these constructions into consideration to avoid unnecessary complexity. I suspect that they could be described as a special type of RC, but this would need further research.

3.3 CASE-MARKING OF SUBORDINATE CLAUSES

Case-marking in this context refers to the fact that the SC may be case-marked in the same way as the NP it qualifies. The case-marking occurs on the subordinate verb. In this case the SC can always have an RC interpretation.

We will discuss a few languages briefly to see how case-marking of SCs works. These languages represent all attested ways of case-marking encountered in my sample. Approximately 50% of the languages don't show case-marking of their SCs.

Kunjen is idiosyncratic in that not only its finite RCs are not case-marked, but the MC-constituent that is qualified by the RC is not case-marked either. In fact, the Head of the RC is never case-marked in Kunjen. Compare example (10) in 2.0 with the simplex sentence (Sommer, 1972):

(27) inh pigipig-iy egng endndelay idya-r
meat pig-A food completely eat-PAST
'The pig ate all the food.'

Here pigipig 'pig' is agent/subject and is marked as such, whereas in (10) pigipig has the same syntactic function but is not so marked.

In addition to these finite RCs, Kunjen makes use of participial

RCs. These are an alternative way of expressing the same information. However, whereas the finite RCs are never marked for case, the participial may be. Both the case-suffixes of the coreferential constituent of the MC and the one of the RC may appear on the participle, as in:

(28) ergel ay ingun agngaR, abm ay aRtaRti-n-0-ay-ay, ...
say-PAST I him white man, person I work-E-NPAST-for-to
'I said to the white man that I work for, ...'

Note again that the head of the RC is not case-marked at all. Instead two datives are marked on the participle. The first ay refers to the relativised NP in the RC and the second ay to the MC agngaR. The order of case-suffixes is less ambiguous in:

(29) ukel uwa-l ay lalang abm-al inh pigipig elgoR
bullets give-PAST I uncle person-A meat pig many
arin-am-iy-ay
kill-PAST-SUBJ-DAT
'I gave the bullets to (my) uncle who killed many pigs.'

Pitta-Pitta, as described by Blake (1979), has a similar way of case-marking its RCs. Both functions are marked on the subordinate verb, as in:

(30) rtipu-nha nga-thu nhatyi-ka rtarri-ka(-maru)-inya-nha
rock-ACC I-ERG see-PAST jump-PAST(-CON)-ABL-ACC
'I saw the rock he jumped from.'

This can be expressed with or without the concomitant suffix -maru. This suffix is widely used in subordinate constructions such as:

(31) panytyi-ya nganytya ngapu-na mana-na tima-ka-maru
ail-PRES I water-ACC bad-ACC drink-PAST-CON
'I am sick having drunk bad water.'

In Dyirbal the two RC-markers are identical in form to genitive markers. We will discuss this phenomenon later on, as it has important implications for the historical development of RCs.

In Yidiny over 90% of the examples of 'adjoined relative clauses' have an RC-interpretation. Furthermore, the coreferential constituents must be in the absolutive case in both MC and RC, in other words they must have S or O function. The absolutive case-suffix is zero. Therefore, if an RC can only qualify an absolutive constituent, the verb in the RC is not marked for case or, as you wish, zero-marked for absolutive. It is hard to decide whether it should be the former or the latter, because RCs do not occur with any other functions of constituents. Comparison is thus impossible.

3.4 USE OF FINITE AND NON-FINITE VERBAL FORMS

The next parameter listed in table 1 is 'finite/non-finite'. In some cases it is not clear whether a language makes use of finite or non-finite verbal forms in its SCs or whether both occur next to each other. This may be due to a lack of data supplied by a particular language description, as in Pitta-Pitta ('non-finite' is marked '-(?)').

Maung has finite SCs, but Capell & Hinch (1970) do not mention anything about non-finite clauses. As this language description gives the impression to be preliminary rather than being a comprehensive account of the Maung language, it would be speculative to conclude that non-finite SCs don't exist in Maung. This is the way question marks in table 1 should be understood.

The southern dialect of Gumbaynggir uses nominalised forms of the verb or co-ordinate constructions to avoid finite RCs (Eades, 1979). Many sentences from the northern dialect (from Smythe, 1950) that are translated with an RC, are simply conjoined in southern Gumbaynggir.

Northern:
(32) jura:l bjeinbangandiu ni:gadu guga:mgan bua:ng
food-O eat-PAST-ndi-A man-A emu-O kill-Past
'The man who had eaten the food killed an emu.'
(-ndi is the suffix for subordination.)

Southern:
(33) ni:gadu yura:l biyambang guga:mgan buwa:ng
man-A food-O eat-PAST emu-O kill-PAST
'The man who had eaten the food killed the emu.'
OR 'The man ate the food and killed the emu.'

Although a finite RC-construction may be approved of as grammatical by a native speaker, a nominalised version, if possible, is certainly preferred. Consider

(34) ngaridyu nya:wang ya:m gulu:ra bagu:liyaygam
3sg-A see-PAST DEM bones-O lie-PRES-gam-O
'He saw the bones lying.'
(_gam is the nominaliser.)

The finite RC-construction would have bagu-:lindi (or bagu:liyayandi - a free alternation) in lieu of the nominalised form. As said this construction is rather avoided. The lack of data makes it impossible to decide on the semantic range of these nominalised forms.

The distribution of finite and non-finite clauses does not come forward as being regular in the comparison of Australian languages. The non-finite group includes infinitive, participial and nominalised verbal forms. This distinction may be a matter of terminology. The choice appears to be an individual one. Hale (1976), for example, labels the non-finite constructions in

Warlbiri as 'infinitive' or 'nominalised', but does not give any further comments.

I have left the matter of what exactly determines the choice between finite and non-finite forms as a separate subject for further study, as it is not essential to the line of argumentation. However, it will become clear in 3.6 that the distinction can be related to the other parameters showing certain major trends.

3.5 THE CUT-OFF POINT IN THE ACCESSIBILITY HIERARCHY

The cut-off point is already discussed in the sections on typology, and is, as mentioned there, not relevant for all languages, as the 'adjoined RC' is not so strictly connected to a particular nominal constituent in the MC. Warlbiri is a language in which the subordinate clauses are relatively unlike RCs and for which a cut-off point cannot be properly determined.

For most other languages the cut-off point is quite difficult to determine, as linguists have not really incorporated this parameter in their descriptions. Sometimes it could be deduced from the given examples, but the function is then question marked in table 1. If the description doesn't contain an example of a particular relativised function, it is not necessarily lacking in the language.

3.6 THE INTERACTION OF PARAMETERS

In most languages the distinction finite/non-finite plays a major role in the construction of SCs. There is a clear correlation with other parameters such as the use of case-marking and the place of occurrence in the MC.

The analysis of Warlbiri finite and infinitive clauses lends itself to point out some major correlations with the values of other parameters.

Warlbiri uses complementisers in both its finite and infinitive clauses to indicate subordination, for example kutja in:

(35) ngatjulu-rlu kapi-rna wawiri pura-mi, kutja-npa pantu-rnu
I-ERG AUX kangaroo cook-NPAST, COMP-AUX spear-PAST
njuntulu-rlu
you-ERG
'I will cook the kangaroo you speared.'

Tense, mood and aspect in Warlbiri are expressed in a combination of an auxiliary and a tense marker on the verb. In addition to these finite SCs, Warlbiri has non-finite clauses as in:

(36) ngatja ka-rna-ngku mari-tjarri-mi njuntu-ku, murrumurru
I AUX-1-2sg/obj grief-INCHOATIVE-NPAST you-DAT sick
nguna-njitja-kura(-ku)
lie-INFIN-COMP(-DAT)
'I feel sorry for you while you are lying sick.'

The infinitive type uses different complementisers from the finite type. The use of a complementiser depends on the function of the coreferential MC constituent. Complementiser kura as in example (36) is used when this constituent is in the absolutive or dative case. As in example (36), case-marking of the infinitive form is mostly optional. The situation in Warlbiri is, in fact, quite complex. There is a range of complementisers that are in restricted use, depending on whether the verb is finite or infinitive, on the tense-marking of both MC and SC verbs, and for infinitives on the function of the coreferential constituent in the MC. I will, however, skip all these idiosyncratic phenomena and set out the global differences between finite and infinitive SCs that are not only applicable to Warlbiri.

non-finite	finite
1. Coreferential nominal constituent is only expressed once.	1. May be expressed in both MC and SC.
2. Case-marking of SC verb.	2. No case-marking.
3. Can occur integrated in the MC.	3. Always marginal to MC.
And the most important difference:	
4. Reduced status comparable to nominals.	4. Can occur as a full sentence, even with complementiser kutja; is then presentational

The reduced status of infinitives is the most important issue at stake. Infinitives are, in fact, comparable to nominals such as adjectives. According to Hale, this accounts for their possible occurrence within the MC. Consider the following example from Warlbiri:

(37) ngarka ka-rna karli-kira nja-nji tjarnrti-rninjtja-kura
man AUX-1 boomerang-COMP see-NPAST trim-INFIN-COMP
'I see the man trimming the boomerang.'

Note the occurrence of kura on each constituent of the infinitive clause (on karli 'boomerang' it has undergone a phonological adjustment to kira). The double marking only occurs in cases of disruption of the SC (here because of nja-nji). This multiple marking is similar to multiple case-marking which is typical for Warlbiri complex terms that occur spread over the utterance. This is also compatible with the fact that many complementisers are identical in form to case-suffixes.

In languages that make use of participial constructions rather than infinitives, the reduced status is also reflected in the range of tense, mood and aspect markers a participle can take. In

Kunjen, for example, a participle may be marked for past, non-past or habitual (or 'able to'), whereas finite verbs can be marked by eight different affixes. Participles always take a more limited range of inflections than their finite counterpart. This clearly points at a reduced syntactic status.

As can be seen in table 1, certain parameters seem to show the same combination of values for most languages. Particularly if 'embedded' is -, there seems to be no case-marking of the subordinate verb. Case-marking typically goes hand in hand with embedding. Both of these seem to coincide with 'non-finite' rather than with 'finite'. We will go into more detail in 5.3, when this interaction is put in the theoretical framework of FG.

Case-marking co-occurs with embedding as follows: if 'case-marking' then 'embedding', but not always the other way round. For example Kunjen shows embedding, but no case-marking of its finite SCs.

Up to here we have examined the syntactic properties of finite and non-finite SCs. In general, syntactic differences between comparable constructions usually reflect semantic differences. I expected to find that infinitive or participial clauses would receive RC-interpretations rather than temporal or conditional and so on, as they tend to have a stronger relationship with a nominal constituent, expressed in embedding and case-marking. There is, however, no substantial evidence for this expectation.

In Ngiyambaa, different types of non-finite clauses can indicate purposive, 'lest'-clauses and '-ing'-clauses (Donaldson,1980). The latter includes a range of interpretations such as temporal, conditional, causal and so on. Donaldson gives hardly any Ngiyambaa examples of non-finite clauses. He only provides us with the English translations. There is only one proper instance of an '-ing'-clause that, when out of context, may have different interpretations:

(38) ngadhu giyanhdha-nha ngindu gurunga-nha:ra
I-NOM fear-PRES you-NOM lay-ing
Lit.'I am frightened, you swimming.'

RC interpretations are taken care of by finite SCs. Thus Ngiyambaa is in contrast with my initial expectation.

Warlbiri also shows semantic differences between its finite and non-finite SCs. The infinitive may have a temporal or RC interpretation. The temporal infinitive differs semantically from its finite counterpart in that it indicates an 'on-going' or 'in-effect' at the time of the MC state-of-affairs.

(39) ngatju ka-rna-ngku mari-tjari-mi njuntu-ku, murumuru
I AUX grief-INCHOAT-NPAST you-DAT sick
nguna-njtja-kura(-ku)
lie-INFIN-COMP(-DAT)
'I feel sorry for you while you are lying sick.'

As noted above the other infinitive type (here with complementiser warnu), semantically an RC, often indicates a strong causal connection with the MC.

(40) ngatju ka-rna-rla kurdu-ku mari-tjari-mi, wanti-njtja-
I AUX child-DAT grief-INCHOAT-NPAST fall-INFIN-
warnu-ku
COMP-DAT
'I am sorry for the child that fell.'

Sommer states that participial clauses in Kunjen are an alternative to finite SCs. However, finite RCs make use of relativisers with a semantic load, as mentioned before. The relativisers imply that the speaker is somehow responsible for the validity of the utterence, for example by being an eyewitness. The participial clauses, lacking these relativisers, do not show this semantic effect.

Although we can expect some semantic differences between finite and non-finite constructions, it is impossible to draw any generally valid conclusions.

Although we may not know what the determining factors for the finite/non-finite distinction are , it is clear that there is some regularity in how the categories finite and non-finite behave in relation to other parameters.

We have seen that the reduced syntactic status of a non-finite verbal form brings along a wider use of case-marking as well as a greater possibility of occurrence within the MC, as opposed to the more frequent marginal position of its finite counterpart.

In the next chapter we will try to fit this variety of constructions into a suitable theoretical framework.

4.1 CIRCUMSTANTIAL CLAUSES AND RCS: DISCUSSION

In the previous sections only constructions that can have an RC-interpretation as defined in 1.1 were included. However, even if a particular subordinate construction can be interpreted as an RC, it should be clear from the discussion that these types of constructions are quite different from the usual RCs as described in the literature on typology and linguistic universals.

The fact that a lot of these constructions have more than one interpretation is the first indication that they may be described in different terms. This thesis ought not to appear as being written by another 'arm-chair linguist' telling the man-in-the-field how he or she should have interpreted these linguistic facts. However, having had some contact with linguists-in-the-field on these matters, it seems that some work has been done already to re-interpret these 'adjoined relative clauses' as circumstantial SCs. One of the attempts is by Goddard in his article on verb-serialisation in Yankunytjatjara (forthcoming) which will be discussed in the following section.

After having investigated a number of languages from all over the continent and after having read some attempts of different authors to classify the type of SC under scrutiny we are left with the following observations. There is a range of constructions to be found of which the two extremes are a circumstantial clause and an RC. Between these two extremes there is a continuum of constructions differing slightly from each other along the parameters mentioned in table 1. Examples of a circumstantial clause have been given in the previous two sections. Again, (1) a co-referential NP was not a necessity. This means that (2) the parameter 'cut-off point in the AH' is not relevant, because the cut-off point refers to which NPs can be relativised (subject > direct object > indirect object > possessor). If there is no co-referentiality of constituents in MC and SC, there is no relativising involved in the construction. And if there is no relativising involved, the parameter 'cut-off point in the AH' is irrelevant. Furthermore, (3) there will be no case-marking of the subordinate verb, or at least, because the subordinate verb does not directly relate to a nominal constituent in the MC, it cannot be case-marked as such. As will be clear from the Yankunytjatjara examples below, case-marking can be used in a different way. Subordinate verbs can be marked locative to indicate a circumstantial clause. This type of case-marking serves only this purpose and does not relate to any NP in the MC. (4) The place in the MC is marginal. For RCs, on the other hand, these parameters have the opposite values.

Yankunytjatjara is an interesting case as it shows both clear-cut types next to each other. It is the only language in my sample that shows this distinction so unambiguously.

4.2 YANKUNYTJATJARA: AN EXAMPLE

In his alternative approach to switch-reference, Goddard labels the different-subject (DS) constructions as circumstantial clauses. In Yankunytjatjara, these clauses contain a nominalised verbal form marked locative. The correlation between locative case and DS clause type seems to occur only in languages south of Warlbiri and Aranda.

(41) nganarna nyina-nyi, kungka-ngku tina
1pl-NOM sit-PRES woman-ERG lunch-ACC
kutja-ntja-la, pata-ra
put to fire-NOML-LOC wait-SERIAL
'We are sitting, while the woman prepares lunch, waiting.'

(42) wati-ngku marlu waka-rnu, kapi tjiki-ntja-la
man-ERG kangaroo-ACC spear-NPAST water-ACC drink-NOML-LOC
'The man speared the kangaroo while it was drinking water.'

These constructions cannot be interpreted as RCs. Yankunytjatjara has separate syntactic strategies to express RCs which normally make use of introductory determiners or demonstratives.

Although the indication of different subjects is not the only function of these constructions, it is still a striking characteristic that the subjects of MC and SC may not be co-referential. Thus Goddard's view is not that the locative marking indicates DS but that it indicates a circumstantial clause with the constraint of having a different subject from the MC. (43) therefore can only receive a DS interpretation:

(43) ngayulu patangara-ngu, waru-ku yanku-nytja-la
1sg-NOM fall-PAS firewood-PURP go-NOM-LOC
'I fell while (someone else) was going for firewood.'

Even if ngayulu 'I (1sg-NOM)' is introduced in the SC in (43), an SS interpretation cannot be enforced. In other words, if ngayulu 'I (1sg-NOM)' were included in the SC waru-ku yanku-nytja-la, the whole construction would turn ungrammatical. SS is expressed in a different way, as explained in section 2.1 on switch-reference.

Historically, it is easy to see why the DS constraint has evolved. Suppose this constraint did not exist. Then there would have been a choice between a locative and the serial construction when the subject is the same. However, only the circumstantial clause could be used to express a DS and would have been relatively more in use in DS situations than SS situations. This would have been the first step in the development to a constraint. Moreover, since the locative typically indicates background information, it is plausible that this construction would not be chosen to present actions of the subject /topic, but rather, one would choose the serial alternative.

Yankunytjatjara is an example of a language that has circumstantial clauses alongside RCs. They are clearly distinguishable because of the locative marking of the former Furthermore, the circumstantial clauses follow the usual pattern in the values they take in the parameters: co-referentiality is not 'a must', for case-marking and place in the MC is marginal. In the case of Yankunytjatjara the verb is non-finite.

The RC can be a nominalised clause or a finite clause, as can be seen in the following two examples:

(44) wati-ngku marlu panya kapi tjiki-ntja waka-rnu
man-ERG kangaroo-ACC ANAPH water-ACC drink-NOML-ACC spear-PAST
'The man speared the kangaroo drinking water.'

(45) wati-ngku marlu panya waka-rnu, panya kapi tjiki-ningi
man-ERG kangaroo-ACC ANAPH spear-PAST ANAPH water drink-PAST/IMPERF
'The man speared that kangaroo, the one drinking water.'

They make use of introductory determiners or demonstratives. Their function is to identify or further specify an NP in the MC. It is clear that in Yankunytjatjara they cannot be mixed up with circumstantial clauses such as (41).

5.0 DESCRIPTION IN TERMS OF FUNCTIONAL GRAMMAR

Initially we will work with some simplified data, as prepared in the previous section. We will focus our attention on clear instances of circumstantial clauses and RCs and for the moment take for granted that these two are only the extreme poles of a wide range of constructions. We will not worry as yet whether the proposed description covers the full range of intermediate constructions.

The distinction between circumstantial clauses and RCs is an important one in terms of the data. This is reflected in FG, in which they are handled in different ways.

5.1.1 SATELLITES OF CIRCUMSTANCE

In FG terminology a circumstantial clause is a SATELLITE OF CIRCUMSTANCE. Satellites are additional specifications of the nuclear predication. Whereas nuclear functions include Agent, Goal and Recipient, satellites express the Beneficiary, Reason, Manner, Purpose, Circumstance, and so on. They supply optional information on the nuclear state-of-affairs.

"I have listed the following typical functions for satellites:
(i) further specification of the nuclear state of affairs:
Manner, Quality, Instrument;
(ii) relations of the state of affairs to other participants:
Beneficiary, Comitative;
(iii) relations of the state of affairs to the temporal dimension:
Time, Duration, Frequency;
(iv) relations of the state of affairs to the spatial dimension:
Location, Source, Direction, Path;
(v) relations of the state of affairs to other states of affairs:
Circumstance, Cause, Reason, Purpose, Result."
(Dik (1978), pp49-50)

As this listing shows, Circumstance is a relation of the state-of-affairs to other state-of-affairs. Circumstance will therefore often be expressed in a clausal structure, like Cause, Reason, Purpose and Result. We have already come across instances of satellites of Cause, although the formal expression of a causal connection may be identical to the expression of Circumstance. Aboriginal languages, then, tend to have at least an expression for this type of satellite and for Purpose (Austin, 1981).

Let us now turn to the representation of circumstantial clauses in FG. The analysis can be demonstrated with an example from Warlbiri.

(46) ngaṯipa ka-rlipa yutjuku-rla njina-mi, ngapa wanti-njtja-puru
1plincl AUX shelter-LOC sit-NPAST rain fall-INFIN-COMP
'We (will) sit in the shelter while it rains.'

The verbal predicate njina 'sit' from the MC would be represented as a predicate-frame (in the lexicon) as follows:

(47) njina (x1:animate (x1))
V N PO

As an intransitive verb it occurs with one argument with the semantic function of an Positioner. The selection restriction on the Positioner is 'animate', as inanimates are not supposed to be able to sit, (this is my assumption as I don't know whether in Warlbiri njina can be used with inanimates as in for example 'The box sits on the table.').

This nuclear predicate-frame can be extended by a satellite of Location and a satellite of Circumstance, of which the latter is a predication construed of the predicate-frame:

(48) wanti (x1)
V PROC

another intransitive verb taking one argument which is semantically a Processed (not an Agent). This whole predicate will be introduced as a satellite of Circumstance to the previous predicate-frame, inserted in a satellite slot carrying the semantic function CIR (Circumstance). Also a satellite of Location can be added at this stage:

(49) N-P njina (x1:animate (x1)) (x2) (x3)
V PO LOC CIR

The argument slots can now be filled through the process of term insertion, which will result in the following predication:

(50) N-P njina (minxi:ngalipa (xi)) (xj:yutjuku (xj))
V N PO N LOC
(xk:{wanti (xp:ngapa (xp)) } (xk))
V N FO CIR

(min stands for 'plural inclusive')

After syntactic and pragmatic functions have been assigned to the different arguments, we end up with a fully specified predication ready to be matched onto an actual linguistic expression. This last step in the derivation is realised with the use of a set of language-specific expression rules. How a particular argument is to be expressed depends on its semantic , syntactic and pragmatic functions. If it is nominal it also depends on the term-operators, and when it is verbal on predicate operators, (these refer to tense, aspect, negation, etc). For example Warlbiri expression rules would include a rule which determines that (xj:yutjuku N (xj)) LOC is expressed as yutjukurla. Thus the result of the matching of the particular underlying predication onto a linguistic expression would be example (46).

An important aspect of the analysis of circumstantial clauses is their status in the linguistic expression. As in this instance of Warlbiri, circumstantial clauses are marked subordinate, but are not found embedded in the MC. This is often referred to as adsentential in contrast with RCs that are adnominal. Although both constructions are no doubt subordinate, we will have to differentiate between types of dependency. Goddard (following Foley and Van Valin, 1984) distinguishes 'co-subordination' (a dependent relation but without embedding), along with subordination (dependency with embedding) and co-ordination (no dependency and no embedding). Also dependency can occur on different levels of the clause: nuclear (predicate) level, core (predicate plus core arguments) and peripheral (core plus satellite arguments). All these aspects should be taken into account and reflected in the theory used for the description of subordinate constructions.

Satellite functions in FG show a definite dependency on the core or nuclear predication as a whole and not on a particular nominal constituent. Satellites express information relevant to the state-of-affairs as a whole. It is clear that the notion of satellite of Circumstance is perfectly suitable for the clause structures involved.

A complication in the description of satellites of Circumstance is the possibility of having a co-referential nominal constituent that is not necessarily expressed. This can be handled by anaphorical terms. Consider the following English example:

(51) Laughing, John left the room.

This would be represented as:

(52) leave (d1xi:John(xi)) (d1xj:room(xj))
V AG GO
(xk:[laugh (Axi)] (xk)) ,
V AG CIRC

in which A indicates Anaphoric. (51) is equivalent with

(53) John left the room in the circumstance that he (=John) was laughing.

In (51) the anaphoric element is not inserted and in (53) it is.

5.1.2 CONSTITUENT ORDER IN FG

We will pay some attention here to the place of occurrence of these satellites of Circumstance in the MC. In FG, constituent order is treated as a dynamic rather than a static phenomenon. The order of constituents in a language is dependent on a number of principles that are partly competitive. The three main principles can be stated as follows:

(i) The preference for having constituents with the same functions invariably in the same positon in the expression. For example, the preference of having the finite verb in sentence final position;

(ii) The preference for having special positions for certain specific categories and for Topic and Focus constituents. An example of a specific category would be question-words (wh-words) in English, which require inital position in the clause.

(iii) The 'Language Independent Preferred Order of Constituents' (LIPOC), i.e. the preference for having constituents ordered from left to right in order of increasing complexity.

As these three principles are to a degree incompatible with one another, almost every ~~occurring~~ ordering is the result of a trade-off between these three 'forces'. Under certain conditions one of these may be more prevalent than the other two, and in other circumstances the choice may be in favour of one of the other two principles. How the effect of the principles are weighed in different situations is a language – specific characteristic.

Applying this theory to Aboriginal languages is far from straight-forward. First and foremost, constituent order in Aboriginal languages has not been studied extensively, and for a clear reason. Ordering of constituents in large parts of Australia is very free. Although a preferred order may be discovered, there will always be a number of equally acceptable alternatives according to Dixon (1980). Yallop, however, suggested (~~in~~ personal conversation) that although the alternatives may be equally acceptable in many cases, it is hard to accept that constituent ordering is completely at random. Different orders may indicate subtle stylistic and/or pragmatic variations. Examples can be found in English as well. Compare

(54) a. 'They followed the man for hours.' and
b. 'For hours, they followed the man.'

The two sentences may even follow each other in a story to put extra stress on one of the constituents. This device is actually very frequently used in Aboriginal stories.

Furthermore, syntactic functions are not expressed in constituent order but in case-marking and cross-referencing in the verb. Therefore, constituent order is not necessary as a device to indicate syntactic and semantic functions. It is interesting to note that even words from one particular NP can be scattered through the sentence. For instance, an adjective is not necessarily found next the the noun it qualifies. All these characteristics of Aboriginal languages make it hard to apply any theory of word order in a straightforward way. FG principles are, however, quite flexible in the way they interact with each other and will be shown to have explanatory power even in the case of Aboriginal languages.

5.1.3 CONSTITUENT ORDER OF CIRCUMSTANTIAL CLAUSES

Returning now to circumstantial clauses, it is not surprising to find that these clauses occur sentence-finally in the majority of cases. Following LIPOC, subordinate clauses—being rather complex constituents—are expected to be placed at the end of the utterance. This principle may be a rather dominant force in the choice of constituent ordering in Aboriginal languages as compared to principle (i) and (ii). Principle (i) is hardly applicable to Aboriginal languages with their free word order. According to Dixon (1980) there is a tendency for interrogatives to occur in sentence-initial position, indicating that (ii) has at least some value. This does not in any way interfere with (iii).

LIPOC is also confirmed by the fact that free pronominal forms tend to come early in the sentence whatever their function may be. In the case of third person pronouns they are often of a less complex nature than the corresponding full nominal constituents.

However LIPOC is not a sufficient explanation for the marginal place of circumstantial clauses. As we have seen, these clauses may occur sentence-initially. We have quoted already one such an example from Warlbiri, here repeated for convenience:

(55) kutja-ka-lu yuwali nganti-rni tjurlpu panu-kari-rli kankarlu
COMP-AUX nest build-NPAST bird many-other-ERG up
watiya-rla, marna-ngka ka-njana tjinjtjiwarnu-rlu nganti-rni
tree-LOC spinifex-LOC AUXREFL jinjiwarnu-ERG build-NPAST
yutjuku-pardu
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.'

From a pragmatic point of view, there seems to be no reason to favour either sentence-initial or sentence-final circumstantial clauses, as may be the case with other types of SCs. If we want to express that an Action that had been undertaken had a certain Result, the logical sequence to put these two states-of-affairs in would be Action-Result rather than the other way round. To state a Result before expressing the Action, State, Process or Position that leads to this result would be harder to process and would need extra time and effort on the part of the Addressee to understand. So, as a Result occurs later in time than the MC Action, and because of the logical connection between the two, we can expect the Result clause to occur sentence-finally. A similar train of thought is applicable to purposive clauses. Statistically, final purposive clauses predominate, especially when they are long and complex. However, they are more flexible, at least in English, as can be shown with a few examples:

(56) a. Phil took a holiday in order to recover completely.
b. In order to recover completely, Phil took a holiday.

(57) a. Phil took a holiday with the result that he recovered completely.
b.*With the result that he recovered completely, Phil took a holiday.

Although (56) b. is a slightly marked stylistic variant of (56) a., it is a perfectly acceptable alternative. In (57), on the other hand, b. would be unacceptable.

Let us now consider the case of circumstantial clauses. There is, I feel, no such straight forward logical connection between an MC state-of-affairs and a particular circumstance, as to decide on the order of occurence. Speakers may have a preference for either ordering, or a language may have certain syntactic constraints on the ordering. However, a priori I cannot see any logical or pragmatic contraint on either ordering except for principle (iii) expressed in LIPOC.

The question remains how to account for the sentence-initial variant within the framework of FG. Dik makes use of a general schema for functional patterns that shows the positions for the different constituents:

(58) P2, P1 (V) S (V) O (V), P3

The Vs indicate the different positions for verbs (both finite and non-finite), S and O subject and object, and P1, P2 and P3 are special positions. P2 is the typical slot for Theme constituents and P3 for Tail. The most interesting position for our purpose is the initial position P1. Whereas P2 falls in fact outside the clause itself, P1 is part of the clause and takes specific categories of constituents or otherwise Topic or Focus constituents (as stated before in LIPOC (iii)). Both an MC and and an SC have a P1 position. P1 in English must take interrogative words and in SCs it must take relative pronouns and subordinators. Furthermore we can expect to frequently find the subject in this position, as subject is often Topic or Focus of the clause.

The crucial question now is whether P1 can take whole SCs so that we can explain the initial position of circumstantial clauses as placing them in P1 position. Dik (1979) says that constituents of any complexity may occur in P1 and that there is no constraint to prevent SCs from doing so. Moreover he states the following:

"Since SUB (=SC) has almost the last position in LIPOC (only followed by complex subordinate clauses SUB(SUB)), we may expect that there is a strong pressure for them to tend towards the final position in the clause, unless they go to P1." (Dik 197°, page 204).

In general, for SCs in various adverbial functions the P1

position is available, as well as for clausal subjects and clausal objects. The expression will, however, be less marked with a clausal subject in P1 than with, for example, a circumstantial clause in this position. Again we are in a trade-off situation between a LIPOC constraint that tends to push more complex constituents to the end of the sentence and the possibility of filling P1 with a complex constituent. Although P1 is less sensitive to LIPOC than other positions in the construction, P1 is, according to Dik, for adverbial clauses the more marked choice. This is compatible with the facts of Australian languages where the sentence-final position seems to be far more frequent than sentence-initial.

There is, however, still a set of examples from Warlbiri that worries me. Warlbiri can have sentence-initial SCs but actually prefers an alternative that has to be explained in a different way. Hale gives the following examples:

(59)a. yankiri-rli kutja-lpa ngapa nga-rnu, ngatjulu-rlu rna
emu-ERG COMP-AUX water drink-PAST I-ERG AUX
pantu-rnu
spear-PAST
'The emu which was drinking water, I speared it.'
'While the emu was drinking water, I speared it.'

(59)b. yankiri-rli kutja-lpa ngapa nga-rnu, ngula rna pantu-rnu
ngatjulu-rlu
'The emu which was drinking water, that one I speared.'
'While the emu was drinking water, then I speared it.'

The second example is the somewhat preferred alternative. Note that it includes a clause-initial anaphoric element ngula and that ngatjulu-rlu 'I-ERG' has been moved to a clause-final position. In the light of the previous discussion, it seems that the SC in (59) a. occurs in the P1 position of the MC, but that in (59) b. this position has been taken by ngula. Hale explains these examples in terms of a 'left-dislocation rule' that has been incorporated in Warlbiri grammar to account for the 'left-dislocation' of NPs, as in

(60) ngapiri yangka, ngula ka kari-mi wulpayi-rla
eucalyptus the it AUX stand-NPAST creek-LOC
'The river red gum, it grows in creeks.'

Such an NP 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 purpose of Aux-Insertion" (Hale 1976, page 97). (Auxiliaries occur usually after the first constituent in the clause, and 'left-dislocated' NPs or clauses are not counted in this process). In his analysis, however, Hale does not indicate how to account for the difference between (59) a. and (59) b. except for saying that ngula is a trace left behind after left-dislocation.

In FG left-dislocation is not accepted as a valid process. In

fact, FG does not accept any structure changing rules. The examples are two alternative ways of expressing the same meaning but differ in pragmatic terms. In (59) a. the SC takes the P1 position in the MC which is, as we have seen, a legitimate possibility. (59) b. ngula has filled the P1 position in the MC and the SC appears in P2 position which contains Theme-like constituents. In this situation the SC informs the Addressee on "the universe of discourse with respect to which the subsequent predication is presented as relevant" (Dik 1979, page 19). In other words the SC functions here as a kind of introduction to what will be communicated subsequently. How widespread this type of construction is is not known to me.

Thus we get the following three possibilities:

(i) SC , PRO MC
Theme Topic
P2 p1

(ii) SC MC
P1

(iii) MC SC
final position due to LIPOC

Although constituent ordering in Aboriginal languages is quite unstable, my impression is that FG principles have some explanatory force in the description of the positions of SCs in the sentence. Let us compare our analysis with Hale's transformational approach. Hale tries to account for sentence-initial SCs by means of 'left-dislocation'. As I have demonstrated, he does not clear up the difference between the construction with and the one without an anaphoric element. This may be hard to do in a transformational approach, as we would need two similar rules of 'left-dislocation', one that leaves a trace such as a anaphoric element and one that doesn't leave a trace. I suspect that two such rules cannot be confirmed by independent evidence.

Furthermore, Hale's main concern in his article seems to be the decision whether SCs are adjoined or embedded in the Deep Structure. When they are adjoined, we need an attraction rule to account for the embedded clauses, and when they are embedded we need an extraction rule for the adjoined cases. However, by distinguishing RCs from circumstantial clauses, this matter has become a lot less pressing. Circumstantial clauses always occur marginally to the MC, whereas RCs can always occur embedded. The whole range of constructions that lie in between these two clear cut categories fall in one of these two, depending on the characteristics of the SC of the language in question. Thus, whether a construction with a sentence-initial SC is derived from a sentence-final construction is not a relevant question (at least not in a synchronic perspective). In most languages where no anaphoric element occurs in the MC, the transformationalist's decision whether an SC is basically embedded or adjoined will

have to be quite arbitrary. Fortunately in FG such a decision does not have to be made. The two constructions are of equal status in terms of their grammar. They exist as alternatives to achieve certain communicative goals. The speaker may decide to place a circumstantial clause in P1 position to stress the importance of the SC state-of-affairs, and so on.

This will end the discussion of the ordering of circumstantial clauses in complex constructions. In the next section we will consider RCs within the framework of FG.

5.2 RELATIVE CLAUSES IN FG

To parallel the description of satellites of Circumstance, I will demonstrate in short how RCs can be derived in FG. RCs fullfil a different function from satellites of Circumstance. Satellites qualify the state-of-affairs of the MC. The information expressed in a satellite is relevant for the understanding of the MC as a whole. It puts the MC state-of-affairs in a certain light. As we have seen this may be a time setting, location, reason, circumstance, and so on.

RCs, on the other hand, give us more specific information on a particular entity or a set of entities. These entities exist in some world whether it is in the material world, in a metaphysical world or in a fantasy world, etc. These entities are referred to by terms in the linguistic expression. Terms can be basic, such as 'John', 'he', and terms can be complex, such as 'the man who rides a motorbike', 'the woman with the cat on her shoulder', 'the reason why Bob doesn't like strawberries'.

The first example of a complex term is a Head and an RC. Man is the Head of the term and who rides a motorbike is the Modifier of the Head, or RC. _an refers to an entity in the real world, or actually to a set of entities namely every person with the property 'man'. The Modifier restricts this set of entities to the one that 'rides a motorbike'. This Modifier is thus a restricting clause and this type of complex term is exactly the RC as defined in section 1.1 of this paper.

In FG a restricting clause is called a restrictor. In fact, any Modifier that restricts the potential referents of the Head is a restrictor, whether this Modifier is an adjective, an adpositional phrase, a participial clause or a finite RC.

This analysis resulted in a general schema for termformation. Restriction is expressed by way of a colon which can be read as 'such that'.

(61) (Wxi: φ1(xi): φ2(xi):.....: φn(xi))

An example from Kaititj may further clarify the formal, underlying expression of terms. Consider the following sentence:

(62) artuy, atji-ng-ar alari-nh, ngki-ng uNthu-ran
man 1sg-ACC-COMP hit-PAST 2sg-ACC seek-PROG
'The man who hit me is looking for you.'

The term the man who hit me has the following underlying form:

(63) (xi: artuyN (xi): alariV (xi)Ag (xj: atjiPr (xj))Go

man hit 1sg

Artuy will be the Head of the term and is restricted by a verbal predicate.

The latter will be expressed in an RC. It is important to note how coreferentiality is denoted in FG. The first argument of the verbal predicate with the semantic function Ag (Agent) is coreferential with the future Head of the term phrase artuy. This is clear from the use of the variable xi in both positions. If an argument position is coreferential with the Head, no term can be inserted in this position and its semantic function is usually not expressed. In other words when the term variable xi occurs in an argument position of the embedded predication, no term may be inserted in that particular argument slot.

This analysis is essentially different from the traditional transformational approach. Whereas in transformational grammars the coreferential term is first inserted and then under an Equi-NP Deletion rule deleted, in FG the coreferential constituent that does not occur in the linguistic expression is not inserted to begin with. This seems a more natural explanation than the transformational production of certain elements that have to be deleted later on. In certain circumstances, however, an anaphoric element may be inserted in the argument slot in which the coreferential term variable occurs. Coreferentiality in FG is thus indicated by identical term variables and may or may not be expressed by an anaphoric element.

Back to the Kaititj example. The nominal predicate in (63) was in fact the first argument of the verbal predicate uNthu:

(64)a. uNthu (xi:artuy (xi): alari (xi)
V N V Ag
(xj:atji (xj)) (xk:ngki (xk))
Pr Go Ag Pr Go
b. artuy, atji-ng-ar alari-nh, ngki-ng uNthu-ran
man 1sg-ACC-COMP hit-PAST 2sg-ACC seek-PROG
'The man who hit me is looking for you.'

Another instance of an RC ~~may be~~ is given in (65) in which no term is inserted in the argument position for Goal of the embedded predication. In other words the Goal in the embedded predication will be coreferential with the Head of the complex term. The Head has the semantic function of Direction.

(65)a. ap (xi:ng (xi)) (xj:agir (xj):
V Pr Ag N
ayNi (xk:atji (xk)) (xj))
V Pr Ag Go Dir
b. agiri-warl ng api-n, atj-ar ayNi-njiri-warl
kangaroo-DIR 2sg-NOM walk-IMPER 1sg:ERG-COMP spear-PAST-DIR
'You go up to the kangaroo I speared.'

Dik (in correspondence) suggested an alternative to be considered in cases such as (65)b. The restrictor could be analysed as a separate term which stands in apposition to the term it modifies. Thus:

(66)a. 'To the kangaroo you go, to the one that I speared.'
b. api (xi:ng (xi)) (xj:agir (xj))
V Pr Ag N Dir
(xj:ayNi (xk:atji (xk)) (xj)))
V Pr Ag Go Dir
(This might also be a way to understand the positional mobility of adjectives, widespread in Australian languages. For example 'Kangaroo-to you go, big-one-to.')

A question related to the matter of coreferential terms not being inserted is what happens to the expression of its semantic function. In my example from Kaititj the argument position with the coreferential variable xi has the semantic function of Ag. If a term had been inserted in this position, it would be marked ergative in the linguistic expression. The agent here is syntactically the subject of the transitive verb alari 'hit'. Since however the term is not inserted, one would expect that its semantic function would not be expressed either, simply because there is no constituent to which its formal expression (the ergative case-ending) can be attached. In most languages this is certainly true. Kaititj is such a language. As we will see, Kunjen is not such a language and does indeed express the semantic function of the coreferential term variable, although the coreferential term is not inserted.

In (64)a. the function of the coreferential term variable xi in the subordinate predicate was an Agent, but its marking, the ergative, does not appear in the actual utterance (64)b. In (65) it is hard to decide whether the formal expression of the coreferential argument position (xj) Go is or is not realised, as the case-marking for Goals would be zero. All in all, there seems to be no evidence in Kaititj for assuming that the marking of the coreferential constituent is indeed expressed.

Let us now turn to Kunjen, a language that has similar RC constructions to Kaititj, but when the coreferential term is not inserted its semantic function may still be expressed. The formal expression of the semantic function, the case-marking, is attached to the subordinate predicate.

Recall that Kunjen has finite and participial RCs.

Finite RCs never receive case-marking, but participial RCs do. The latter, in fact, mark both the semantic functions of the MC and RC coreferential argument position on the subordinate predicate. The following example shows coreferentiality between an argument position which is semantically a Recipient with a subordinate Agent. Both the Recipient and the Agent/Subject are marked on the subordinate verb.

(67) ukel uwa-l ay lalang abm-al inh pigipig elgoR
bullets give-PAST I uncle person-A meat pig many
arin-am-iy-ay
kill-PAST-SUBJ-DAT
'I gave the bullets to (my) uncle who killed many pigs.'

This phenomenon would be accounted for in the Expression Rules of Kunjen.

It should be clear from these examples that RCs are handled in a different way from satellites of Circumstance, and that the analysis reflects the status of the RCs. Traditionally, RCs are labelled as adnominal and circumstantial clauses as adsentential. Circumstantial clauses start off as verbal predicate-frames and are added to nuclear predicate frames to construct extended predicate frames, whereas Heads and RCs are realised in term formation ~~(see figure 1 in the Appendix)~~. An RC is also a verbal predicate but is inserted as a restrictor to a nominal predicate. This typically reflects its adnominal status.

The difference in status between RCs and circumstantial clauses may also be reflected in the position in the MC. Whereas circumstantial clauses are found in marginal positions either preceeding or following the MCs, RCs may be found embedded in the MC. This is not surprising given the fact that the connection between RCs and their heads is one on phrase level.

As we have seen, the RC is in the role of Modifier restricting the Head. It is natural to expect the restrictor next to the entity it restricts. This is often the case as in Dyirbal:

(68) ngadya bala yugu banggul yaranggu
1sg-A there-NOM-IV stick-ABS there-ERG-I man-ERG
bagul dugumbilgu balgalmangu nyiman
there-DAT-II woman-DAT hit-INST-REL-ABS hold-PRES/PAST
'I caught hold of the stick the man was beating the woman with.'

However, according to Dixon (in the introduction in Dixon, 1976) RCs in Dyirbal can occur in marginal positions. Again, the final position of the RC can be explained in terms of LIPOC. RCs are constituents of relatively high complexity and therefore may have the tendency to be pushed towards the end of the sentence (Dixon, 1976).

Up to now we have only looked at extreme examples: clear-cut circumstantial clauses and clear-cut RCs. Most languages,

however, are not so clear-cut and fall somewhere in between these two extremes. I will give some suggestions of how to capture these languages within the given theory, and will try and relate these in-between cases to a historial perspective.

5.3 BETWEEN CIRCUMSTANTIAL CLAUSES AND RCS

How are we going to account for all these in-between cases ? RCs can be described perfectly with term-formation. Circumstantial clauses seem to fit perfectly into the category of satellites. Most languages, however, are not so 'perfect'. To make sure what we are talking about we will take two examples: Ungarinjin and Dyirbal. Ungarinjin is a language with typical circumstantial clauses, which can be read from Table 1. The parameters that are crucial are 'the possible interpretations', 'place in the MC' and 'case-marking'. Ungarinjin scores '-' for 'embedding' and '-' for 'case-marking' and has a number of possible interpretations such as temporal, locative, conditional and RC. On the other hand, Dyirbal scores '+' for both and can receive an RC-interpretation only. This is typical for RC-type constructions. We can summarise these facts in the following table:

	number of interpretations	embedding	case-marking
Ungarinjin	4	-	-
	(Satellites of Circumstance)		
Dyirbal	1	+	+
	(RCs)		

To get more insight into the situation, we will have to track down these parameters within FG. If we understand in which component of the grammar the values of these parameters are decided on, we may be able to organise the languages in some sort of order.

The first parameter, 'the possible interpretations', is actually not decided on in the grammar. As we have seen already, the whole matter of interpreting comes forward only in translating these constructions into English. It is, therefore, not part of the grammar of a particular language, but would be part of a comparative study of English and an Aboriginal language. I have still used the set of interpretations for reasons of convenience, to show the connection with the traditional approach. Also describing an aspect of Aboriginal languages in a language like English requires some comparison to keep the phenomena relatable to more common knowledge.

The values of both 'embedding' and 'place in the MC' are decided on in the Expression Rules of a language. Most languages have a rule that puts the nominal plus a subordinate predication of a

complex term next to each other in the linguistic expression. In other words, the RC occurs next to the Head and may be embedded. On the other hand, many languages have an expression rule to place the satellites of Circumstance in marginal positions.

Case-marking is also decided on in the Expression Rules. Every language has rules to indicate how a particular semantic or syntactic function is expressed. For example a transitive Subject/Topic is suffixed with an ergative and Recipients mostly with dative, and so on. Thus subordinate predicates may be case-marked the same as the heads. In a number of languages, however, this is not the case. In Kunjen the SC can have an RC-interpretation. The expression of RCs, temporal and conditional clauses are morphologically related to each other. The SC may occur embedded but there is no case-marking of the subordinate predicate. In Bandjalang the case-marking is optional. Furthermore, some languages have RCs that cannot be embedded and have no case-marking, such as Tiwi. Whereas Tiwi has one particular way of expressing its RCs, languages such as Ungarinjin share one expression (affix) amongst four different interpretations, including the RC. Thus we end up with three existing possibilities:

	NP-relative	sharing interpretations	embedding	case-marking
Dyirbal	+	1	+	+
Kunjen	+	(3)	+	-
Tiwi	+	1	-	-

The fourth, theoretical possibility, '+ - +', does not seem to occur. Yindjibarndi might have been a candidate for this combination of values, since I did not find any examples of embedded RCs. In this language, however, RCs are extremely rare and are in fact avoided in use. English RCs are mostly translated with conjoined structures, rather than SCs. So it would be speculative to suggest that Yindjibarndi represents the fourth possibility.

A consideration to be taken into account in the analysis of the individual languages is that the restricting clause may be a separate term in apposition to the term it modifies, as suggested in relation to (65)b. in 5.2.

Following a purely formal approach to the table, we could suggest to label the SCs in Dyirbal and Kunjen as RCs, as they have at least two + values for these parameters. In the same way we could categorise Tiwi and Ungarinjin as languages having circumstantial clauses rather than RCs. In other words every language with two minuses are circumstantial types, others are RC-types.

Although these parameters will play a major part in the decision,

I suspect that we have to be careful and go into more detail to come to a proper assessment. One of the major aspects to take into account would be the history of these constructions. As we will see in the next chapter, circumstantial clauses in many languages seem to develop into RC-type constructions. It would be interesting to put these SCs into their proper historical context. Again, this may be an impossible task, as little data are available. Also, it is not my aim to discuss every individual language in detail, but rather to compare and give general conclusions and suggestions.

I will therefore give some comments on a few languages only, with respect to the grammatical status of their SCs. Dyirbal seems to represent a clear example of a language with RCs. The SCs are "pretty well confined to NP-relative interpretations" (Dixon, 1976, p.3), often embedded and strictly case-marked in agreement with their head. Furthermore, the sentence may contain more than one RC; in fact, any NP in a sentence may be qualified by an RC.

Yankuntjatjara also represents a straightforward example. As we have seen, this language has both RCs and circumstantial clauses that are clearly distinguishable. Circumstantial clauses are marked locative, occur in marginal positions and do not need an NP coreferential with an MC NP. The verb is non-finite, whereas the verb in an RC is finite or nominalised.

As a last example we will take Diyari. Austin (1981b) discusses the three parameters as given by Hale (1976): (1) position (embedded or adjoined), (2) coreferentiality, and (3) semantics (interpretations). He concludes that in Diyari the 'relative clauses' are adjoined. They may receive an NP- or T- relative interpretation and these are not mutually exclusive. "It is important to note that the Diyari sentence it simply VAGUE as to the semantic connection between the clauses; the relative clause describes something which occurs at the same time as or before the main clause event." This is close to a definition of a circumstantial clause. The circumstantial clause in Diyari may have an RC interpretation depending on context.

6.0 TWO ALTERNATIVE HISTORICAL DEVELOPMENTS

Dixon suggests two alternative analyses with regard to the historical origin of RCs. The alternatives are exemplified by two languages studied by Dixon: Dyirbal and Yidiny (introduction in Dixon, 1976).

The overwhelming majority of SCs in Yidiny have an RC interpretation. They occur in marginal positions and are of the non-finite type. Dixon suspects that they are entering the process of historical change towards embedded RCs.

The three inflections that can mark RCs in Yidiny are identical to the three case-markers for dative, purposive and ablative, -nda, -gu, and -mu respectively. According to Dixon parallel syntactic explanations can be given for RCs and peripheral NPs. Therefore a plausible historical development would be:

(69) Peripheral NP ----> Adjoined RC ----> Embedded RC

A strong case can be made for the last step in this diachronic analysis if we take the adjoined relative clause to be a circumstantial clause and the embedded relative clause our RC. Aboriginal languages provide examples of all the stages between these two categories. More detail will be presented in a later section in which we will also discuss the plausibility of the first step.

Dyirbal demands a different analysis. The language has two RC-markers that are identical to two genitive inflections on nouns. In a transformational framework the possessive phrase can, therefore, be interpreted as a type of RC. A detailed discussion of the required rules and the order of application will follow in the next section.

Silverstein has suggested (in Dixon, 1976) that RCs are actually derived from possessive phrases. This provides us with an alternative view on the historical development:

(70) Embedded possessor NP ----> Embedded clause

We will have to address the question whether this suggested development is applicable to Dyirbal. Silverstein (1976) suggests that it is not. In his study of ergative systems, he concludes that the possessor in Dyirbal is in underlying form a grammatical dative case relation and the surface genitive case is the special form for adnominal dative.

In this chapter this development will be examined first, as there is some literature on the subject of how to relate genitives with RC-markers. Subsequently we will discuss the alternative as proposed for Yidiny.

These two proposals are not necessarily mutually exclusive. Some languages may have followed (69) and some (70) or even the same

language may have developed different types of RCs via both paths.

6.1.1 RCS AND POSSESSIVE PHRASES. DIXON (1969)

In a transformational grammar possessive phrases can be related on deep structure level to RC constructions. Dixon makes an attempt to prove this point for both Dyirbal and Gumbainggir (Dixon, 1969). We will go through the analysis step by step.

First, the forms of the genitive and RC suffixes are similar in Dyirbal and Gumbainggir and are suspected to be cognate.

	Dyirbal	Gumbainggir
genitive	-ngu + -ndji(n)	N & Adj + -gundi Pron + -andi or -undi
RC	-ngu	-andi

The suffix -ndji(n) in Dyirbal is optionally added to -ngu. When the genitive is followed by another case-inflection, the use of -ndji(n) is obligatory.

In Gumbainggir the RC-marker -andi is stuck to either the verb or a noun in the RC, following the inflections.

Dixon (1972, page 180) presents a list of the similarities between genitive and RC-markers in terms of phonology, morphology, syntax and distribution. The most important features are echoed here for convenience. In all dialects of Dyirbal genitive -ngu indicates a relation of present possession, whereas -mi indicates a past possession. Similarly in one of the dialects, Mamu, -ngu RCs involve imperfective and -mi perfective aspect. However, Mamu is the only dialect with both types of RCs. This implies that -mi for RCs is less common than -ngu. Interestingly there is a parallel in the distribution of these suffixes for genitive constructions: -ngu is in more frequent and wider use than -mi.

In addition there are striking syntactic similarities; for example, both RCs and possession phrases can qualify nouns in absolutive, ergative, dative, instrumental and locative cases. Further, both a genitive and the verb of an RC agree in case with the noun they qualify.

In Dyirbal the formation of RCs need the following rules:

(i) NGAI-TRANSFORMATION. This is comparable to antipassivisation. A simplified version is that in a transitive construction the ergative is replaced by an absolutive marking whereas the absolutive NP receives the ergative suffix (or dative). The verb is marked -ngai. The new absolutive NP can subsequently be relativised. Recall that in Dyirbal only

absolutives are candidates for relativisation.

For example from (71) to (72):

(71) bayi yuri banggul yaranggu bagan
there kangaroo-ABS there-ERG man-ERG spear-PRES/PAST
'The man speared the kangaroo.'

(72) bayi yara bagal-nga-nyu bagul yurigu
there man-ABS spear-ngai-PRES/PAST there kangaroo-DAT

(ii) RC-TRANSFORMATION will then delete the coreferential NP in the SC under the condition that it is an absolutive and the relative marker -ŋgu is added to the subordinate verb. Also the case-marking of the MC NP is copied onto this verb.

(iii) TENSE DELETION must be applied to eliminate the tense marking of the subordinate verb.

If we transform (72) into an RC and insert it in:

(73) bayi yara banaganyu
there man-ABS return-PRES/PAST
'The man is returning.'

we get the following result:

(74) bayi yara bagalngangu bagal yurigu banaganyu
there man-ABS spear-ngai-REL there kangaroo-DAT return-PRES/PAST
'The man who speared the kangaroo is returning home.'

Possessive phrases are now treated as a special instance of an RC construction, by inserting a dummy verb POSS(esses) in the deep structure. Thus the 'the dog of my friend' would be represented in the deep structure as <the dog: my friend POSS the dog>. The derivation then starts off with a simple transitive construction A POSS B. After applying (ii) and (iii) we get:

(75) B+c, A+ERG, POSS+REL+c (in which c stand for a case-marker)

Three additional rules are suggested to transform this structure into a possessive construction:

(iv) AFFIX TRANSFER. This rule moves the relative and case markers onto the ergative noun under the condition that the verb is POSS.

(v) ERGATIVE DELETION will now delete the ergative marking, and

(vi) POSS DELETION deletes the POSS verb.

The end result is a possessive construction:

(76) B+c, A+REL+c

For example (Dixon, 1969), 'The man's dog bit the child' is derived from:

(77) njalngga guda-nggu badja-n
child-ABS dog-ERG bite-PRES/PAST

(78) guda yara-nggu POSS-TENSE
dog-ABS man-ERG

The Agent/Subject in (77) is expanded as (78) and transformations (ii) and (iii) are applied, producing:

(79) njalngga guda-nggu yara-nggu POSS-REL-ERG badja-n
child-ABS dog-ERG man-ERG bite-PRES/PAST

Applying now the AFFIX-TRANSFER rule (iv), ERG-DELETION (v) and POSS-DELETION (vi), we get:

(80) njalngga guda-nggu yara-ngundjin-du badja-n
child-ABS dog-ERG man-REL-ERG bite-PRES/PAST
'The man's dog bit the child.'

This is the common structure for expressing alienable possession in Dyirbal.

Inalienable possession (part-whole relation), on the other hand, is shown by simple apposition of the possessed and possessor nouns. In alienable possession the noun to which the REL-suffix is attached is the possessor. Unlike case-markers, the REL-suffix can be followed by a case-suffix.

Gumbainggir is similar to Dyirbal with respect to its possessive constructions. RCs in Gumbainggir are also comparable to Dyirbal. In the derivation the same rules can be used except for the NGAI-TRANSFORMATION. Application occurs, however, in slightly different order and under different conditions.

(ii) RC-TRANSFORMATION is applicable in the same way, but the coreferential SC NP is not necessarily an absolutive.

(iii)TENSE DELETION is not applicable at this stage in Gumbainggir.

(iv) AFFIX TRANSFER moves the REL and case-marker whether the verb is POSS or not.

Possessive phrases are produced by the application of

(v) ERGATIVE DELETION, and then

(iii')TENSE DELETION and finally

(vi) POSS DELETION

Another language that behaves according to these rules is Bandjalang, or at least one of its dialects, Waalubal. The RC-marker is -ŋa:. The genitive marker has a number of allomorphs, of which the most relevant ones for the discussion are:

short vowel + -ŋga:
long vowel + -ŋga: or -ŋa:

Under certain circumstances the -ŋga: form may appear as -ŋa:. There seems to be evidence to relate the genitive and RC-suffix in terms of morphology.

According to Crowley (1978), in the derivation of RC-constructions we need a rule to delete the coreferential NP in the SC. The tense-marking of the subordinate verb is replaced by the RC-marking ŋa:.

The verb optionally agrees in case with the head in the MC. These steps are realised by RC-TRANSFORMATION and TENSE-DELETION. In the case of possessive constructions, Waalubal follows exactly the same path as Dyirbal. Let me give examples of an RC and a possessive phrase respectively:

(81) mali-yu dubay-dju buma-ni mala ŋgu:nyba
that-ERG woman-ERG kill-PAST:DEF that-ABS snake-ABS
ŋudjan-du ŋgadju wulima-ŋa:(-yu)
stone-INST 1sg-ERG find-REL(-INST)
'The woman killed the snake with the stone I found.'

(82) ŋgadju nya:-ni mala:-ni baygal-ŋa:-ni dubay-nyi
1sg-ERG see-PAST:DEF that-acc man-GEN-ACC woman-ACC
'I saw that man's wife.'

(Note that in the last example the genitive marker is -ŋa:. In other phonological circumstances the marker may be -ŋga: or one of the other alternants.)

Thus possessive phrases and RCs can be generated in closely related ways in Dyirbal and Gumbainggir, according to Dixon. I have shown that the set of rules as proposed for Dyirbal would be applicable to Bandjalang.

6.1.2 RCS AND POSSESSIVE PHRASES IN GUMBAINGGIR. EADES (1976)

Dixon's analysis of Gumbainggir was entirely based on examples taken from the northern dialect described by Smythe (1950). Smythe's data, however, are very limited. In total, 23 sentences involving RCs are repeatedly used in his grammar. Furthermore, his data seems to be inaccurate, as shown convincingly by Eades (1976).

The following facts undermine Dixon's analysis with respect to the AFFIX-TRANSFER rule. AFFIX-TRANSFER moves the relative marker and case-marker onto the ergative nouns (whether the verb is POSS or not). The assumption, therefore, is that the verb in the RC is case-marked in agreement with the coreferential MC NP.

(1) In 20 of the 23 examples, the Head of the RC is in object function. This means that the Head occurs in the absolutive case or in other words with zero case-marking. In these cases the marking of the SC would be zero accordingly. Thus whether the SC is actually unmarked or zero marked is an unanswerable question.

(2) In the remaining three sentences, the Head occurs in A function and thus ergative case. In these examples, the SC is indeed marked -u (ergative is -du or -u), which "could be taken to be an instance of ergative case-marking ..." (Eades, 1976, page 181). Eades, however, finds it speculative to draw conclusions with confidence, as she has not come across any supporting evidence in either Smythe or her own data (from the southern dialect).

Eades has even less than 23 instances of RC construction from her fieldwork with the last speaker of the southern dialect. This dialect of Gumbainggir seems to avoid RCs whenever possible. Although repeated attempts to elicit RCs to S and A NPs were unsuccessful, it is difficult to draw negative conclusions. There are only examples of RCs to an NP in O function, in locative and in instrumental cases.

(83) nga:dya nya:wang gagu:ga bunydyingandi
1sg-ERG see-PAST brother-S wake-PAST-REL
'I saw my brother waking up.'

The head of the RC is a kinship term and would be marked for object as in the simplex sentence:

(84) nga:dya nya:wang gagu:nga

(where -nga is the object case-marking on the kin and section noun gagu:)

Note that in the complex sentence the RC NP seems to be inserted rather than the MC NP. In other words, the coreferential NP fulfils the syntactic function it requires in the SC rather than the MC. This seems to be the case more often as in:

(85) yarang dawarang ngiyanggidam ma:rangandi
DEM argue-PAST 3pl-S catch-PAST-REL
dyunuybindu bulu:nggal
child-PLUR-A fish-O
'They were arguing about the fish the children caught.'

The common NP bulu:nggal 'fish' occurs in O function, which is the syntactic role it plays in the SC. Compare the simplex sentence:

(86) yaraag dawarang ngiyanggidam bulu:nggala
DEM argue-PAST 3pl fish-LOC
'They were arguing about the fish.'

An alternative interpretation could be found in a phenomenon mentioned before and not uncommon in Australia, namely replacement. The SC is actually replacing the expected NP in the MC (see also section 2.2.2). Thus instead of:

(87)a. I saw my brother waking up.
b. They were arguing about the fish the children caught.

a closer translation would be:

(88)a. I saw - my brother woke up.
b. They were arguing (about) - the children caught the fish.

According to Dik (in correspondence) these constructions are often ambiguous. In (88) b., for example, the focus of the MC verb 'argue' could be 'the childrens' catching', 'the children' themselves or 'the fish'. This is in contrast with (87) b. which represents only one possible interpretation.

Eades has not mentioned this alternative interpretation. She goes on stating that, as the RC verbs are not marked for agreement in case with the MC NP, there is no evidence for transfer of case suffixes. Also in the Gumbainggir examples the REL marker has not been transferred from the verb to the ergative noun. Eades has only found one instance of transfer of the REL marker (again no case-marking) but "too much reliance should not be placed on isolated examples of this nature, elicited with difficulty from the last speaker. But it is clear that the 'affix transfer' transformation which Dixon suggests on the basis of two examples in Smythe has virtually no support from the southern dialect." (Eades 1976, page 184)

While emphasising the similarity between genitive and RC markers, Dixon seems to have missed the far more obvious formal identity between genitive and dative suffixes. Both in the northern and southern dialect the genitive markers are made up out of the different dative suffixes plus the RC marker -(a)ndi.

Eades also shows that Dixon's rules would generate the wrong forms in certain circumstances. For instance in the following two examples of genitive constructions:

(89) ni:gargundi gamay mu:gu
man-GEN-S spear-S blunt-S
'The man's spear is blunt.'

(90) ni:gargundiyu wanydyi:dyu yi:nydyang gi:bar
man-GEN-A dog-A bite-PAST boy-O
'The man's dog bit the boy.'

Dixon's rules would have generated *ni:gar-andi and * nigar-andi-yu respectively, whereas the genitive really is -gundi in both.

The underlying transitive structure and the rules as proposed by Dixon seem to work for Dyirbal and apparently also for Kuku-Thaipan, according to Eades. For Gumbainggir, however, it would be more appropriate to assume a verbless sentence with the possessor NP as a beneficiary with respect to the possessed NP. This pattern is compatible with other verbless constructions in the language. Eades refers to work of Silverstein (1976) who argues similar analyses for Chinook and English.

To describe the genitive as a type of dative seems to be supported by more extensive evidence. In terms of TG this implies that the RC formation rule must be extended to NPs in dative case in the verbless sentences. The possessor NP would exist in dative case on a deeper level of the derivation and the RC suffix is added through RC formation (Eades, 1976).

6.1.3 AN ALTERNATIVE: SILVERSTEIN (1976)

Silverstein (1976) argues that the genitive case in Dyirbal is derived from a dative form. This conclusion was reached after an extensive analysis of Dyirbal's (and others') ergative case systems. Silverstein imposed a hierarchy on these case systems, in which nominative and dative were assumed to be the most elementary cases. Further details of this analysis are not relevant to our line of argument.

An additional argument from Silverstein may shed some new light on the situation in Dyirbal: "... in the circumstances, with true transitive A possessor and O possessed, there seems to be a comitative adjective used,..." (page 159). Dixon (1976a) discusses this construction in short. The affix is -ba or -bila (depending on the dialect) and can be stuck to nominals. A comitative form functions exactly like an adjective and takes the full range of case suffixes. Examples are:

(91) balan djugumbil njinanju djadjabila
there-II-ABS woman-ABS sit-PRES/PAST child-COM-ABS
'The woman there is sitting with a child.'

(92) ngadja guda-bila
1sg-S dog-COM-ABS
'I have a dog.'/'I, (being) with dog.'

According to Silverstein, the last example constitutes a full sentence in contrast with (93):

(93) ngaygu balan guda
1sg-GEN there-II-ABS dog-ABS
'my dog'

Thus the transitive construction with the dummy verb POSS, as

proposed by Dixon in the deep structure for possessives, is rather expressed by the comitative construction.

As a last point I will give my reservations with respect to the theoretical side of the set of rules proposed for Dyirbal. In Dixon's derivation of possessive phrases a POSS verb must be deleted, as there is no sign of a verbal form whatsoever in the surface structure. The tense-marker that could be expected has disappeared through a tense-deletion rule. The affixes are transferred and the ergative suffix on the subject NP is also deleted. Moreover there is no independent evidence for an affix -transfer rule. All in all the derivation seems a bit forced into a particular set of rules and it lacks naturalness.

6.1.4 DISCUSSION

It should be clear from the previous sections that there is no real evidence for relating RCs with possessive phrases in the way Dixon proposes. In other words, that the possessive phrase might be a type of RC seems to be a speculative claim.

There is more substantial evidence to relate the genitive to the dative, as proposed by Silverstein and as shown convincingly by Eades for Gumbainggir.

Although TG is meant to describe the synchronic state of a language rather than a diachronic development, the real value of Dixon's analysis may come forward when we see the analysis as an historical process. Suppose that in an earlier stage of Dyirbal the POSS verb did exist and the possessive phrase really was a type of RC, then at least we can explain the identity of RC and genitive suffixes.

One important point has to be mentioned in relation to this view, and that is that Dyirbal does not show any sign of grammatical verbs at all. Thus it is not an exception that a verb like 'possess' (deep structure POSS) does not exist in Dyirbal. According to Dixon it is an empirical fact that a language either has all or most grammatical verbs or has none. Dyirbal then is a language that has none which makes the assumption that the POSS verb has existed in an earlier stage hard to verify, to say the least.

We seem to be back at the start. In some languages the RC and genitive affix are similar or identical in form, but the only available literature on the subject does not give us any solutions as to how to relate them. The only two clues we are left with are the two proposed developments as stated in 6.1. It is time to look at the matter from a different angle.

6.1.5 A FUNCTIONAL APPROACH

We are now left with the question; why is the genitive marker similar to the RC marker ? or: why do possessor NPs and RCs take the same marker ? Is their function similar in any way so we can explain their identical marking ?

In an article on non-verbal predicates, Dik (1980) analyses the Dutch possessive constructions. Although the formal expression of the Dutch possessor NP is quite different from the Aborignal genitive case-marking, its semantic relation is the same. The possessor NP functions as a restricting expression. Compare the term "the dog" with "John's dog". In the latter John's restricts the potential referents of the term "the dog" to the one possessed by John. Thus as an underlying term structure this will be represented as:

(94)a. (d1xi: dog (xi): {(d1xj: John (xj)) }(xi))
N N Poss
b. John's dog

John functions as a possessive restrictor.

Silverstein's suggestion now is that possessive phrases that have always been embedded in an MC NP have given rise to embedded RCs. In other words, the restrictive function of the genitive affix came into use in verbal predicates as well.

The spread of the use of genitive affix may then have occurred in two different ways. First, the genitive marker was used as an indication of restriction in certain types of SCs. It would have been necessary for this SC to have an NP in common with the MC. Second, possessive constructions may have developed into RCs by introducing a verbal predicate.

(95) dog John-of ----> dog (beaten John-by)-of

(of represents the genitive marker first and later the RC marker) This is still a very speculative suggestion, but may be a starting point for further research. The advantages are clear: this development or a similar one would explain the similarities in syntax, morphology, phonology and distribution between the genitive and RC marker, as mentioned in section 6.1.1.

Dik (in correspondence) offers us an alternative explanation. He suggests that the so-called 'genitive' was originally a sort of nominaliser, so that the relevant Dyirbal constructions could be paraphrased as:

(96) a. the dog, the John-one
b. the dog, the I killed-one

The following arguments are given in favour of this hypothesis:
(i) It explains the occurrence of the same marker in both types of constructions;

(ii) it explains why the genitive is the only 'case' that can be followed by other cases, as
(a) it is very unusual for two real cases to follow each other, whereas
(b) it is usual for nominalised forms to take their own case endings.

This suggestion gives us a third alternative viewpoint on the historical process: the RC/genitive marker may have originated in a nominaliser.

6.2.1 THE SECOND PROPOSED DEVELOPMENT. YIDINY

Let us now concentrate on the second proposed alternative development of RCs:

(69) Peripheral NP ----> Adjoined RC ----> Embedded RC

The 'adjoined RC' is, as we have seen, rather a circumstantial clause that may or may not have an RC interpretation. The only necessary condition is that the MC and SC have an NP in common. In some languages this circumstantial clause has developed into an RC.

Dixon (1976) suggests that Yidiny is such a language. RCs can be marked by one of three suffixes that are identical to the dative purposive and ablative case inflections. In addition, there are parallel syntactic explanations for RCs and the corresponding peripheral NPs.

In Yidiny about 85% of SCs in Dixon's corpus can be translated by an RC in English, as they have an NP in common with the MC. Dative SCs normally describe something that is happening concurrently with the MC. They are marked - nyunda which consists of the subordinate marker - nyu and the dative - nda.

(97) ngaya wawa:l minya muging bidu:ng buganyunda
I-A see-PAST animal-ABS mouse-ABS eaglehawk-ERG eat-DAT SUB
'I saw the mouse being eaten by the eaglehawk.'

Although the same type of clause may lack a co-referential NP, it still indicates that the SC state of affairs occurs at the same time as the MC. The SC is then a typical circumstantial clause that can receive different interpretations, such as temporal and conditional.

(98) mayi ngayu bugabuga:ny ngungu bama
vegetable food-ABS I-A eat-REDUP-PAST THAT-S person-ABS
wunanyunda wurmba
lie-DAT SUB asleep-ABS
'I ate the vegetables while that person slept.'

Dixon notes that the examples with co-referential NPs can sometimes receive both an RC and a temporal interpretation.

The Yidiny facts may lead to the conclusion that the dative SCs were initially circumstantial clauses (or 'adjoined RCs') but seem to have specialised in the RC interpretation.

Similar evidence can be extracted from the causal clauses. Around 90% of the causal SCs have an NP in common with the MC (in S or O function). The main difference with dative SCs is the time reference relative to the MC. Whereas dative SCs describe states-of-affairs that occur simultaneously with the MC state-of-affairs, the causal SC describes something that takes place prior to the MC state-of-affairs.

(99) ngayu walba wawa:linyu yanggi:nyum
I-A stone see-GOING-PAST split-CAUS SUB
'I went and saw the rock that had been split.'

The MC can be qualified by both a dative and a causal SC as in:

(100) bama:l ganya:r baga:linyu munu
person-ERG alligator-ABS spear-GOING-PAST inside
wunanyunda dyabu bila:nyum
lie-DAT SUB ground-LOC go in-CAUS SUB
'The people went to spear the alligator who was lying inside (his lair) after having gone into (a hole in) the ground.'

There are also instances of, for example, a dative SC qualifying a causal SC. These are clear indications of the RC-like status of the clauses.

A similar analysis can be given for purposive SCs. It will suffice to say that its usual semantic interpretation is that the MC state-of-affairs is performed 'in order that' (or 'as a natural consequence of') the SC state-of-affairs may be possible.

6.2.2 PERIPHERAL NPS AND SCS

The relationship between the peripheral NPs and the SCs will become clear with an example. For instance the causal can be expressed by an NP or an SC, as in:

(101) a. The person is running away because of the woman.

b. The person is running away after/because he hit the woman.

A similar correspondence exists for purposive, although the suffix used in SCs is not the same as the one used for purposive NPs. However, in an older stage of the language it was.

For the dative the correspondence may not be so clear as yet, but the situation is actually slightly more complex. There is in fact a three-way correspondence as set out in the following table (Dixon, 1977, p.417):

	FROM (') (/as a result of)	UNMARKED (?) ('at')	TO ( ) (/in order to)
local NP	ablative *-mu* ~ *-m*	locative *-la* ~ [illegible] ~ *-da*	allative *-la* ~ [illegible] ~ *-da*
peripheral syntactic NP	causal *-mu* ~ *-m*	dative *-nda*	purposive *-gu*
subordinate clause	causal *-ju* + *m*	dative *-ju* + *nda*	purposive *-na*

Since the dative is morphologically related to the locative, it becomes clear that dative SCs are circumstantial clauses. A similar correspondence was found in, for example, Yankunytjatjara where the locative suffix can mark circumstantial clauses (for more detail see section 4.2). Also, according to Dixon, the dative case marks a 'passive' peripheral participant, and in an SC it indicates some circumstance with no temporal or logical connection of purpose or cause with the MC.

Although we can conclude from this discussion that SCs are related syntactically, morphologically and semantically to peripheral and local NPs, Dixon does not give any evidence for his assumption that the SCs are developed out of peripheral NPs. It is not really clear that in the historical process the use of peripheral case-markers has extended over SCs. This seems, however, a fair enough assumption and we will have to take this assumption for granted.

6.2.3 FROM CIRCUMSTANTIAL CLAUSES TO RCS

The dative SC may have different interpretations and occur in marginal positions only. When the SC has an NP in common they seem to specialise in RC interpretations. Thus in Yidiny there is evidence for the second step of the proposed historical process. As we have seen in the course of this paper, many languages show evidence for this second step, the only condition being that the SC should have an NP in common (usually restricted in its range of functions) with the MC.

A further argument is that more than one SC can occur in one sentence as well as an SC qualifying an NP in another SC. These facts point at a typical RC-like status of the clauses.

6.3 SUGGESTIONS

There seems to be substantial evidence in some languages to relate possessive phrases to RC-constructions and in other languages to relate peripheral NPs to circumstantial clauses and RCs. To come to final conclusions on historical trends in Australian subordinate constructions, a lot more language-individual study has to be undertaken. Especially it has to be

established that there is some movement in the development. The relationship between the categories involved is clearly visible, but to prove that the situation has changed over time is a different matter. The two major points that have to be established are (1) that circumstantial clauses are specialising in (restrictive) RC interpretations and that (2) the use of the genitive marking has been extended over SCs to define RCs.

Although these two historical developments seem very plausible for my sample of languages, we will have to keep an open mind to possible alternatives. One has already been mentioned, namely that the genitive/RC marker may have developed out of a nominaliser.

7.0 CONCLUSION

Traditionally labelled 'adjoined relative clauses', a wide range of subordinate constructions has been reanalysed in a functional framework. By using a number of parameters we could see the SCs in a wider than a purely syntactic perspective. Although all languages seem to have SCs somewhere between circumstantial clauses and RCs, language-~~individual~~ research is needed to pinpoint their exact status.

The knowledge of how the SCs have developed historically will be of great help in this reanalysis. Is the RC marking related to the genitive or has the RC developed out of a circumstantial clause ? If the former is true, what is or was the common function of genitive and RC marker ?

Many suggestions for language-~~individual~~ investigation have been given alongside actual examples.

In the process of analysing a particular piece of language, new questions arise. This paper is no exception. I have not tried to avoid posing these new questions. They relate to the distinction between finite and non-finite clauses. What are the determining factors for this distinction ? Is there a functional difference between the non-finite labels 'participial', 'infinitive' and 'nominalised' ?

Whereas we have related the parameters to the finite/non-finite distinction, further study is required to determine whether there is a particular hierarchy underlying the parameters.

The study of these related problems may, in turn, shed some new light on the analysis of SCs as proposed in this paper.

NOTES

1) It is virtually impossible to find languages from Victoria, Tasmania and from along the coastline of south west Western Australia. Yankunytjatjara, although spoken in north west South Australia, is a Western Desert dialect. The Western Desert language covers a large area of Western Australia (white area left of Yankunytjatjara on Map 1).

2) The spelling has been adjusted to suit the word processor. The changes involve the following:

(1) the transcription of the dorso-velar nasal /ŋ/ as -ng-
(2) the retroflex sounds are spelled as double letters, the sound itself precede by an -r-. Thus, -rl- stands for a retroflex labial, etc. These sequences do not occur as such in Aboriginal languages (Dixon, 1980).
(3) Similarly, interdental sounds are represented as consonants plus -h-. For example a dental -t- is transcribed as -th-.
(4) Finally, lamino-palatal consonants are written with a following -y- or -j-.

I follow the conventions as descibed in Dixon (1980: p.138). In copying examples from the various language descriptions, I have adopted the following strategy: as little changes as possible have been made. This meant that only symbols that couldn't be produced by the word processor have been transcribed differently.

3) All parameters are relevant to finite constructions unless 'finite' is non-existent. If 'finite' is '-' the values of the parameters are applicable to the non-finite constructions. Usually if finite is '+' the same values are applicable to non-finite SCs. This strategy is followed partly for reasons of efficiency (in the table) and partly as a result of limited available data. A more detailed picture of the situation will become clear from the text.

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