

The structuring of experience in the grammars of Pitjantjatjara and English

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This paper briefly surveys grammatical resources in the Australian language Pitjantjatjara, for representing the experience of its speakers, and contrasts these with corresponding resources in English. The focus is on types of grammatical structure, interpreted from the perspective of discourse semantics, using the analytic tools of systemic functional linguistics (SFL). However the field is built up in steps so that no prior knowledge of SFL is expected of the reader. The starting point is with types of structure within clauses, that construe experience as configurations of people, things, processes, places and qualities. An ‘orbital’ model is proposed for interpreting these structures. This is the basis for analysing structures that link clauses in series, including types of interdependency and logical relations between clauses. A ‘serial’ model is proposed for interpreting these types of structure. Finally these resources for structuring experience within and between clauses are contextualised in patterns of discourse, using extended text examples.

Keywords: representation of experience, types of grammatical structure, Pitjantjatjara/English

1. Introduction

In this contribution I explore a few of the ways that Indigenous Australian languages construe the experience of their speakers and communities, exemplified with the central Australian language Pitjantjatjara. Halliday (1993) has described such patterns of discourse as ‘ways of meaning’, and I also briefly compare Pitjantjatjara ways of meaning with analogous patterns in English, as this is the colonising language of Australia as well as the language of translation

and description. As the ancestral lineages of these languages have evolved separately for at least forty thousand years, in very different cultural contexts, the comparison will help to illustrate the potential for variation in ways of meaning across languages in general.

The starting point for the discussion, in Section 2, is with a brief survey of experiential structures, that is with configurations of people, things and processes, and the various ways that these can be configured. This section concludes in 2.2 by elaborating the theoretical model of such structures in the light of current thinking in SFL. Section 3 then surveys logical structures, that is the ways in which experiential configurations are sequenced in discourse. This begins with types of interdependency structures in 3.1, followed by structures for projecting what people say, think, perceive or feel in 3.2. Strategies for deploying these logical resources in discourse are then illustrated in Section 4. These include narrative structures in 4.1, and nesting of types of logical structure within others in 4.2–3. However, before turning to the discussion, I will give a brief note on theory and on the conventions I have used for translation.

1.1 Theoretical influences

Naturally the focus on ‘ways of meaning’ assumes that language is more than a neutral conduit for meanings that exist somewhere beyond it, or that words simply stand for objects in a non-linguistic reality, but that language actively shapes the ways that its speakers experience the world and act in it. My view in this regard is influenced by Whorf, but refined and elaborated through the rich model of language as meaning developed by Halliday (1993, 1994, 1996), Martin (1992) and many others in the systemic functional tradition (SFL), and through my own experience as a speaker and student of both English and Australian languages (Rose 2001a; Martin and Rose 2003).

This view of the role of language in shaping experience has also been moulded by my work with Indigenous and English speaking children in language learning (1999), influenced in turn by researchers such as Halliday (1975), Painter (1999) and Tomasello (2000). This research describes the linguistic moulding of speakers’ consciousness beginning in infancy, as the flux of experience is gradually sorted and classified into the categories of the mother tongue — categories that have evolved over millennia out of the communal experience of ancestral speakers. Vygotsky (1978:25) explains this process as follows:

Prior to mastering his own behaviour, the child begins to master his surroundings with the help of speech. This produces new relations with the environment in addition to the new organization of behaviour itself. The creation of these uniquely human forms of behaviour later produce the intellect and become the basis of productive work: the specifically human form of the use of tool.

The organisation of experience into socially derived categories renders a child's consciousness knowable and accessible to others, as a result of which each member of a speech community is ultimately able to assume that the categories with which they construe their experience are mirrored in the consciousness of their interactants. In my view it is this mutual assumability of shared consciousness that makes it possible for speakers to communicate their experience with each other through language. And since languages have evolved with these functions it seems plausible that the forms of such collective consciousness are displayed in the linguistic structures by which they are communicated.

This was certainly the position taken by Whorf, who was particularly interested in variations between ways of meaning in the Native American languages he studied, and in those that he described as Standard Average European. Semantic variation has also been a focus of study in the SFL tradition (e.g. Hasan, Cloran and Butt 1996), providing an important balance for the universalism of formalist syntax studies, as well as valuable tools for mapping relations between language and cultural variation. However I also believe that instances of semantic common ground between distant languages are equally significant. Again this view is influenced by my experience of the close translatability of spoken languages as remote as those of Europe and Australia, a perception that resonates with Durkheim's early recognition (1912) that the world view of European and Australian cultures share comparable organisational principles, despite the superficially wide gulf between them. Durkheim also recognised that forms of language and representation of experience have co-evolved through social discourse (*ibid*:433–434):

Now it is unquestionable that language, and consequently the system of concepts which it translates, is the product of a collective elaboration. What it expresses is the manner in which society as a whole represents the facts of experience. The ideas which correspond to the diverse elements of language are thus collective representations.

Drawing on these linguistic, psychological and social perspectives, the exploratory path I follow in this paper is to examine both similarities in the ways that Australian and European languages construe experience, and differences that

stand out against this common background. Questions that follow include which dimensions of language to compare in such a study, and how to do so. In addressing these I am guided by the SFL model of language as meaning potential. In this model, language is viewed as a set of systems of resources for making meaning, with these potential meanings actualised in the unfolding structures of speech. Languages vary in both of these axes, i.e. in the varieties of meanings that are available to speakers and in the strategies of each language for realising them as meaningful structures. My approach here is to begin with structures, but to show how they are motivated by their functions in realising meaning, thus allowing the systems of meanings to emerge from instances of structure.

Secondly, the SFL model proposes three general functions or 'meta-functions' for language: to construe speakers' experience, to enact their relationships, and to weave these representations and enactments together as mutually meaningful discourse. My focus here is on the first 'ideational' metafunction, the construal of experience. Pitjantjatjara systems in all three metafunctions are surveyed comprehensively in their cultural contexts in Rose (2001a) and summarised in Rose (forthcoming a). The ideational metafunction consists of two sub-types: *experiential* meanings are concerned with construing configurations of people, things, qualities and places in various kinds of processes and relations. *Logical* meanings construe sequences of such configurations and their elements.

Thirdly, the SFL model proposes three levels or strata within language, including *discourse* which is realised as *lexicogrammar* which is realised as *phonology*. My concerns in this paper are with patterns of lexicogrammar, but also to show how grammatical patterns are motivated by their functions in constructing discourse. Consequently all the examples I use are from actual discourse, and where possible examples are of extended text, rather than single clauses.

1.2 A note on translation

The comparative approach I have taken in this paper begins with Pitjantjatjara examples that are compared with English translations, so the method of translation is critical. Each clause is given two lines of translation. The first line translates word groups, words and morphemes. That is the translation brings out these three ranks of grammatical organisation, rather than treating the clause as a string of words and morphemes, as interlinear glosses can sometimes imply. This is a crucial point, as the SFL perspective on grammatical ranks is not simply a constituency model, with morphemes making up words, making up

groups, making up clauses, but is more importantly realisational, with structures at each rank realising semantic functions at higher ranks.

In the transcriptions below, the clause is spaced into its word groups, and each word in the group is translated into English. Where the discussion is concerned with the functions of these word groups, they are also given functional labels such as Actor or Process. Grammatical affixes realising functions such as tense are shown with a dash, and these functions are given labels according to their role in the systems shown in Tables 1 and 2. These tables summarise options for verbal and nominal affixes and personal pronouns, and their structural forms. Finally, the third line of translation is at clause rank, and follows the textual sequence of the original clause as closely as possible, rather than being a ‘free translation’. Because interlinear translations are both consistently intermediate and meaningful to the reader, semantic relations between the Pitjantjatjara and English clauses are made plain (see Rose 2001a for an extended discussion of these glossing principles).

Verb suffixes in Pitjantjatjara may realise features of TENSE in indicative clauses, and ASPECT in non-finite dependent clauses and verbs, as set out in Table 1. The exact phonetic form of these verb suffixes varies slightly with the morphology of the verb, of which there are four formal verb classes that have no discernible semantic significance.¹

Pitjantjatjara has a core repertoire of four nominal case inflections which contribute to realising various participant and circumstantial roles depending on their functional environment in a clause. I have labeled these inflections *active*, *neutral*, *genitive* and *locative*. Their realisations for singular personal pronouns, common nominals, demonstratives, and proper names are displayed in Table 2.

Inflecting morphemes are suffixed to the last element in a nominal group,

Table 1. Options in TENSE and ASPECT

system	feature	example	translation	label in text
TENSE	future	<i>tati-lku</i>	will climb	climb-FUT
	present	<i>tati-ni</i>	is climbing	climb-PRES
	past	<i>tati-nu</i>	did climb	climb-PAST
	past durative	<i>tati-ningi</i>	was climbing	climb-DUR
	habitual	<i>tati-lpai</i>	does climb	climb-HABIT
ASPECT	perfective	<i>tati-ntjikitja</i>	to climb	climb-PERF
	imperfective	<i>tati-ra</i>	climbing	climb-IMPERF
	completed	<i>tati-ntjanu</i>	having climbed	climb-COMPL

Table 2. Options in NOMINAL INFLECTION

nominal class		active	neutral	genitive	locative
personal	speaker	<i>ngayulu</i>	<i>ngayu-nya</i>	<i>ngayu-ku</i>	<i>ngayu-la</i>
pronouns:	addressee	<i>nyuntu</i>	<i>nyuntu-nya</i>	<i>nyuntu-mpa</i>	<i>nyuntu-la</i>
	non-interactant	<i>paluru</i>	<i>palu-nya</i>	<i>palu-mpa</i>	<i>palu-la</i>
common nominals ‘man’		<i>wati-ngku</i>	<i>wati</i>	<i>wati-ku</i>	<i>wati-ngka</i>
demonstratives ‘this’		<i>nyanga-ngku</i>	<i>nyangatja</i>	<i>nyanga-ku</i>	<i>nyanga-ngka</i>
proper names		<i>Mitakiki-lu</i>	<i>Mitakiki-nya</i>	<i>Mitakiki-ku</i>	<i>Mitakiki-la</i>

or to each unit in a pronoun complex or nominal group complex. The roles of active and neutral inflections are to distinguish participant roles in multi-participant clauses, and are labeled in examples as ACT or NEUT. The inflectional differences between nominal classes may be associated with the frequency of the transitivity roles they fulfil in discourse: personal pronouns are most often in active roles, so this has evolved as their uninflected form, whereas common nominal and demonstratives are more often in neutral roles, in which their form is uninflected, and proper names most often function as Vocatives, and so are inflected for all transitivity roles (see Rose 1996, 2001a).² The roles of locative inflections vary according to their functional environment, realising circumstantial functions of Place, Time, Means or Accompaniment, and participant functions such as Receiver, and are labeled in text examples as LOC. Genitive inflections realise either causal circumstances such as Purpose, or possession, and are labeled as GEN. Personal pronouns are glossed as far as possible with corresponding English pronoun cases, eg. ‘I/me; we/us; they/them’. Unlike English, singular non-interactant pronouns are gender neutral, but for the sake of clarity are glossed in English according to the gender of their referents in text examples. For the Pitjantjatjara system of single, dual and plural pronouns, I have used glosses such as ‘I’, ‘we2’ or ‘we3’.

2. Experiential meaning: Segmenting experience

In this section, structures that realise experiential meanings within the clause are briefly surveyed. From the perspective of social discourse, the unfolding flux of experience is segmented in both Pitjantjatjara and English into configurations that construe people and things as participating in various activities. Each such configuration is realised grammatically by a clause, and its elements

(people, things, processes, places) are realised by the word groups that make up the clause. People and things are typically realised by nominal word groups, and the processes they are involved in by verbal groups. Associated circumstances such as places, times and qualities may be realised by nominal or adverbial groups, by prepositional phrases in English, or in the case of temporal duration in Pitjantjatjara, by a verbal group.

Halliday (1994: 106–7) generalises the experiential meaning of a clause in commonsense terms as ‘goings-on’, i.e. as ‘process’, and then specifies that “material, mental and relational are the three main types of process in the English transitivity system.” This characterisation of clause as ‘process’ is appropriate across the English transitivity system, as all English clause types include a process, realised by a verbal group. However in later work discussing experiential meaning in various languages, Halliday and Matthiessen (1999) replace ‘process’ with the term ‘figure’ to generalise the experiential meaning of a clause. This term is adopted by Rose (2001a) for Pitjantjatjara, since relational clause types in this language need not include a process, and it is also used by Martin and Rose (2003) for analysing ideational meaning in discourse. Following these precedents, the semantic term ‘figure’ is used throughout this paper, in order to maintain a focus on the model of experience construed by grammatical structures. That is the configuration of people, things, processes, places and so on, realised by a clause, will be referred to as a ‘figure’.

2.1 Types of figures

Halliday (1994: 107) describes how in English “the transitivity system construes the world of experience into a manageable set of process types”. Here I outline how clauses in Pitjantjatjara construe three general types of figures: actions, relations and significations. These correspond generally to Halliday’s material, relational and mental types, but ‘process type’ is replaced with ‘figure type’ for the reasons discussed above. In the first type a person or thing is engaged in an action, behaviour or event, such as the python entering a burrow in (1).

- (1) *kuniya pulka alatjitu tjarpa-ngu*
 python big utterly enter-PAST
 Actor Process
 “An utterly huge python entered (a burrow).”

The participating thing in (1) is realised by a nominal word group, that classifies it as a ‘python’, describes it as ‘big’, and intensifies this as ‘utterly’. At this level,

English differs from Pitjantjatjara only in the order of elements within the nominal group, and the requirement for a deictic ‘an’ to indicate that it is a non-specific new identity in the discourse. In Pitjantjatjara this non-specificity is realised simply by first position in the clause. The python’s action is realised by a verbal group, in which the past time of the event is realised in Pitjantjatjara by a tense suffix *tjarpa-ngu* and in English by either a suffix ‘enter-ed’ or an auxiliary verb ‘did enter’.

Certain actions may also extend to a second participant that may be affected by it, such as the fire in (2).

- (2) *tjana kunyu waru mantji-ningi*
 they it’s said fire get-DUR
 Actor Goal Process
 “It’s said they were getting fire.”³

In (2) both languages distinguish the role of Actor from Goal by the nominative form of the pronoun *tjana* ‘they’. We could also note the realisation of continuous past time in Pitjantjatjara by a verb suffix *mantji-ningi*, and in English by the combination of suffix and auxiliary ‘were get-IMPERF’.

Actions that involve exchanging something may also involve a third participant, such as the recipient of food in (3).

- (3) *kami-ngku -ni mai u-ngu*
 grandma-ACT me food give-PAST
 Actor Recipient Goal Process
 “Grandma gave me food.”

Where the Actor is a nominal group in a multi-participant clause such as (3), it is distinguished in Pitjantjatjara by a suffix *-ngku* and in English by first position or a *by*-adjunct if passive, or in both languages by the nominative form of pronouns. In (3), both languages distinguish the Recipient with an oblique pronoun form *ni* ‘me’. In English the Recipient may also be distinguished prepositionally ‘to me’, while Pitjantjatjara relies on the lexical distinction between human recipients and non-human gifts. This variety of realisational strategies, including pronoun forms, nominal affixes and lexical distinctions, allows participants in a multi-participant clause to be arranged in any order, to come in thematic first position, or as final new information. That is, sequencing of elements in a clause is used primarily as a resource for realising textual functions in both languages, rather than experiential functions.

In the second type of figure, a person or thing is described, classified or

identified, that is, it is related to a quality, a class of entity, or an identity. In (4) something indicated in the context is described with the quality ‘good’, in (5) something is classified as a ‘burrow mouth’, and in (6) ‘my name’ is identified as ‘Mitakiki’.

- (4) *nyangatja wiru*
 this good
 Carrier Quality
 “This is good.”
- (5) *nyangatja piti tjaa*
 this burrow mouth
 Carrier Class
 “This is the mouth of a burrow.”
- (6) *ngayulu ini Mitakiki-nya*
 I name Mitakiki-NEUT
 Identified Identifier
 “My name is Mitakiki.”

Whereas describing and classifying figures relate people and things to general qualities or classes, identification is a specific one-to-one relation. One interesting difference here between the languages is that a name is construed as possessed in English, but as simply elaborating ‘I’ in Pitjantjatjara. Another is that English construes describing, classifying and identifying relations as processes of ‘being’, whereas in Pitjantjatjara they may be simply relations without a verb (of course a common pattern in many languages). However such relational figures may also be verbalised to bring in time or causation, such as the past time of (7).

- (7) *anangu tjuta nyina-ngi manta nyanga-ngka*
 person many sit-DUR land this-LOC
 Carrier Process Place
 “The people were in this land.”

Example (7) also introduces a circumstantial element, a Place in which the ‘people’ are located, indicated by a suffix *-ngka* in Pitjantjatjara and a preposition in English. Pitjantjatjara uses stance verbs for such circumstantial relations (‘sit, stand, lie’). Halliday (1994) contrasts identifying relations with attributive relations, including qualities and classes as types of Attribute. He also shows how both identifying and attributive types include intensive, possessive and circumstantial sub-types. The Pitjantjatjara potential for relational figures is

organised on similar lines, but differs principally in that circumstantial relations, like (7), are not available for the identifying type.

The third type of figure resembles material actions, but differs in that the process is one of sensing or saying, the core participant must be conscious or capable of symbolising, and additional participants may include the entity that is sensed or said. In (8) this entity is the stories that parents tell their children.

- (8) *mama-nguntju-ngku tjukurpa tjakultjungku-pai tjitji tjuta-ngka*
 father-mother-ACT story tell-HABIT child many-LOC
 Sayer Verbiage Process Receiver
 “Parents would tell stories to the children.”

As with the material action in (3), the Sayer in (8) is distinguished by the active suffix *-ngku*, but here it produces not a material effect but a semiotic event, a story. Similarly, the third participant is inflected with the locative suffix *-ngka*, functioning identically to English ‘to’, realising not a place but the Receiver of the story. Example (9) shows a process of ‘sensing’, in which the active participant is a conscious Senser (indicated in this case by a nominative pronoun form), and the process is extended to the perceived Phenomenon.

- (9) *kuta mamu -na kuli-nu*
 EB demon I hear-PAST
 Phenomenon Senser Process
 “Elder brother, I heard a demon.”

2.2 Orbital structuring

Each of the figure types illustrated in examples (1–9) involve a core participant (Actor, Senser, Sayer, Carrier, Identified) which acts, senses, says, or is ascribed a quality, class or identity. So at its most general, the model of experience construed by a clause includes a nucleus consisting of a core participant, and a process, quality, class or identity. This core participant is given the general term Medium by Halliday (1994:163). The clause may also expand beyond this nucleus to further participants such as a Recipient, Verbiage or Phenomenon (to which Halliday assigns the general term Range), and to circumstances such as a Place, Time or Quality. In order to recognise the model of experience construed by these types of experiential structure we need to stand back and look at them in more general terms. Halliday (1994:162) makes the same point: “It is true that, from one point of view, all these types of process are different...At another level of interpretation...there is just one generalised represen-

tational structure common to every English clause.” This ‘generalised representational structure’ is referred to as ‘nuclear’ by Halliday (1994:167). Martin (1992:309) takes this as a starting point for analysing patterns of figures in sequences of discourse: “Nuclear relations reflect the ways in which actions, people, places, things and qualities configure as activities in activity sequences.” The nuclear model is also recognised in formal nuclear-peripheral models of clause syntax such as Role and Reference grammar (Van Valin 1997), but differs from these models in that it takes a semantic perspective on elements of clause structure, such as process, participants and circumstances, rather than using the formal categories of ‘predicate’ and ‘argument’, and treating these formal categories as ‘slots’ in which units of meaning are inserted. Rather SFL treats grammatical structures at each rank not as syntactic placeholders, but as resources for construing experience, with the most general construal realised by the structure of clauses, the highest rank in the grammar. It follows that the nuclear structure of the clause is fundamental to the model of experience construed by the grammars of Pitjantjatjara and English, since it is the most general pattern across all types of figure/process construed by the clause.

However there are two important differences between the nuclear model described by Halliday for English clauses, and that described for Pitjantjatjara in Rose (2001a). The first difference is the direction in which the nucleus is expanded.

The Process and Medium together form the nucleus of an English clause; and this nucleus then determines the range of options that are available to the rest of the clause... The most general of these further options... is the ergative one whereby, in addition to the Medium, there may be another participant functioning as external cause... the Agent. Either the process is represented as self-engendering... or it is represented as engendered from outside.
(Halliday 1994: 164)

For example, in non-effective (middle) material processes, the Actor is Medium, but in effective material processes the Goal is the Medium, and the process may or may not be caused by an Actor/Agent. In other words, the nuclear model in English is concerned with causation, and is therefore described by Halliday as ‘ergative’. But in the Pitjantjatjara nuclear model, the primary question is not whether the process is externally caused, but whether it is extended to a second participant; the Actor remains the Medium both in non-effective processes (as in (1)), and in effective processes (as in (2)) where the process is extended to a Goal. This is a primarily transitive model of experience. Halliday (1994:167) suggests that “probably all transitivity systems, in all languages, are some blend of these two semantic models of processes, the

transitive and the ergative”. However in Pitjantjatjara, agency is a minor motif in some figure types (induced mental reactions and caused relations), in which there can be an optional additional Agent; in other figure types, Actors, Sensors and Sayers may be inflected as active to distinguish them from other participants, but they are not explicitly agentive (see Rose 2001a for more discussion, and critique of descriptions of Australian languages as ‘ergative’).

The second important difference with the Pitjantjatjara nuclear model is that the nucleus in a relational figure consists not of Medium with Process, since there may be no process, but of two entities in relation to each other, either Carrier/Medium with Attribute/Range or Identified/Medium with Identifier/Range. So to generalise the nuclear model across figure/process types and across languages, we need to recognise a nucleus including a Medium with Process or Range, an ‘inner orbit’ including Agents and/or Ranges (that are specific to each type of figure), and an ‘outer orbit’ including various Circumstances (that are available to any figure type).

Martin (1996: 63) critiques the constituency metaphor by which grammatical structures have traditionally been described:

...linguistic theory needs to metastabilise beyond mero-centrism (i.e. theoretical obsession with segmentation), treating constituency (i.e. one kind of particulate segmentation) not as a primitive, but as a structurally reductive (and experientially biased) form of representation, the privileged status of which has to do with the evolution of writing systems, not the structure of language.

The constituency metaphor does not adequately portray the types of structures that realise the nuclear model of experience described above. Accordingly, Martin adopts the term ‘orbital’ to describe such structures (1996: 45): “The constituency perspective construes activity as a bounded whole and segments it; the orbital perspective focuses on a centre of activity, and then maps associated phenomena.” Orbital structures do not require contiguity to realise relations between elements, so that each element may occur in any position in the clause, depending on textual factors. Sequencing plays no part in experiential meaning at clause rank in Pitjantjatjara; it is purely a resource for textual organisation. The orbital structure potential for Pitjantjatjara and English, shown in examples (1–9), is diagrammed in Figure A.⁴ The diagram consists of a nucleus with Medium and Process (or Range for verbless relations), using a yin-yang design to symbolise the complementarity of Medium and Process/Range. Orbiting this nucleus are Ranges and/or Agents that are optional within each type of figure type, and so more peripheral; and orbiting these are Circumstances that are options across all figure types and thus more marginal to each.

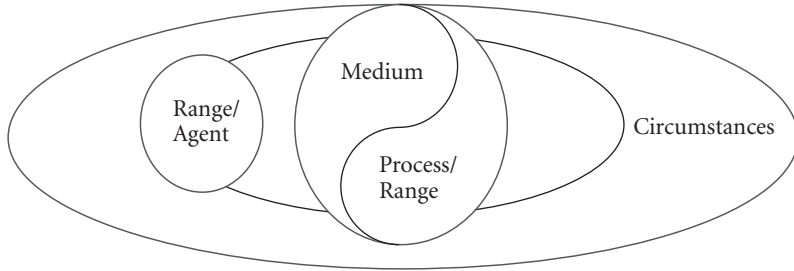


Figure A. Orbital structure potential of experiential figures

3. Logical meaning: Serial structuring

Complementing the orbital structuring of clauses are serial structures that link figures into sequences of activities. These types of structures realise what Halliday has called the ‘logical’ dimension of ideational meaning, since they function to logically relate one element of experience to another. Whereas each orbital structure consists of just one nucleus, Martin (1996:51) has suggested that serial structures are ‘multi-nuclear’:

...if an orbital perspective on experiential construals of reality is preferred over a part/whole one, then logical structures might be better referred to as serial rather than as part/part (the term part is a misnomer in any case for a structure not implying a whole). In these ‘solar system’ terms, the difference between experiential and logical structures is that experiential structures are mono-nuclear (i.e. one nucleus and one or more satellites) while logical structures are multinuclear (i.e. each satellite is itself a nucleus).

This multi-nuclear pattern of serial structures can be illustrated with the following extract from a Pitjantjatjara story. At this point in the story, two women have been travelling, and go through a series of actions, of sleeping, hunting, camping and arriving.

- (10) (From *Piltati* told by Nganyintja)
 δ *munu pula ngarin-tjanungku*
 and they₂ sleep-COMPL
 “Then after sleeping,
 γ *pungku-la*
 strik-IMPERF
 hunting some more,

- β *antjakaringku-la*
 camp.out-IMPERF
 and camping out again,
 α *wirkati-ngu*
 finally.arrive-PAST
 they finally arrived.”

This is a series of non-finite clauses, ending with a finite clause in the past tense. The relation between the clauses is indicated by Greek letters, following Halliday’s notation (1994:216), with the finite clause presented as the α head. Strikingly, the English translation for (10) follows an almost identical pattern, as a series of non-finite clauses ending with a finite one. The most significant difference is that the Pitjantjatjara series makes the Medium explicit in the first δ clause (*pula* ‘they2’), and then presumes it, whereas the English series first presumes the Medium and then makes it explicit in the final α clause (‘they’).⁵ The sequence is illustrated in Figure B, which diagrams the complementary functions of orbital and serial structures for construing experience as series of orbital nuclei.

3.1 Types of interdependency: Hypotaxis and parataxis

Halliday refers to the type of dependency structure illustrated in text (10) as ‘hypotactic’ (1994:218). Hypotactic structures involve a series of subordinate clauses which are dependent on a dominant α clause. Whereas in English, subordinate clauses in a hypotactic complex may be either finite or non-finite, in Pitjantjatjara hypotaxis is always a sequence of finite with non-finite clauses. Hypotaxis in Pitjantjatjara can be used to realise logical relations between figures of successive or simultaneous time, manner, reason, purpose or condition, depending on the order of finite and non-finite clauses, and on the aspect

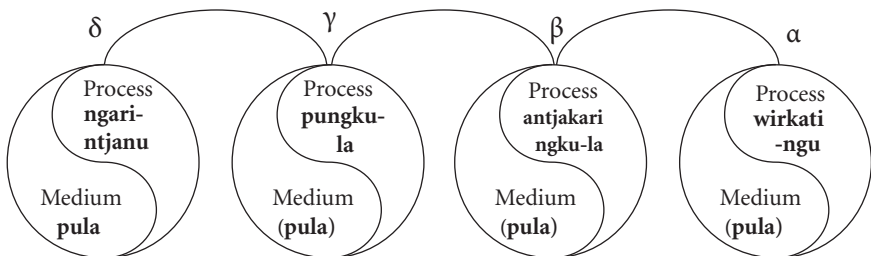


Figure B. Multi-nuclear serial structures

of the non-finite process (perfective or imperfective) (Rose 1993). These types of logical relations (i.e. varieties of time and consequence) are described by Halliday (1994:219) as ‘enhancement’; they construe one figure as enhancing the experiential content of another.

Alternatively, a series of finite clauses may be ‘paratactically’ interdependent (‘coordinate’ clauses in traditional terms). Example (11) displays two types of paratactic relation in Pitjantjatjara. In the first type, a following figure *elaborates* on the experiential meaning of a preceding figure (1=2, 3=4), and in the second type, a following figure *adds* to the experiential content of preceding figures (+5, +6, +7).⁶ Both are also common logical types in English, with elaboration used to further specify or describe a figure, and addition often used to add one event to another in narrative sequences in both languages.

(11) (From *Piltati* told by Nganyintja)

- 1 *wati kutjara kunyu kuta-rara nyina-ngi*
man two REPORT brother-pair sit-DUR
“It’s said that there were two men, who were brothers.”
- =2 *kungkawara kutjara alti-ngu kangkuru-rara*
young woman two marry-PAST sister-pair
“Two young women were married to them, who were sisters.”
- 3 *wati kutjara pula a-nu malu-ku*
man two they2 go-PAST kangaroo-GEN
“Those two men went hunting for kangaroos.”
- =4 *kuka kanyila-ku tati-nu puli-ngka*
game wallaby-GEN climb-PAST hill-LOC
“For wallabies, that is, they climbed up in the hills,
- +5 *munu pula kuka kanyila kati-ngu*
and they2 game wallaby bring-PAST
and they brought back wallaby meat to the camp.”
- +6 *ka pula mai-ku tjaru-ukali-ngu*
andsw they2 vegetable.food-GEN down-descend-PAST
“And the other two went down (to the plain) for vegetable foods,
- +7 *munu pula mai ili ura-ningi*
and they2 food fig collect-DUR
and were collecting wild figs.”

In example (11), the first figure introduces the identity of ‘two men’ who were brothers, and the second figure =2 then elaborates this with the identity of the ‘two women’ they married, who were sisters. Together this pair of introductory figures constitutes the orientation phase of the narrative. The action then begins in 3, as

the two men go out for kangaroos, which is then specified in =4 as ‘climbing in the hills for wallaby game’. These elaborating relations are realised simply by apposition of the two clauses, which is also a common pattern in English.

Additive relations, on the other hand, are realised by the conjunctions *munu* and *ka*. Both translate as ‘and’, but also indicate whether the Medium of the figure is the same or different from the preceding figure. These types of features are commonly known as ‘switch reference’ conjunctions in Australian and Papuan languages (Dixon 1980; Foley 1986). That is, a textual function of participant identification is conflated with the logical function of addition. *Munu* indicates the Medium is the same, while *ka* indicates the Medium identity is ‘switched’. So *munu pula* in +5 indicates the same ‘two men’ as Figure 4, whereas *ka pula* in +6 indicates that a different identity is Medium, i.e. the ‘two women’; and these are indicated again as *munu pula* in +6. In English the additive and reference functions are separated out, with the conjunction ‘and’, and comparative reference ‘the other two’, as in the translation of +6.

The additive ‘and’ type of logical relation is grouped together by Halliday (1994:245–9) with the alternative ‘or’ type as varieties of ‘extension’. Alternation is realised in Pitjantjatjara not with a conjunction like ‘or’, but by apposition with a contrast in tone contour between clauses. All the logical relations outlined to this point — elaboration, extension and enhancement — are collectively referred to by Halliday (1994:219) as types of ‘expansion’, i.e. a figure expands on the experiential meaning of another by elaborating it, extending it, or enhancing it with time or consequence.

To summarise serial structures to this point:

1. Interdependency relations between figures may be either paratactic or hypotactic.
2. In Pitjantjatjara, hypotaxis includes enhancing logical relations of time, manner, reason, purpose or condition. Parataxis may be either an elaborating or extending logical relation.

In contrast to Pitjantjatjara, types of taxis (interdependency type) and logical relation are freely combinable in English, so that elaborating, extending and enhancing relations may be either paratactic or hypotactic. However, Nesbitt and Plum (1988) found that in English, parataxis is significantly favoured for elaboration and extension, and hypotaxis for enhancement, and they suggest that the modern English system may have evolved out of a system more like that of Pitjantjatjara, in which elaboration and extension are exclusively paratactic and enhancement exclusively hypotactic.

3.2 Projecting series

Halliday contrasts expanding logical relations with another set of relations known as ‘projection’. Projection is the logical relation between a process of saying or sensing and a figure representing what is said or sensed. We have already introduced processes of saying and sensing, in examples (8) and (9) respectively. In these examples, what was said or sensed was construed as a thing, a ‘story’ that was told, or a ‘demon’ that was heard. However, what is said or sensed may also be construed as one or more whole figures, in both Pitjantjatjara and English.

In example (12) a younger brother makes a request to his elder brother. The process of asking is construed as clause 1, which projects the request as clause 2. The relation of verbal projection is indicated in the example by the speech mark “2.

- (12) 1 *ka nyanga-ngku wangka-ngu*
 and this one-ACT say-PAST
 Sayer Process
 “...and this one said,
 “2 *kuta ngari-ku-na nyanga-ngka*
 EB lie-FUT-I this-LOC
 “Elder brother, may I lie here?””

Sensing figures in both languages include processes of thinking, perceiving or feeling (Halliday 1994; Rose 1993, 1996, 2001a). In example (13), a process of thinking in clause 1 projects what is thought as a statement in clause 2. The relation of mental projection is indicated by a report mark ‘2.

- (13) 1 *ka -la pala palu-la kuli-ni*
 and we3 there that-LOC think-PRES
 Senser Time Process
 “And at that we thought,
 ‘2 *nyanga palu-nya piranpa-ku idea pitjan-tja*
 this here-NEUT white-GEN idea come-NOMINAL
 “This is a white person’s idea that’s come.””

So projection takes advantage of the potential of serial structuring to construe saying and sensing as a series of figures, one projecting and the other projected. These two options in projection contrast with the three options in expansion described above, but like relations of expansion, projecting relations may be either paratactic or hypotactic. Halliday (1994:250–2) defines paratactic

projection as involving a clause that ‘quotes’ the wording that was said or sensed, whereas hypotactic projection ‘reports’ the meaning of what was said or sensed. In oral discourse, quoting enables us to represent not just the words that were said, but also the tones and voice quality. In reported projections in both languages, person and time reference are indirect; they relate not to the reported activity, but to the situation of speaking (and so are known as ‘indirect speech’). In addition, Pitjantjatjara uses non-finite hypotactic projections for reporting verbal commands and mental reactions.

In both Pitjantjatjara and English discourse, verbal projections are more likely to be paratactic, as in example (12). In English discourse, Nesbitt and Plum (1988) find the opposite for mental projections, which typically report the meaning of what was thought, perceived or felt. However, the Pitjantjatjara system of mental projection differs from the English system in several ways. Firstly, English makes clear grammatical distinctions between processes of cognition and perception, as perception is unlikely to project quoted wording. In Pitjantjatjara, on the other hand, there is no grammatical distinction between thinking and perceiving; both are most likely to project quoted wording, and one word *kulini* can represent either ‘thinking’ or ‘hearing’ (the distinction is usually clear in the context). Example (14) displays this pattern, with clause 1 construing a process of ‘seeing’, while what was seen is presented as both a Phenomenon within this figure, and a projected clause ‘2.

- (14) 1 *piti tjaa* Ø *nya-ngu*
 burrow mouth (she) see-PAST
 Phenomenon Senser Process
 “It was the mouth of a burrow that she saw,”
 ‘2 *nyangatja piti tjaa*
 this burrow mouth
 “This is a mouth of a burrow.”

In example (14) clause ‘2 is the quoted wording of the Senser’s mental processing on seeing the ‘burrow mouth’. This is quite different from the typical pattern in English in which the wording would be projected by a further process of ‘thinking’, e.g. ‘She saw a burrow mouth and thought “This a mouth of a burrow.”’

Secondly, Pitjantjatjara differs from English with respect to the third type of mental projection. For English mental processes, Halliday (1994: 118) describes the third type as ‘affection’, with the subtypes ‘desideration’ and ‘reaction’. But in Pitjantjatjara the third type of mental process is reaction, including affective and cognitive sub-types. Reaction series are always hypotactic, with a non-finite

projected clause. The sequence in (15) shows how a projected reaction is inflected as non-finite perfective *wangkan-tjikitja* ‘to talk’.

- (15) α *paluru kunta-ringanyi*
 he shame-become-PRES
 Senser Process
 “He is embarrassed
 β *anangu tjuta-ngka wangkan-tjikitja*
 people many-LOC talk-PERF
 to talk in front of many people.”

Mental processes of reaction in Pitjantjatjara are construed as inceptive affective or cognitive qualities, using the verbal suffix *-ringanyi* ‘becoming’, e.g. *kunta-ringanyi* ‘becoming shamed’ (i.e. ‘embarrassed’), or *ninti-ringanyi* ‘becoming knowledgeable’ (i.e. ‘learning’). The projected process is generally non-finite in perfective aspect (‘to-V’). This type of structure construes reaction as a change in the internal state of the Senser in response to an outside stimulus. Unfortunately there is insufficient space to pursue this semantic region here, but see Rose (2001a) for a more comprehensive description of mental processing in Pitjantjatjara grammar.

To summarise projecting structures:

1. Projection in Pitjantjatjara may be either verbal or mental, including the mental subtypes cognition/perception and reaction.
2. Both saying and cognition/perception are typically paratactic, quoting the wording of what was said or sensed, but reaction is always hypotactic, reporting a change in the stimulus, resulting in the Senser’s reaction.
3. These proportionalities differ from English, in which mental processes are typically hypotactic, there is a clear grammatical distinction between cognition and perception, and the third mental type is affection.

4. Orbital and serial structuring: Functions in discourse

This has been a very brief outline of some of the potential for orbital and serial structuring in Pitjantjatjara in comparison to English. However, considering my focus on structures actualising potentials, I believe it is equally important to contextualise these resources in the functions for which they have evolved to fulfil unfolding discourse. I begin by illustrating the roles of orbital and serial structuring in the construction of narrative discourse, in 4.1, followed by

examples of hypotactic series, nested in paratactic series in 4.2, and of projecting series nested in expanding series in 4.3.

4.1 Orbital and serial structuring in narrative discourse

Example (16) is an extract from a traditional story that begins with two sisters busily digging out burrows looking for small game. One sister tells the other to go and fetch a long stick *wili*, for feeling into burrows, but while going to do so she finds a burrow made by two *wanampi* serpents, gigantic mythic pythons that dwell in the sacred waterhole of *Piltati*. These *wanampi* are actually the sisters' own husbands who have transformed themselves. In this extract the woman sees the tail of a *wanampi* lying in the mouth of the burrow, and mistakes it for the tail of an ordinary desert python *kuniya*. The selection in figure type is specified to the right, and logical relations of addition (+), elaboration (=), saying ("), and sensing (‘), are given to the left.

(16) (from *Piltati* told by Nganyintja)

- | | | |
|------|---|----------|
| 1 | <i>ka kangkuru-rara panya kutjara tjawa-ningi</i> | [doing] |
| | and sister-pair that two dig-DUR | |
| | Actor Process | |
| | “...and those two sisters were digging.” | |
| =2 | <i>watarku minyma kutjara tjawa-ningi tjawa-ra tjawa-ra</i> | [doing] |
| | heedlessly woman two dig-DUR dig-IMPERF dig-IMPERF | |
| | Quality Actor Process Duration | |
| | “Heedlessly the two women were digging, continuously.” | |
| +3.1 | <i>ka Ø watja-nu</i> | [saying] |
| | and (one) command-PAST | |
| | Sayer Process | |
| | “Then one sister told the other,” | |
| “3.2 | <i>Ø wanyu wili mantjila</i> | [doing] |
| | (you) ‘please’ long stick fetch | |
| | Actor Goal Process | |
| | ‘Please fetch a long stick.’ | |
| +4 | <i>ka kutju a-nu</i> | [doing] |
| | and one go-PAST | |
| | Actor Process | |
| | “So the other sister went,” | |

+5.1	<i>munu</i> Ø <i>anku-la nya-ngu</i> and (she) go-IMPERF see-PAST Senser Process “and while going along she saw,”	[sensing]
‘5.2	<i>nyaa nyangatja pupa-nyi</i> what this crouch-PRES Class Carrier Process “‘What is this here?’”	[classifying]
‘5.3	Ø <i>wanampi-purunpa</i> (it) <i>wanampi-like</i> Carrier Comparison “‘It is like a <i>wanampi</i> serpent.’”	[describing]
=6	<i>kuniya-lta palku</i> python-that mistake Class Carrier “She mistook it for a python.”	[classifying]
=7.1	<i>piti tjaa</i> Ø <i>nya-ngu</i> burrow mouth (she) see-PAST Phenomenon Senser Process “It was the mouth of a burrow that she saw,”	[sensing]
‘7.2	<i>nyangatja piti tjaa</i> this burrow mouth Carrier Class “‘This is the mouth of a burrow.’”	[classifying]

The story of text 1 unfolds as an activity sequence with three phases, including the setting (1–2), one sister leaving (3–4) and seeing the burrow (5–7). Clause =2 elaborates on 1 with the Quality and Duration of the two women digging. This well illustrates the value of orbital structuring for positioning clause elements in any order, allowing the Quality to be thematised as starting point, and the Duration to be new information at the end, i.e. sequencing of clause elements becomes a resource for textual organisation.

The series of clauses 3–4 then construes verbal interaction as an exchange, with one sister demanding a service (3), to which the other complies by ‘going’ (4). The discursive function of including this exchange in the story is to ground the discovery of the *wanampi* in the sisters’ relationship. It is the younger sister who finds the *wanampi* burrow, but this is the result of the older sister demanding a service of her. What the younger sister perceives are things — something that looks like a *wanampi* (5.3), but which she mistakes for a *kuniya* (6), and

then classifies as the mouth of burrow *piti tjaa* (7). But these perceptions are construed not merely as things. Rather the story tells us what the sister thought as she saw, using the same resources for quoting speech as in the verbal interaction — “What is this?” she asks herself, “It’s like a *wanampi*.” and then states to herself “This is the mouth of a burrow.”

The sister’s question to herself in 5.2 is an example of a relation realised by a verb of stance, in this case *pupa-nyi* ‘crouching’. The sister then answers herself in 5.3, by attempting to classify what she has seen with a circumstance of Comparison *wanampi-purunpa* ‘like a *wanampi* serpent’. (The Carrier in this case is presumed from the previous clause *nyaa* ‘what thing’.) However, clause 6 is another pattern unique to Pitjantjatjara, in which the Carrier is *palku* ‘mistake’, and this mistake is classified as *kuniya* ‘python’. This comment by the narrator cannot be translated directly into English; its meaning approximates ‘She mistook it for a python’. Finally, clause 7.2 is a simple classifying relation, when the sister names what she has seen: *nyangatja piti tjaa* ‘this is the mouth of a burrow’.

Serial structuring is also a resource below clause rank, within elements of figures. For example in clause 2, the Duration of the action is realised by a non-finite verb series *tjawa-ra tjawa-ra* ‘digging digging’. This is not part of the verbal group realising the process, but a separate circumstantial element. Like other circumstances, Duration may occur in any position in the orbital structure of the clause, irrespective of the position of the Process. This verbal strategy for expressing Duration is perhaps more iconic with unfolding time than the English preference for nominal forms, such as ‘for a long time’. The Pitjantjatjara preference for verb series to express unfolding process is also reflected in clause 5.1, where the Process is a compound action *anku-la nya-ngu* ‘saw while going’. Such conjoining of a non-finite and finite verb is a feature of both languages, but is a particularly common pattern in Australian (and other) languages, for expanding lexical verbs, and is sometimes included in the formal category ‘serial verbs’ (see Note 4).

4.2 Nested serial structures

In addition to the role of logical relations in discourse illustrated in (16), the potential of serial structuring can be expanded by nesting one type of logical relation in another. This includes nesting of enhancing or projecting series within additive series. We have shown that both Pitjantjatjara and English can use either additive or enhancing series to construe activity sequences. The text

in (17) (a later extract from the same traditional story) contextualises our first serial example (10) in the additive series in which it was nested by the narrator.

- (17) (from *Piltati* told by Nganyintja)
- 1 *pula pararitja-kutu a-nu*
 they2 distant place-to go-PAST
 “They went to a distant place,”
- +2 *munu pula ma-antjakari-ngu*
 and they2 away-camp.out-PAST
 “and they camped away for the night.”
- +3 δ *munu pula ngarin-tjanungku*
 and they2 sleep-COMPL
 “Then after sleeping,”
- γ *pungku-la*
 strike-IMPERF
 “hunting some more,”
- β *antjakaringku-la*
 camp.out-IMPERF
 “and camping out again,”
- α *wirkati-ngu*
 finally.arrive-PAST
 “they finally arrived.”

Why does the narrator use both logical types to construct this activity sequence? The answer lies in the different ways that each type construes unfolding events. The additive sequence 1–3 uses finite clauses to construe each event as discrete and added one to the other. But the enhancing sequence nested within this uses non-finite imperfective clauses to construe figures as running into each other towards completion of the sequence in the final finite process.

4.3 Nested dialogue

We have seen that series of figures can be built up recursively by addition or enhancement, in both languages. This is also an option for projecting series in English: I thought → she said → he told you → to ask me. However such recursive projection is not available in Pitjantjatjara, since projecting sequences in the language are always projecting figure → projection, as we have illustrated above. However, it is possible to nest dialogue within a narrative sequence in quite complex patterns. This potential is employed in the text in (18), which is an extract from a contemporary story about political change (courtesy Ivan Baker).

- (18) 1 *mungawinki-lta meetingi startari-ngu*
morning-that meeting start-PAST
‘‘In the morning the meeting started,’’
- +2.1 *ka watja-nu*
and say-PAST
‘‘and (the leader) said,’’
- 2’’2 *meeting panya run-amila-ntjaku*
meeting that run-PERF
‘‘In order to run this meeting,
- 2’’2 *ngana-nya nyura Chairman tjungku-ntjikitja mukuringa-nyi*
who-NEUT you3 Chairman put-to want-PRES
‘whom do you want to put as Chairman?’’
- 3.1 *pala tjana*
that they3
‘‘They replied,’’
- 3.’’2 *Kuki-nya*
Kuki-NEUT
‘‘Kuki!’’
- +4.1 *ka paluru tjapi-nu*
and he ask-PAST
‘‘Then he asked,’’
- 4’’2 *Council nyangatja nyura nyaa wangka-nyi*
Council this you what say-PRES
‘‘What are you calling this council?’’
- +5 *ka ngayulu watja-nu Pitjantjatjara Council*
and I tell-PAST Pitjantjatjara Council
‘‘So I said ‘Pitjantjatjara Council.’’
- =6 *panya ngayulu kuli-ni kampa kutjupara pitja-ntja*
that I think-PRES side another come-NOMINAL
‘‘because I was thinking, coming in from the other side,
- 6’ *Pitjantjatjara Council tjungku-ntjikitja*
Pitjantjatjara Council put-PERF
to give it the name Pitjantjatjara Council.’’

In order to represent this dialogic sequence, the narrator has used complex patterns of nesting of projection within the additive sequence, and of enhancing sequences within projection. These patterns are illustrated in Figure C. Each turn in the dialogic sequence is added using *ka*. In step 2, the projection is a hypotactic sequence of purpose: ‘‘In order to run this meeting → whom do you want to put as Chairman?’’. Finally Figure 6 elaborates the narrator’s own turn

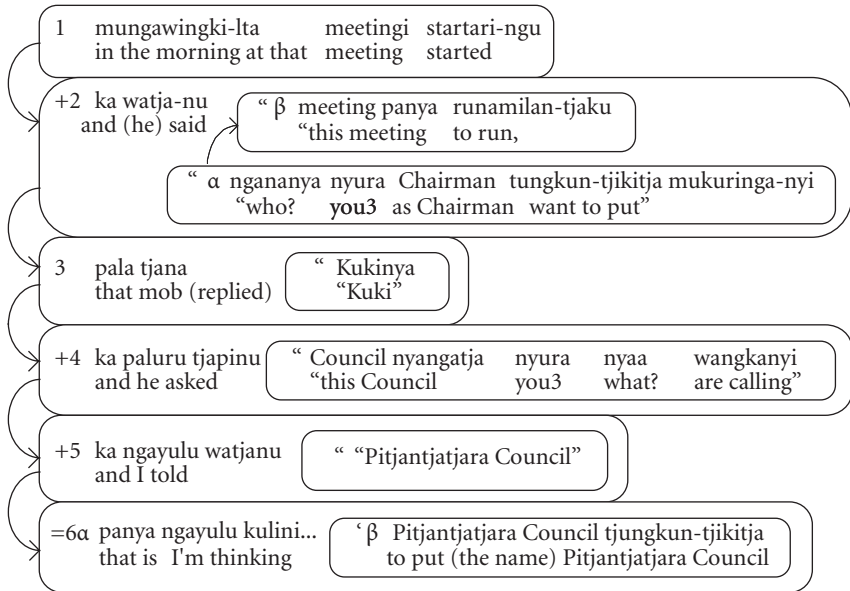


Figure C. Nesting of projection in dialogue

in the exchange 5, with a comment explaining his statement. Here the elaborating relation is realised by the conjunction *panya* ‘that is’.

To sum up, the options available for serial structuring in Pitjantjatjara include projection or expansion, parataxis or hypotaxis and complexing once or recursively. These general options are set out as a system network in Figure D. Note that taxis and expansion are shown as simultaneous systems to simplify the presentation. However, as discussed above, elaborating and extending sequences are only paratactic, while enhancing sequences are only hypotactic.

5. Conclusion

This has been the merest sketch of the structuring potential of Pitjantjatjara for construing experience in comparison with that of English, yet a wealth of interesting patterns have become evident. We have noted some significant differences between the languages, including the following contrasts:

1. A purely transitive model of ‘deed-and-extension’ in Pitjantjatjara figures, and a predominantly ergative model of ‘cause-and-effect’ in English
2. The representation of both cognition and perception as quoted ‘inner speech’ in Pitjantjatjara, versus a clear distinction between internal cogni-

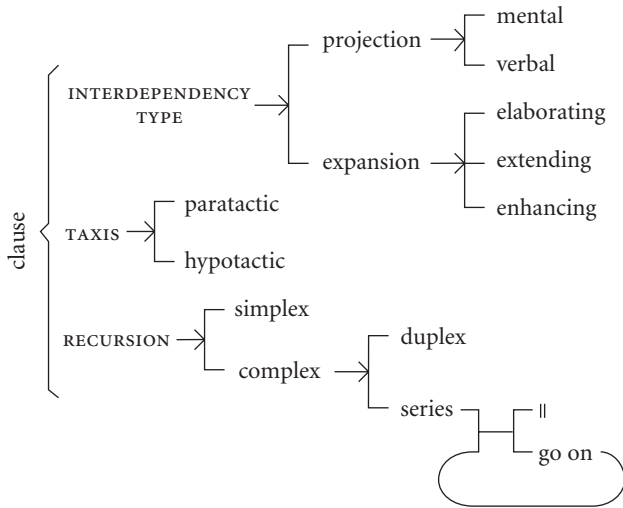


Figure D. General options in serial structuring of clauses in Pitjantjatjara

- tion and external perception in English
3. Only people as Sayers in Pitjantjatjara, but any symbolising object as potential Sayers in English
 4. Relational figures without processes in Pitjantjatjara, but all figures including a process in English
 5. Restriction of parataxis to elaborating and extending relations, and hypotaxis to enhancing relations in Pitjantjatjara, versus free combinations of taxis and expansion types in English
 6. Tendency for long series of interdependent figures in Pitjantjatjara narrative, perhaps less common in English, particularly in writing
 7. Circumstances of Duration realised by verb series in Pitjantjatjara, but typically by nominal groups in English
 8. Favouring of verb duplexes to express complex processes in Pitjantjatjara
 9. Small lexical set of verbal and mental processes in Pitjantjatjara, but large open lexis of verbal and mental processes
 10. Small set of stance verbs for relational processes in Pitjantjatjara, but large open lexis of relational processes in English, borrowed from material, mental and verbal lexis, as well as verbalised conjunctions.

These intriguing differences in ways of meaning stand out against equally fascinating commonalities in the organisation and structuring of the languages.

In both languages, experience is analysed into configurations of processes or relations involving people, things, places and qualities. Similar types of figures make up the transitivity systems of both languages, construing experience as actions, verbal and mental processes and relations, involving participants in similar types of roles. Figures and their elements are realised by a comparable rank scale of wordings, from clauses to nominal, verbal and adverbial word groups, words and morphemes. Figures are structured orbitally around a nucleus of obligatory elements, so that virtually any element can form the starting or end point of a message. These quanta of experience are linked in serial structures, through comparable options in interdependency, taxis and recursion, to represent experience as sequences of activities, including complex action sequences, dialogue and description of people and things.

Differences in the cultural environments in which Pitjantjatjara and English have evolved are evident in the unique language features identified in this paper. And some of these differences also reflect those pointed out by Whorf (1956), between Native American and European languages. Yet it is remarkable that underlying such differences are larger patterns of meaning and structure that are strikingly similar between Australia and Europe, and it would be interesting to know why this is so. Research into typological relationships with languages outside of Australia has in the past been opposed by the Australianist authority Dixon, claiming that “there is absolutely no evidence for a genetic connection between Australian languages and anything outside the continent; there is not even the remote ‘possibility’ that scholars could argue about” (1980:238). Nevertheless Nichols (1997) has revived interest in such relationships with a comparative study of various syntactic classes that are shared between various Papuan languages and various Australian languages, suggesting evidence of common inheritance. Broad commonality of semantic and grammatical patterning, of the kinds described above, is also apparent across other languages described from an SFL perspective in Caffarel, Martin and Matthiessen (forthcoming), and Rose (2001b), and possibilities for historical explanations of such commonalities are surveyed in Rose (forthcoming b).⁷ However this kind of research agenda requires a linguistics capable of relating grammatical structuring in diverse languages, to patterns of discourse semantics, and hence to the social functions of these discourse patterns across cultural contexts. I hope that the models of structuring developed in this paper, to account for patterns in both Australian and European languages, can contribute in a small way to the evolution of such a linguistics.

Notes

1. We could describe variations in Pitjantjatjara verb endings as a morpheme rank system of VERB CLASS OR CONJUGATION, to borrow the traditional terminology based on a similar system in Latin. These formal variations tend to be a significant focus in formalist Australian language descriptions.
2. The labels I have used for nominal inflections here are oriented to their clause rank roles rather than their morphological forms, and so partly differ from labels used in formally oriented descriptions of Australian languages. I have used the term 'active' for the inflections that formal grammars label as 'nominative' for personal pronouns, but 'ergative' for other nominals, and I have used 'neutral' where formal grammars use 'accusative' for personals and 'absolutive' for others. A semantic interpretation is sometimes ascribed to the 'nominative/accusative' vs 'ergative/absolutive' inflectional contrast (e.g. Dixon 1980), but I have found no evidence of this in text analyses, by asking speakers, or as a Pitjantjatjara speaker myself; the contrast is one of morphological form rather than clause rank function, and is not relevant to the semantically focused analyses here (see Rose 2001a for further discussion).
3. Textual elements such as *ka*, and interpersonal elements such as *kunyu* have no experiential function in the clause, and so are not labelled in the transitivity analysis.
4. Note that diagrams are labelled as Figures A, B, C and D, to distinguish them from the use of the term 'figure' in the text.
5. Recursive series of dependent processes, exemplified in (9) as $\delta \gamma \beta \alpha$, have been widely noted for Australian and Papuan, as well as African and American languages (eg. Gleason 1968; Wurm 1975; Martin 1983; Foley 1986; Austin 1988). This feature is often described as either 'clause-chaining' or 'verb-serialising' with the dependent clauses given the formal label 'medial' or 'serial' verb. On the basis of this syndrome, such languages have sometimes been labelled as 'clause-chaining languages'. However the resources employed here are similar to those available for recursive clause complexing in English (see Martin 1988; Halliday 1994:238–9). What is significant about the syndrome of recursive hypotactic clause 'chaining' is not so much that it happens in one group of languages and not in another, but that it is a favoured option for representing ongoing activity sequences in spoken languages such as Western Desert, as well as in the spoken mode of English.
6. The symbols = ('equals') and + ('is added to') are used by Halliday (1994:219) to indicate logical relations between clauses of elaboration and extension respectively, as are the symbols " (double quotes) and ' (single quotes) to indicate projection of verbal locutions and mental ideas, respectively.
7. The socio-cultural account of grammatical and semantic commonalities suggested here contrasts with formalist hypotheses that attempt to link 'universal' syntactic structures to neurological 'hard-wiring' in the human species.

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