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1. Introduction

There is a consensus in linguistics that there is a continuum of styles between the extremes of 'typical written language' and 'typical spoken language'. However, when it comes to characterizing the extremes or poles of this continuum there is very little agreement. This is also evident from the way in which clause combining in speech and writing has been described.

Chafe (1982, 1987, 1988) describes the way 'intonation units' are combined into sentences in speech in terms of loose, paratactic chains, syntactically simple, with false starts and incomplete sentences. Written language on the other hand 'tends to have "an integrated quality" which contrasts with the fragmented quality of spoken language' (Chafe 1982: 32), with syntactically more complex ways of clause combining (subordination, nominalization).

Distinguishing between 'hypotaxis' (dependency without embedding) and 'subordination' (dependency with embedding), Halliday (1987) reaches radically different conclusions: clause combining in speech is more intricate than in writing. Unconscious, spontaneous spoken language consists of orderly and complex 'syntagms' in which relatively large numbers of clauses are paratactically and hypotactically integrated to form smooth sentences.

Chafe (1987, 1988) identifies processing constraints of speech production and perception as a crucial factor behind the relatively low degree of syntactic integration of clauses within sentences in speech. If such constraints of the speech process indeed do induce the characteristics of clause combining formulated by Chafe, then purely oral languages should show these characteristics to a high degree.

This article discusses evidence from (some) oral languages of New Guinea pertaining to the debate about the nature of clause combining in spoken and written language. It is argued:

- that 'clause chaining' in the oral languages of New Guinea yields orderly units (sentences or, in some languages, 'sentential paragraphs') with a high degree of syntactic integration in which morpho-syntactically complex systems like switch-reference function as 'elaborate linking devices' between clauses;
- that the products of clause chaining in these languages show important similarities with the intricate 'clause complexes' or 'syntagms' found by Halliday (1987) in spoken English, *inter alia* in the frequently hypotactic nature of interclausal

relations in speech;

- that subordination does occur in the oral languages of New Guinea but that there is a tendency in these languages, which are in great majority verb-final, either to limit embedding to the P1 position which is insensitive to LIPOC pressure (Dik 1989), or to replace subordinate constructions by quotative and medial constructions to prevent shifts of 'heavy' terms to the postfield (Dik 1989; De Vries 1990);

- that spoken discourse of the purely oral languages of New Guinea does not have the properties predicted by Chafe's theory based on presumably universal constraints on the speech process. There is no doubt that processing constraints are a factor shaping the form of spoken discourse in Papuan languages but the information management strategies of spoken discourse aimed at local thematic coherence and regulation of the information flow can be shown to lead to grammatical processes like tail-head linkage and generic verb linkage, elaborate linking devices creating integration, coherence and order in spoken Papuan discourse.

The parameters which Lehmann (1988) has formulated to characterize interclausal relations will be used in this article as criteria for 'syntactic integration'. 'Subordination' is used when a predication depends on another (higher) predication and functions as a term in that higher predication. 'Hypotaxis' is used when a predication depends on another predication but is not a constituent of that dominating predication. 'Parataxis' is used when clauses of equal status are coordinated.

First the descriptions by Chafe and Halliday of clause combining in speech and writing are presented in the framework of their views on the differences between spoken and written language. Secondly, clause combining in the oral languages of New Guinea is characterised. Finally, the implications from the evidence of these oral languages for the debate on the nature of clause combining in spoken and written language are formulated.

2. The debate: Halliday versus Chafe

There are spoken forms of discourse that have many characteristics of written language, there are written forms of discourse with a lot of oral features, and there are intermediate forms. Chafe and Halliday agree on the existence of a continuum of discourse forms between the extremes of 'typical written discourse' and 'typical spoken discourse'. Spoken discourse and written discourse are not unified phenomena. What is the critical factor that determines the difference between the extremes of the continuum?

For Halliday (1987: 66) the critical factor is 'consciousness': 'The more natural, un-self-monitored the discourse, the more intricate the grammatical patterns that can be woven...; spoken and written discourse are the outward forms that are typically associated with the critical

variable, which is that of consciousness.' In spontaneous, un-self-monitored speech Halliday (1987) finds more intricate patterns of clause combining than in writing.

It should be noted that Halliday (1987) does not claim that 'typical spoken discourse' is more complex than 'typical written discourse' in all regards. For both Halliday (1987) and Chafe and Danielewicz (1987) spoken discourse has a less complex nominal syntax and is lexically simpler¹ than written discourse.

For Chafe (Chafe and Danielewicz 1987, Chafe 1988) processing constraints are the critical factor causing the differences between spoken and written discourse. This also becomes evident when clause combining in speech and writing is discussed by Chafe and Danielewicz (1987: 103): 'In other words, there is a strong tendency for casual speakers to produce simple sequences of coordinated clauses, avoiding the more elaborate interclausal relations found in writing. Elaborate syntax evidently requires more processing effort than speakers ordinarily devote to it.'

Halliday (1987) rejects what he calls 'the myth of structureless speech'; this myth is based on data that are not representative and on a presentation of transcribed speech in which the fundamental orderliness of spontaneous speech is obscured. Also the use of grammatical models based on written language to describe speech causes distortion.

According to Halliday (1987), a grammatical model that does justice to the intricacy of clause combining in spoken language should distinguish the interclausal relations of parataxis, hypotaxis and subordination. In the case of parataxis, two independent clauses of equal status are coordinated, the first clause being the initiating and the second the continuing clause. In the case of subordination a dependent clause is integrated as a nominal constituent in a higher clause. In the case of hypotaxis there is also a dependency relation between a dependent and a dominating clause but the dependent clause is not a part of the dominating clause (Halliday 1985).

Halliday (1987) presents clause complexes like (1) as typical examples of the 'syntagms' found in un-self-monitored spontaneous speech. In such syntagms a relatively large number of clauses are smoothly integrated by means of both parataxis and hypotaxis:

¹Halliday (1987) uses the notion lexical density. Lexical density is the proportion of the number of content words and the total number of words of a text. Spoken language has a lower lexical density, according to Halliday (1987). Chafe and Danielewicz (1987) speak about lexical simplicity in terms of lexical variety. Spoken language tends to have less lexical variety than written language.

(1) *I had to wait, I had to wait till it was born and till it got to about eight or ten weeks of age, then I bought my first dachshund, a black-and-tan bitch puppy, as they told me I should have bought a bitch puppy to start off with, because if she wasn't a hundred percent good I could choose a top champion dog to mate her to, and then produce something that was good, which would be in my own kennel prefix.*

Halliday (1987) analyses (1) in terms of 'systemic grammar' as one clause complex of 13 clauses with 8 hypotactic and 5 paratactic linkages with a number of markers (like *till, because, then, as, to*) expressing interclausal relations. Halliday (1987) mentions the following characteristics of the syntagms of spontaneous spoken English:

- many clauses per syntagm
- mixed paratactic and hypotactic organisation
- low lexical density
- simple nominal syntax
- process oriented; 'verby'
- dynamic thematic organisation:

'the complexity of spoken language is in its flow, the dynamic mobility whereby each figure provides a context for the next one, not only defining its point of departure but also setting the conventions by reference to which it is to be interpreted' (Halliday 1987: 66-67).

Chafe (1988) proposes a segmentation of spoken discourse into 'intonation units'. These 'intonation units' are spurts of vocalization with a coherent intonation contour, normally separated by pauses. These units correspond, depending on speaker and discourse type, in between 60% and 80% of the cases with syntactic clauses. The intonation units contain the information on which the speaker 'is focussing his or her consciousness at a particular moment' (Chafe 1988: 2).

Speakers, in opposition to writers, do not have sufficient time to make the connections between the intonation units explicit in an elaborate fashion. That is why they tend to rely on a simple chaining technique to link intonation units paratactically without using elaborate linking devices. According to Chafe (1987: 103), speakers are often sloppy when chaining intonation units, with false starts and incomplete sentences. The example (2) is given by Chafe and Danielewicz (1987: 104) as typical of spoken discourse:

- (2) ...And she said...um-...she said...um-...I got
my degree at Harvard,
..and one of the things we had to do,
...was- to read,
...eight hours a day.
..For four years.
...And I read everything.
..She said.
And t..to graduate from Harvard,

...one of the things we had to do was type.
...A paragraph.
...We had to...we had to date it,
.. we had t..tell who wrote it,
...and she said not only..do I know
...she said I'm I'm trained to detect...minute..switches
in style.

Sentences in written discourse 'are better planned than this, giving evidence of the time and effort that went into their construction' (Chafe and Danielewicz 1987: 104).

It is clear that the views of Halliday and Chafe on orality and complexity are contradictory. Horowitz (1987: 149) remarks: 'Halliday persuasively argues that it is mistaken to assume speech is less complex structurally than writing. Rather, he argues that they are qualitatively different forms of language. However, other researchers proposit that written language is more complex structurally (Chafe, this volume; Ochs, 1979). However, only a limited corpus of speech or writing to permit the necessary comparisons has been collected. Acquisition of a rich corpus of spoken and written language, and of a variety of registers, is needed and will provide challenging data for future research comparisons.'

Mackenzie (1989: 18) has pointed out that there are clear parallels between the structures found in transcribed texts of oral languages and the structures in spoken discourses of languages that are written. Given the need for more empirical evidence in the debate on spoken and written discourse, we now turn to clause combining patterns in some oral languages of New Guinea.

3. Clause combining in oral languages of New Guinea

On the island of New Guinea both Austronesian and Papuan languages are spoken. The Papuan languages number about 750. If the Trans-New Guinea Phylum (McElhanon and Voorhoeve 1970, McElhanon, Voorhoeve and Wurm 1975) is a true genetic grouping (see Foley (1986: 13-14) for some discussion), then 500 of these 750 have one ancestral language. At the present state of our knowledge the term Papuan cannot be taken as a genetic term but as a term denoting those languages of New Guinea that do not belong to the Austronesian family.

In this section some patterns of clause combining that are fairly widespread among the Papuan languages of New Guinea, especially within the Trans-New Guinea Phylum, are illustrated with data from Wambon and Kombai.

Wambon and Kombai belong to the Awyu-Ndumut language family (cf. Voorhoeve 1975: 27). This family is spoken in the eastern part of southern Irian Jaya (Indonesia) and belongs to the Trans-New Guinea Phylum of Papuan languages (cf. Silzer and Heikkinen 1991).

The majority of Papuan languages on New Guinea are still predominantly oral, although literacy programs all over the island are changing that picture rapidly. The northern Awyu languages (Wambon, Kombai, Korowai), spoken in the very isola-

ted swampy rainforests of the southern Irian Jaya Upper-Digul area, are purely oral.² When I first entered the Korowai area, most Korowai people did not even know that writing existed. The Kombai and Wambon also had no writing but most of them knew that the Indonesian language could be written. Meta-language concepts that come with the segmentation of writing (such as 'word' and 'letter') are absent in the lexicons of Wambon, Kombai and Korowai. Of course, these purely oral languages have meta-language concepts but these always refer to what one can do with language. For example, the Kombai concept *lu* may mean: 'message, question, quarrel, argument, story, sermon, case, affair, voice (also of birds)'. After I had introduced a spelling for Kombai and the language started being written, *lu* came to mean 'word' in the literate sense.

It is especially the patterns of 'clause chaining' and 'subordination' found in many oral Papuan languages that are relevant for the debate on the nature of clause combining in speech and writing, and to these patterns we turn now.

'Clause chaining' is a term used in the study of Papuan languages for a syntactic process which chains verbal clauses into often long sentences (see Longacre (1972) for a general discussion of clause chaining in New Guinea languages). Such chains sometimes form paragraph-like sentences ('sentential paragraphs', see De Vries 1989) as in Kombai and Wambon narratives but in other languages 'medial-final chains may be interpreted as sentence units which build quite regularly into paragraphs just as in an Indo-European language. This is true, for example, in Manambu, Golin, Gahuku, and Yessan-Mayo.' (Longacre 1972: 40). The final verb of the chain is the main verb; those final verbs have a different form from the non-final verb (medial verbs) of the chain. Medial verbs cannot express, or express in a more limited fashion, morphological categories like person, number, tense, mood and aspect. Final verbs express those categories and the preceding medial verb forms depend on the final verb for their person, number, mood, tense and aspect interpretation. On the other hand medial verbs tend to express two morphological categories that final verbs cannot express: switch-reference (next clause has Same Subject versus next clause has Different Subject being the main distinction) and temporality (simultaneity versus sequence being the main distinction).

Medial clauses depend on the final clause but they are not embedded in the final clause and they are not part of that clause. For embedding of clauses there are other mechanisms (like *relational headnoun insertion* in Kombai) that will be discussed below.

The sentence-boundaries of the chains are usually well-marked: by intonation-patterns, by linkage phenomena like

²I did almost 8 years' fieldwork in that area between 1982 and 1991. For Wambon: see De Vries and De Vries-Wiersma 1992, for Kombai: see De Vries 1989, 1992 (forthcoming), for Korowai: see van Enk and de Vries 1992.

*tail-head linkage*³ and *generic verb linkage* and by changes of verb form⁴. Furthermore, the chains tend to have a clear internal structure, formulated by De Vries (1989) for Kombai as follows:

(3) +/- FRAME +/- MEDIAL CHAIN + FINAL CLAUSE

The first position in the 'clause chain' is for Frame constituents with the pragmatic function Frame (De Vries 1989), i.e. constituents that present information which

(i) serves as frame (or setting or theme) for the rest of the chain and

(ii) at the same time relates the present chain to the preceding context.

In Kombai and Wambon narratives the Frame position is often filled by a linkage construction, most often tail-head linkage. E.g. in (5) the Frame is *ndako komalo* 'and it died'; the final clause of (4), *ndako komatmbo*(=tail), is repeated in medial form as the first clause of (5)(=head). The Final Clause of (5) is *lapndavelevambo* 'we arrived'. The chain of clauses in between the Frame and the Final Clause in (5) is the Medial Chain.

³In tail-head linkage, two sentences or sentential paragraphs are linked by recapitulation of the assertion of the Final Clause of the preceding sentential paragraph (=tail) in the first clause of the next sentential paragraph (=head). The term tail-head linkage (t-h linkage) is from Thurman (1975). One of the earlier sources on t-h linkage and clause chaining (in the Ok language Telefol) is Healy (1966). T-h linkage refers to a phenomenon which is 'extremely common in Papuan languages, especially in narrative texts. Such texts are littered with dozens of examples of this usage' (Foley 1986: 201). Longacre (1972: 45) has described the phenomenon as follows: 'Commonly the function of the first base in such chaining units is to refer back to the last base of the previous chain. If the chain structures as a paragraph, then such back-reference or recapitulation joins paragraph to paragraph. If the chain structures as a sentence, then the first base of the sentence refers back to or recapitulates the last base of the previous sentence...'

⁴ The relation between verb types and sentence/paragraph boundaries in chains also varies from language to language. For example in chains of Telefol, an Ok language, finite dependent verb forms mark the end of the sentence and independent verbs mark the end of the paragraph (Healy 1966).

(4)

Aliv-e nukh-e ilo-ko-n-o lakhop
yesterday-conn I-conn go.down-go-tr-SS.sim garden

ko-kndev-o odo jandit wamip-ka oy-e
go-1sg.pres-coord and road inside-in pig-conn

khetak-mbel-o tambe-lev-o
see-SS.seq-coord shoot-1sg.non-fut.DS-coord

liki-lap-elo
break-take-SS.seq.coord

ka-l-o kilim-ke-kndev-o
go-3sg.non-fut.DS-coord pursue-supp-1sg.pres-coord

khetka-lepo-n-e ne la-tmbo-nggelo odo
see-1sg.past-tr-sub close (?) lie-3sg.past-and and

tamjo-p-ni-mo-kndev-o matulo
shoot-1sg-intent-supp-1sg.pres-coord go.up.SS

topke-ka-l-o odo nu-khuv-a
run-go-3sg.non-fut.DS-coord and I-also-conn

topke-ko-n-o
run-go-tr-SS.sim

enop palip ka-lev-o oi nombone
tree top go-1sg.non-fut.DS-coord pig Topic

ko tembet-ke-l-o odo mulo
go.SS not.be-supp-3sg.non-fut.DS-coord and go.down.SS

kilim-ke-kndev-o khetakha-lepo-n-e ko
pursue-supp-1sg.pres-coord see-1sg.past-tr-sub there

la-tmbo-nggelo odo ndomanop-mo uto
lie-3sg.past-and and slow-supp.SS go.in.SS

tamja-lev-o matulo nda-ka-p
shoot-1sg.non-fut.DS-coord go.up.SS come-go-1sg.Intent

nde-lo nggom-e khala-lo kopo-n-e
say-SS blood-conn put.down-SS there-tr-conn

asalop-ke-lo uto
much-supp-SS go.in.SS

lelo-p nde-lo mitmbululop-ka
stand.up-1sg.Intent say-SS shudders-with

mata-lo ndako koma-tmbo
go.down-SS next die-3sg.past

are never reduced to grammatical operators.

The last two parameters are interlacing and explicitness of linking. Lehmann (1988: 204) subsumes these two under the heading Isolation versus Linkage.

Interlacing refers to the degree of semantic integration of the two clauses. Its syntactic correlate is the non-specification of the common elements in one of the clauses. Medial clauses have a high degree of interlacing with the final clause because they depend on the final clause for the interpretation of their tense, mood, aspect, person and number.

Explicitness of linking refers to the degree to which interclausal relations are expressed explicitly. Lehmann (1988: 213) places nonfinite verb forms very close to the pole of asyndesis but medial verbs, although they are in majority nonfinite, express the interclausal relations of switch-reference and temporality very explicitly.

It will be clear by now why students of Papuan languages have used terms like coordinate-dependent (Foley 1986) and co-subordinate (Olson 1981) to characterise interclausal relations in clause chains: the traditional dichotomy of coordination and subordination breaks down on the facts of Papuan languages. A high degree of dependency combined with non-embedding is the best characterization of medial clause linkage.

The oral languages of New Guinea also have forms of clause combining in which dependency combines with embedding in a higher clause. Compare the following examples from Kombai (De Vries 1989):

(8)

Uni	berino-n-o		ro		na-büwogo gamo
Uni	dur.make.3pl.NF-tr-conn		thing		my-parent join.SS

rino.

make.3pl.NF

'When they built Uni, my parents also joined the work.'

(9)

Lu	badiya-n-o		wamü		kho mofenadi
word	dur.give.3sg.NF-tr-conn		middle		man a.certain

luwa: '....'

say.3sg.NF

'When he was teaching/ While he was teaching, a man said:
'....'

(10)

Gana	gu	fali	kha	ro
bushknife	you (sg)	carry.SS	go.2sg.NF	thing

na-gana-y-a.

my-bushknife-tr-pred

'The bushknife that you took away, is my bushknife.'

Examples (8) and (9) show adverbial clauses and (10) a relative clause. Notice that in Kombai, as in many other Papuan languages, adverbial and relative clauses are formally very similar. The subordinate clause in Kombai, whether relative or adverbial, is a modifier in a modifier-headnoun structure. The nouns that form the heads of the modifier-headnoun structures belong to a small closed class of what are called relational headnouns in De Vries (1989). *Ro* 'thing' and *wamü* 'middle' in (8)-(10) are examples of such relational headnouns which are used to serve grammatical purposes. Since the subordinate clauses in (8)-(10) function as terms in a higher predication, they receive the preferred form for terms in Kombai, with a noun as head. This process is called relational headnoun insertion in De Vries 1989.

Subordinate clauses in Kombai must have final verb forms as the verbal head of the clause. Medial verbs cannot function as heads of subordinate clauses.

Although subordinate clauses (like (8)-(10)) occur frequently in oral languages like Kombai and Wambon, there are restrictions on their distribution. There is a tendency to either limit subordinate clauses to the clause-initial P1 position or replace them by medial and quotative constructions. According to De Vries 1990, this tendency is the result of the tension between pre-verbal complexity and verb-finality in S O V languages.

Subordinate clauses in the prefield are 'heavy' terms which are under pressure to shift to the postverbal area (cf. the Prefield Complexity Principle of Dik 1989: 350). However, in verb final languages, and especially in strictly verb final languages like Kombai, heavy term shifts to the postfield violate the functional pattern (P1 S O V) of the clause. For subordinate clauses in P1, which position is insensitive to complexity pressures (Dik 1978, Dik 1989), there is no problem. For subordinate clauses in other clause positions, there are two possibilities, reduction of the internal complexity of the subordinate clause by strong nominalization or replacement by medial or quotative constructions. It is this latter strategy (the use of quotative and medial constructions) which is very much preferred in Kombai and other Papuan languages, although the reduction strategy is also used in some cases (De Vries 1990).

The following examples illustrate the use of quotative constructions:

(11)

Camate luwa kho yademo-nane-ne
head say.3sg.NF person meet-imp.pl-quote.sg
'The district-head wants the people to come together.'

(12)

Nu wamedefe-ne luwa
I come.1sg.F-quote.sg say.3sg.NF
'He promised to come.'

(13)

Yarimo kho fera-f-e-ne
garden go.SS see-lsg.Intent-conn-quote.sg
'He wants to see his garden.'

(14)

Yafo-fina wa-khumolei-neno
their-thought com-die.3sg.NF-quote.pl
'They think he is dead.'

Quotative constructions in Papuan languages are used to express the clausal second arguments of not only speech act verbs but also of verbs in the semantic domains of intention, desire, emotion and cognition (Deibler 1971, Reesink 1987, De Vries 1990, Foley 1986). When a quotative construction is used, the complex clause is no longer an embedded constituent within the higher clause but at the same time the dependency relation is expressed in the relation between the quotation-margin and the quotation-clause.

The same goal (dependency without embedding) is reached in a different way by the use of medial (co-subordinate) clauses, illustrated by (15)-(16):

(15) Kho mofene fina-geno-n-a
person that think-3pl.NF-tr-DS.and

pesawa meda-ne-madü
plane come-inf.F-neg
'Those people think that the plane will not come.'

(16) Nu fera-def-a khe bo-me
I see-lsg.NF-DS.and he dur-come.3sg.NF
'I saw him come.'

Example (16) could be paraphrased as 'I saw and he came'. Such a rendering succeeds in indicating the non-embedded nature of the clause linkage in (16) but fails to express the dependency relation between the medial clause *nu feradefa* and the final clause *khe bome*. The medial clause cannot occur on its own; the suffix *-a* on *feradefa* in (16) expresses switch-reference (Different Subject) and non-embedding.

Above we described medial-final relations in terms of the parameters of Lehmann (1988). The findings there were summarized under the heading 'dependency without embedding'. Now we have added an explanatory element to this description: the use of medial and quotative forms, both of which combine dependency with non-embedding, is the result of two conflicting tendencies, verb finality and pre-verbal complexity.

We also saw that the element 'dependency without embedding' also figures prominently in Halliday's description of spoken English. And this brings us to the implications of the data from oral languages for the

debate on the nature of spoken and written forms of discourse.

4. *Implications for the debate*

Regarding the relation between orality, complexity and subordination, the data from oral languages like Kombai and Wambon show that subordination (embedded dependent clauses) does occur in oral languages but that there are restrictions on the distribution of subordinate clauses which can be explained in terms of the tension between the verb-final functional pattern and the Prefield Complexity Principle. There is no evidence for a simple direct relation between orality and subordination.

One possible relation between orality, complexity and subordination might be that the pressure on 'heavy' clausal terms in the prefield to shift to the postverbal area is greater in speech than in writing due to constraints on the speech process but I do not know of any psycholinguistic support for this hypothesis.

Regarding clause-chaining processes in oral languages of New Guinea, the data from Kombai and Wambon show that there are important and striking similarities between the 'clause complexes' or 'syntagms' found by Halliday (1987) in spoken English and the 'clause chains' found in oral Papuan languages.

Halliday (1987) describes the 'syntagms' of spontaneous, un-self-monitored spoken English in the following terms:

- many clauses per syntagm
- mixed paratactic and hypotactic organisation
- low lexical density
- simple nominal syntax
- process oriented; 'verby'
- dynamic thematic organisation:

'the complexity of spoken language is in its flow, the dynamic mobility whereby each figure provides a context for the next one, not only defining its point of departure but also setting the conventions by reference to which it is to be interpreted' (Halliday 1987; 66-67).

Two of the features mentioned by Halliday (1987) are also mentioned by Chafe and Danielewicz (1987) as characteristics of spoken English: relative lexical simplicity and simple nominal syntax. The former is only relevant in languages which are both spoken and written. Simple nominal syntax is certainly a tendency in many oral Papuan languages but it is an unanswered empirical question whether oral languages in general always have a simple nominal syntax.

The other features mentioned by Halliday (1987) can

easily be detected in the data on Kombai, Wambon and other oral Papuan languages.

Many clauses per 'clause chain' is a feature often noticed by students of Papuan languages. Example (4) from Wambon with its 32 clauses chained in one sentential paragraph is not exceptional. The very notion of 'sentential paragraph' is an effort to name the paragraph-length sentences which especially occur in narratives. The 'verbiness' of clause chains also has struck students of Papuan languages many times. In example (4) from Wambon we have a sentential paragraph with 55 words, 34 of which are verbs. In (5) there are 21 words and 13 verbs.⁵

Halliday (1987) has demonstrated the importance of hypotaxis for clause linkage in spoken English. Applying the criteria of Lehmann (1988) to assess the nature of clause linkage in clause chains of Kombai and Wambon, we found that hypotactic relations are also of crucial importance in these oral languages. The hypotactic nature of medial-final clause relations has been observed by many students of Papuan languages, although they have used other terms to denote the combination of dependency and non-embedding.

It is important to notice that features like verbiness, many clauses per sentence and the hypotactic nature of clause linkage in clause chains have been observed by many students of Papuan languages completely independently of the orality-literacy debate.

The last feature of spoken English mentioned by Halliday (1987: 66) has to do with the dynamics of the thematic organisation of spoken discourse. Admittedly, the statements made by Halliday (1987: 66) are not very specific. Yet I think that Halliday (1987) touches here on something essential which needs further study in order to understand the nature of spoken discourse. The flow of information in spoken discourse implies information management strategies on the part of the speaker which take into account the fact that listeners are not readers. Readers can read back what was written earlier without being bothered by new information reaching their ears. The fact that the listener is processing what has just been said, does not deter the speaker from continuing speaking. But as he speaks on the speaker uses two different kinds of strategies of information management to help the listener; in the first place, the speaker uses what he has just said as the setting for what is to come, so that strategies to create local thematic coherence have a special significance in spoken discourse processes. In the second place, the speaker manages the information-rate by slowing it down at certain places.

⁵I have also included in the count as verbs relational verbs like *ndako* which have been glossed as 'and' and 'next' to capture their discourse function (cf. De Vries 1989 for relational verbs).

the flow of information is slowed down in between two sentential paragraphs. This processing function manifests itself very clearly in pause-phenomena and intonation-contours associated with tail-head linkage. The Frame clause of the tail-head linkage is pronounced much slower than the Medial Chain and the Final Clause; at the end of the Frame clause, there is a rising intonation, contrasting with the falling intonation of the preceding Final Clause. Between the Frame and the Medial Chain we often find pauses and hesitation-phenomena.

Van Kleeff (1988: 155) correctly points out that the use of t-h linkage differs from language to language. Nevertheless, the functions of t-h linkage in Kombai (framing, management of information flow) might quite possibly be relevant in some form in many Papuan languages. Van Kleeff (1988: 152) observes a relation between the use of tail-head linkage and management of the information flow in Siroi, a Papuan language of the Kabenau family of Papua New Guinea. T-h linkage in Siroi is a sentence-connecting device mainly used within thematic paragraphs in narratives to highlight the main events (expressed by the final verbs in this language). This t-h recapitulation of the final verbs is done 'very consistently by most narrators throughout the whole narrative with the exception of the climax of the story when usually there is a lot of direct speech and the information flow is extremely high. When that is the case, Tail-Head linkage is sometimes not used lest it would stop the flow of events' (Van Kleeff 1988: 152). Although the (optional) absence of t-h linkage in the climax of the Siroi narrative may be a special Siroi phenomenon, the reason for this absence points to the general function of t-h linkage in managing the information flow.

If we compare descriptions of 'clause chaining' in oral Papuan languages with the description by Chafe (1987) of 'chaining' in spoken English, the following points need mentioning.

The simple and sloppy paratactic chaining found by Chafe in spoken English is completely absent in the clause chains of oral Papuan languages like Wambon and Kombai. Instead, we find highly integrated and ordered sentences or 'sentential paragraphs'; we have described the type of clause linkage found in these chains using parameters from Lehmann (1988), and in terms of those criteria medial clause linkage does not emerge as a paratactic type of linkage but as hypotactic type which combines a high degree of morpho-syntactic and semantic dependence with non-embedding. The complex verb systems of oral Papuan languages provide speakers with elaborate linking devices, enabling them to express interclausal relations of switch-reference and temporality. Reasoning in terms of processing constraints, Chafe (1988: 23) writes: 'Speakers, as opposed to writers, have little time to devote to making the linkages between intonation units explicit. Verbalizing ideas on the run, they are too busy

expressing them as conversationally successful intonation units to add the time necessary to elaborate the connections between them'. It is clear that spoken discourse of the purely oral languages of New Guinea does not have the properties predicted by Chafe's theory based on presumably universal constraints of the speech process. There is no doubt that processing constraints are a factor shaping the form of spoken discourse but the information management strategies of spoken discourse aimed at local thematic coherence and regulation of the information flow can be shown to lead to grammatical processes like tail-head linkage, an elaborate linking device creating integration, coherence and order in spoken Papuan discourse.

The sloppiness ascribed by Chafe and Danielewicz (1987) to spoken English has been argued by Halliday (1987) to be the result of bad methodology. Halliday (1987) points out that written language would seem no less sloppy if one retained all the corrections and reformulations. In the transcription of speech linguists include false starts and incomplete sentences and then go on to compare those transcriptions with written texts which are the endproduct of a similar process of corrections and hesitations. Furthermore, Halliday (1987) suspects that often the speech of academics during conferences and seminars has been used as a source of data on speech. Such data are not representative for spontaneous, un-self-monitored speech.

Orality does not lead to lesser complexity. Orality may lead to shifts in complexity. One could say that the load of expressing interclausal relations is carried by the complex verb morphology of Papuan languages. Thus one may argue that the highly complex verb systems of the oral languages of New Guinea represent a shift in complexity from syntax to morphology but it is debatable whether the syntax of clause chains like (4) and (5) can be called 'simple'.

An important difference between oral languages and languages that are both written and spoken, is that the latter will develop special functions for speech and writing. Such functional specialization may have effects on the form of spoken and written discourse. In oral languages speech does all the jobs. Since there are many similarities between 'clause complexes' in spoken English and 'clause chains' in oral languages, one can say that at least in the domain of clause combining the fact that English is both spoken and written and Kombai only spoken has not differentiated spoken English from spoken Kombai or Wambon.

5. Summary

Chafe (1987, 1988) and Halliday (1987) reach opposite conclusions about the way clauses are combined into sentences in speech and writing.

In Chafe's view, speakers are forced by processing constraints to rely on a simple chaining technique which loosely and often sloppily connects speech fragments (intonation units) in a paratactic fashion.

In Halliday's view, spontaneous, un-self-monitored speakers produce orderly and intricate 'clause complexes' of mixed paratactic and hypotactic nature. Speech has its own type of complexity: 'the complexity of spoken language is in its flow, the dynamic mobility whereby each figure provides a context for the next one, not only defining its point of departure but also setting the conventions by reference to which it is to be interpreted' (Halliday 1987: 66-67).

To fuel this debate with new evidence, I have presented data from two oral languages of New Guinea, Wambon and Kombai. These data concerned subordination, clause chaining and tail-head linkage.

Subordination is a regular syntactic process in the oral languages of New Guinea. Adverbial and relative clauses tend to be formally very similar. In Kombai subordinate clauses are expressed as modifiers in a modifier-headnoun structure, the preferred form for terms. Subordinate clauses are 'heavy' terms, complex constituents. This explains why there is a tendency for them to either occur in the P1 position or be replaced by quotative and medial forms. Quotative and medial forms have in common that they give the complex constituent a non-embedded status while still expressing the dependency relation between the dominating clause and the quotation-clause or the medial clause.

Clause chaining in Wambon and Kombai yields orderly and integrated sentential paragraphs in which hypotactic clause linkage dominates and in which complex medial verb morphology functions as an elaborate linking device. The clause chains of Wambon, Kombai and many other oral Papuan languages look very much like the 'clause complexes' of spoken English described by Halliday (1987): many clauses per sentence, 'verby' (process-oriented), the importance of hypotactic linkage, simple nominal syntax, the dynamics of thematic organization.

This last aspect, the dynamics of thematic organization in speech, refers to two things: first, the need for speakers to present new information in such a way that the listeners can easily connect the new information with the preceding context and with the organization of the discourse as a whole. It is crucial that the listener should easily integrate new information with the given since the speaker continues speaking while the listener is processing what has just been said. And secondly, the speaker will regulate the information flow in such a way that the listener has the time to integrate the new and

the given information. These processing constraints have been grammaticalised in many oral Papuan languages in the form of tail-head linkage constructions. In tail-head linkage the Final Clause of the preceding chain is recapitulated in the first clause, the Frame, of the new chain. Tail-head linkage causes the information flow to slow down temporarily, linking the new chain to the preceding one and inserting the information of the new chain in the frame of the information from the preceding chain.

The similarities between the clause complexes of spoken English and the clause chains of oral Papuan languages confirm the idea of Haiman and Thompson (1988: x) that the notion 'clause chaining languages' is not a valid typological category. Clause chaining in the sense of connecting a relatively large number of verbal clauses into paragraph-like sentences in which hypotaxis is a major source of syntactic integration, rather could be a universal characteristic of speech as opposed to writing.

If the evidence from oral languages of New Guinea given in this article is accepted as relevant to the debate about clause combining in speech and writing, it will be clear that this evidence supports the analysis of Halliday (1987) and provides counterexamples against the analysis of Chafe and Danielewicz (1987).

6. References

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7. Abbreviations

1	first person
2	second person
3	third person
adj	adjective
com	completive
conn	connective
coord	coordinator
DS	Different Subject (switch-reference)
dur	durative
F	Future
imp	imperative
inf	infinitive
intent	intentional
NF	Non-Future
non-fut	Non-Future
pl	plural
pred	predicative
pres	Present tense
quote	quotation-marker
seq	sequence (temporality)
sg	singular
sim	simultaneous (temporality)
SS	Same Subject (switch-reference)
sub	subordinator
supp	supportverb
tr	transitional sound