

# THE LINGUISTIC RELATIONSHIPS OF SPOKEN AND WRITTEN NUKULAEALAE REGISTERS

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This study is an investigation of the structural relationships between spoken and written Nukulaelae Tuvaluan, a Polynesian language spoken in a restrictedly literate society in the Central Pacific. The results of a factor analysis of the frequency of co-occurrence of 42 linguistic features across a computerized corpus of naturalistic spoken and written texts show that three dimensions must be identified to account for variation between Nukulaelae registers: attitudinal vs. authoritative discourse; informational vs. interactional focus; and rhetorical manipulation vs. structural complexity. Contrary to claims advanced for English and tacitly for speaking and writing in general, spoken Tuvaluan is not necessarily more involved, less complex, and more context-dependent than written Tuvaluan. These characteristics are a function of the communicative norms at play in each register. The structural relationships of spoken and written language must be explained in terms of the social context of orality and literacy in different literacy traditions, rather than the cognitive demands of language production and comprehension in the spoken and written modes.\*

## INTRODUCTION

1. The last few decades have witnessed a surge of interest in research on the similarities and differences between spoken language and written language. Discourse analysts and sociolinguists have compared the structural characteristics of 'typical' spoken texts and 'typical' written texts, and have maintained that writing is more detached (Chafe 1982, Chafe & Danielewicz 1987), syntactically more complex and more 'tightly' packaged (Kroll 1977, Olson 1977, Pawley & Syder 1983), less context-dependent but more elaborate (Halliday 1979, Kay 1977), and less interactive (Olson & Torrance 1981, Ong 1982) than speaking, among other things. The fact that writing is more detached than speaking, for example, is witnessed by the higher incidence, in written styles, of linguistic devices that communicate detachment, such as agentless passives and nominalizations. Spoken language, in contrast, exhibits many devices that communicate involvement (the opposite of detachment), like first- and second-person pronouns, emphatic particles, and direct quotes (Chafe & Danielewicz 1987, DeVito 1966, 1967, Redeker 1984). The greater detachment of written language is often posited to be a direct consequence of the physical distance

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between writers and their audiences (Olson 1977). Underlying this hypothesis is the claim that written communication is more rational and less emotional than communication in the oral mode, as further witnessed by the concern for deductive evidentiality in written language and for personal evidentiality in spoken language (Chafe 1986). Similarly, the alleged structural complexity of written language when compared to spoken language is attributed to the greater degree of preproduction planning (Ochs 1979) afforded by most contexts of written communication. (Research on spoken and written language is surveyed comprehensively in Chafe & Tannen 1987.)

To date, studies on spoken-written relationships have focused primarily on data from English and on spoken and written texts produced by the intellectual elite. Yet the results of these studies are frequently presented as representative of speaking and writing in general. In turn, researchers in other disciplines have taken the universality of these results for granted and used them in discussions of the effect of literacy across cultures and contexts (Goody 1987, Chapter 11, and Cicourel 1985, for example). The sociocultural bias that characterizes this research has prevented us from developing well-grounded hypotheses about how speaking and writing differ from each other cross-culturally and cross-socially (Akinnaso 1982, 1986). As a result, we do not have a framework to test the universality of the descriptive and explanatory generalizations proposed in the literature; this study of spoken and written language in a non-Western speech community is a first step in this direction.

A second problem with early approaches to variation across modes is that they often assumed that the spoken and written modes were monolithic entities in sociolinguistic variation, i.e. that variation between spoken language and written language overshadowed variation between different types of spoken language and different types of written language. Recently, various scholars, including Akinnaso (1982, 1986), Biber (1986, 1988), and Tannen (1982, 1985), have shown that the structural distinction between spoken and written English is not as clear as it had been assumed to be. Biber, in particular, demonstrates the complexity of the relationships between British English spoken and written texts and shows that a multidimensional model of variation is needed to describe them. Following these researchers, I treat the significance of the spoken-written distinction as an empirical question. I will show presently that, in the speech community in question, structural variation within the spoken and written modes is too great to warrant the categories 'spoken style' and 'written style'. In this paper, I will provide cross-linguistic evidence of the need for a multidimensional model of variation across text types.

Another assumption I question in this study is that the structural relationships between spoken and written language can be explained in terms of the physical and psychological characteristics of language production in the two modes. Indeed, the characteristics of communicative events in which speaking and writing are produced may vary significantly from one speech community to the next. Hence these activities must be understood in terms of their role in 'the complete context of the activity of the system of communication of the community as a whole' (Hymes 1974:25). Since there may be important dif-

ferences from one speech community to another in the functions of oral and literate communication, there may also be significant cross-linguistic differences in the form of language produced in the spoken and written modes. (Even within particular speech communities, important differences may be found from one social group to the other in terms of the role played by literacy and orality, as witnessed in Heath 1983.) I will show here that, in order to provide cross-linguistically valid explanations for the structural characteristics of spoken and written language, we must take into account how, why, where, and by whom the discourse is produced, and we must pay particular attention to the norms of communication at play in each context of production and to the sociocultural definition of the register in the range of communicative activities of the members of the society. By and large, researchers who have investigated spoken-written variation in English have ignored these sociolinguistic concerns in their quest for physical and cognitive explanations for the structural patterns they uncovered.

This paper summarizes the results of a large-scale study of spoken and written registers on Nukulaelae atoll, a speech community that differs radically in its uses and views of orality and literacy from societies whose literacy traditions have been the focus of researchers' attention to date. Nukulaelae is a small and isolated atoll of the Tuvalu group in the Central Pacific, to which literacy was introduced a century ago. Underlying this study are the following three questions: are there linguistic distinctions that characterize oral and written registers on Nukulaelae? Can the contextual characteristics of orality and literacy in the Nukulaelae situation account for these distinctions, as has been proposed for languages used in Western societies? What cross-linguistic generalizations may be made about the structural relationships between spoken and written language, if any?

To answer these questions, I collected a large corpus of spoken and written texts produced in a variety of social contexts on Nukulaelae. I conducted a macroscopic quantitative analysis of the distribution of key linguistic features across these texts, focusing in particular on features whose discourse function is the marking of (for example) detachment and involvement, context dependence, interactiveness, and other characteristics commonly attributed to the contrast between spoken and written registers.<sup>1</sup> The quantitative investigation involves the use of factor analysis, a multivariate statistical method that uncovers patterns of co-occurrence between features in the corpus. Its results indicate that the structural characteristics of each register do not depend on whether it is produced in the spoken or written mode. Rather, they are intimately linked to the communicative norms associated with each register. The

<sup>1</sup> The terms 'style', 'text type', 'register', and 'genre' are often used interchangeably in sociolinguistics to describe use-based varieties. REGISTER is used here to refer to a variety as defined by the characteristics of its context of production, e.g. participant structure, norms of communication, and modality (Besnier 1986b). STYLE (or text type) will be used to refer to a structural notion; a style is defined by the structural characteristics of texts. The two terms represent independent notions because texts produced in different settings may have similar structural characteristics and vice versa.

structural patterns found in this study do not support the view that spoken language is more involved, more interactive, and less complex than written language. These characteristics depend crucially on the type of spoken and written language. Complementing the quantitative analysis are (1) a qualitative analysis of the distribution of selected non-quantifiable features, the results of which are reported elsewhere (Besnier 1989a, b, c, d), and (2) an ethnographic investigation of the norms of communication at play in each register, which will be briefly summarized in the first part of the paper and used in subsequent sections to explain the patterns uncovered by the macroscopic quantitative analysis.

This paper develops as follows: §2 provides a brief overview of the context of orality and literacy on Nukulaelae, as well as information on the data base used in this study; the quantitative analysis of the structure of spoken and written language is then described in §§3-7; and finally, in §8, the results of this analysis are interpreted and the implications of this study evaluated.

#### SPOKEN AND WRITTEN LANGUAGE ON NUKULAE LAE

**2.1. THE SPEECH COMMUNITY.** Nukulaelae is inhabited by about 310 speakers of Tuvaluan, a Polynesian language. Its social structure is one of the least stratified of the Polynesian cultural area. Introduced to Nukulaelae in the second half of the last century by Samoan Christian missionaries, literacy developed with remarkably little outside influence; until very recently, the only reading material available was the Samoan translation of the Bible, and the only literate outsider that Nukulaelae islanders had any contact with was the resident Samoan pastor. Today, literacy is well ingrained in the range of communicative activities on the atoll. Indeed, as in many other Pacific societies (Huebner 1987), every member of the island community is functionally literate. However, literacy is produced for a relatively limited variety of purposes: corresponding with off-atoll relatives and friends, composing church sermons to be delivered orally, and recording a variety of practical details. Thus communicative contexts in which literacy plays a central role are frequent but not varied, and Nukulaelae Tuvaluan may be described as a situation of RESTRICTED LITERACY (this term is used here to refer to use-based restrictions on literacy practices, as opposed to the user-restricted literacy discussed in Goody 1977). As Street 1984 has argued, restricted literacy in various forms constitutes the norm in the functionally literate world; Nukulaelae is not unusual in this respect.

Most literacy activities were at first conducted in Samoan, another Polynesian language, to which Nukulaelae Tuvaluan is closely related and of which contemporary Nukulaelae islanders all have at least a passive knowledge. Today, standard Tuvaluan has almost entirely replaced Samoan as the language of literacy events (the only exception being the fact that the Samoan translation of the Old Testament is still read). Nukulaelae has not developed a tradition of print literacy, primarily because of economic limitations, and there are very few 'official' texts that involve continuous discourse. Since the 1960s, literacy instruction has taken place in the context of a primary school attended by most

children in the community, where emphasis is placed on repetition, rote memorization, and copying. Few attempts are made to teach children to write creatively. Literacy skills beyond pure mechanics are acquired by observation in noninstructional contexts, as is the case with all traditional skills in Nukulaelae society.

In contrast to the restricted range of written registers, there are many spoken styles on the atoll, many of which have clear-cut associations with specific settings. Casual conversations are conducted while cooking, binding fishing lures, or relaxing; speech-making characterizes many events of Nukulaelae social life, and oratorical skills are highly valued; and island politics are regulated in meetings of various sorts, in which talk as a mediating resource figures prominently. Following is a description of the various spoken registers used in this study.

**2.2. SPOKEN REGISTERS.** Spoken data were recorded in five different settings. The first body of spoken data consists of informal conversations that were private and casual gossip interactions involving men and women of all ages, typically set in cooking huts. Nukulaelae conversations typically occur in multiparty interactional contexts. Talk in conversational settings is highly negotiatory and heavily affective toward third parties, but very low in affect toward speaker and hearer, as I have described elsewhere (Besnier 1986a, 1989a). The data base includes a few dyadic conversations between intimates, although these are relatively infrequent on Nukulaelae:

- (1) *He aa? I au koo vaaivai eeloo toku alofa i ei, i au e alofa ua i te mea maa fia vau ki mea a faafine, kae hai peelaa iaa ia he tino o te fenua, nee? Peelaa. Kae heeai ei neana mea peelaa e vau mo ia. Kae muna mai, e llei ma kaa- kaahai e isi, e hai nee V, koo hano ei A i itaeeo ki ei. Kaa mea, kee vau peenei i tena mea, ka koo tuku ei kee hano au ki ei, koo itogi ei te avaa kaapa pulumakau maa ia moo hai tena moa, nee? Peelaa. I taatou lea nei heeai ne moa.*

Isn't that so? Because I am weak with empathy for her, I just feel empathy because she might want to come to women's [feasts], because she should be thought of as someone from this island, right? Like that. But she might have nothing to bring. She tells me that's all right, because if- if there is [something], V will prepare it for her, and A will take it to her in the morning. She'll come here, but it doesn't matter because I'll go and buy her a couple of cans of corned beef she can use instead of chicken, right? Like that. Because we don't have enough chicken.

The second set of spoken texts is from a political meeting (*fono*) of the Council of Elders, during which local political issues are discussed: island-internal conflicts, order maintenance, and community cohesion. Only older men who are representatives of kin units can participate in these meetings, during which talk is highly circumspect and negotiatory, and a high level of linguistic and nonlinguistic decorum is maintained. Following is an excerpt from this meeting:

- (2) *Ia, koo llei, fakafetai moo te taeao teenei, teenaa ne fai a ttoeaina teenaa moo sui o taatou, ottou fakamoemoega kau fakatasi e fakafetai ei taatou ki tena alofa....Ia, kae- peelaa eeloo mo faifaiga o fonotaga a taatou, kaati laa i taimi teenei kaati laa koo- koo faifai atu foki eeloo nee- nee maatou kae fakalogollogo taatou ki- ki mataaupu kolaa e faippati taatou ki ei i te- itou fono teenei.*

All right, good, thanks are due for this morning, as that old man has just said as the representative for all of us, it is the hope of all of us together that we be able to thank Him for his compassion....All right, and- as is usual in the conduct of our meeting, perhaps at this time perhaps we shall- shall go on doing the very thing we usually do, we shall listen to- to the topics we have to talk about in this meeting of ours.

Unlike Samoan village meetings (Duranti 1984) from which they are calqued, Nukulaelae political meetings are not divided into subsections, and the same register is used throughout.

The next body of spoken texts comprise maneapa speeches, which are delivered spontaneously by older men in the maneapa (community house) during feasts and dances, and addressed to the entire island. Maneapa speeches are often characterized by a jocular tone, which frequently alternates with an exhortative and moralistic tone:

- (3) *Ia, kae i te poo foki teenei au e tuu atu o mmoli atu te fakamaaloo mo te fakafetai lasi ki luga i te maalosi o te fenua, moo te faatele gali teelaa koo oti ne fakaasi nee koulua. Ia, kaafai teenaa ko te fiafia, io ka ne aa foki niisi mea teelaa e mafai o uulu mai? Teelaa laa, au e fakamolemole atu ki te mmalu o te maalosi o te fenua, seeai se mea e mafai manafai ne tino a taatou e titele vavevave, mmai kee nnofo tasi taatou i te koga e tasi, ko te maalosi teenaa.*

So, this evening, I am also standing up to send congratulations and thanks to the working sector of the island, for the beautiful dancing that you have shown us. So, if this is what is called happiness, what other kinds of things can we call by the same name? So, I am asking the working sector of the island, with all due respect, there is nothing that anyone can do if some of us run away from the community, come so that we can all stay together in one place, this is where we find strength.

Private-setting speeches are delivered in private homes on the occasion of family celebrations such as weddings and funeral wakes. Although similar in form to maneapa speeches, they differ markedly from them in several ways: turn-taking is less ritualized, framing statements are often left out, and so on. In short, they are characterized by looser co-occurrence restrictions than maneapa speeches, and are thus marked as less 'formal' (Irvine 1979):

- (4) *Ia, kae ko te lua o ana tausaga teenei, tena tausaga muamua ne fai loa nee ana tupuna i koo i Vaitupu. Ia, koo maafaufau aka oki au peelaa, i au e- e alofa i te mea koo mmai kkonei, a koo kaatoa tena*

*lua tausaga. Teelaa ne fakatoka aka ei ne moo mea inu fua moottou mmiti aka. Ia, e- pe ne maakkona taatou pe hee maakkona, maallie fakatasi eiloo taatou, moo mea kolaa koo tuku mai moo te aso o taatou teenei. Io, teenaa taku fakafetai, kae fakamaaloo atu moo te oko mai o koutou.*

So it is his second birthday now, his first birthday was celebrated by his grandparents over there on Vaitupu. So I thought that, because I- I felt empathy because they were coming here, and this is his second birthday. This is why just a little snack was prepared for us to sip on. So, whether we are satiated or not satiated, these were the few things that were bestowed for this day of ours. So here are my thanks and congratulations to you for your coming here.

The radio broadcast in my data is the first (and, to my knowledge, only) radio program recorded on Nukulaelae for national broadcast on Radio Tuvalu. A dozen middle-aged and older men participated in a discussion on a political topic. In form, the interaction during this program resembles political-meeting interactions, although it differs from them in that particularly strong opinions were voiced at this event, some of them marginally defamatory. This text is particularly interesting for its experimental nature:

(5) *Ko TM teenei e faipati atu, peelaa mo te polokalame teenei, tino kolaa e ttuu o ttuu. Koo oti ne kau filifiligina te muna eeloo teelaa e tau mo te tino teenei e tuu, ttino teelaa e ttuu o tuu. Ko te tino teelaa e maua nee ia te alofa, teenaa eeloa te mea. Kaafai e fia tuu a se tino, kee mafai nee ia o maua te muna teenei ko te alofa. Teelaa e alofa ki luga i tena fenua, e alofa ki Ttuvalu, e alofa ki tino gaallue katoa o te maaloo.*

This is TM speaking, like [on] this program, which people should stand for election. I have already chosen the very word that fits the person who stands for election, the person who should stand. The person who has empathy, this is the thing. If someone wants to stand, he should have what the word empathy denotes. Thus, he should have empathy for his atoll, empathy for Tuvalu, empathy for all the government workers.

The spoken registers analyzed in this study constitute a representative sample of the oral output of Nukulaelae islanders. The only major speech events not represented are Island Council meetings, which differ in a number of ways from meetings of the Council of Elders and which will be analyzed at a later date. Religious sermons delivered orally were not recorded because they do not differ significantly from their written versions, which will be described presently.

**2.3. WRITTEN REGISTERS.** The two written registers are personal letters and written religious sermons. The production of Nukulaelae letters is the most salient literacy practice on the atoll. Letters are exchanged principally with relatives on Tuvalu's capital (and never with strangers) and are written by a

broad cross-section of the atoll's population. The texts of Nukulaelae letters include phatic communion and are relatively poor in news content (Besnier 1989b). Letters are frequently used to regulate inter-kin exchanges, and are heavily affective toward the writer and the addressee:

- (6) *Fakafetai moo te avanoaga teenei koo mafai o sauttala atu kiasa koe, kae maaluga ttaavaeaga o te Atua auua tena alofa koo oola ei taatou katoa, fakafetai lasi....Ia, au e faittali atu kiasa koe kee vau koe o maloooloo i konei. Kee olo saale taaua o faaika. Ia, kaafai e vau koe, kee olo tasi taatou o faaggota. Kaafai e vau koe kee ttogi mai nee koe se fagu maalosi mottaa iinu saale i konei. Ia, au e fakamolemole atu kiasa koe, kaafai seaku mea koo ssee, fakamolemole fakamaagalo mai. Kae tuku fua laa, au e nofo toko tasi i konei.*

Thank you for this opportunity that enables me to chat with you, and God is praised highly for His love through which we all live, thank you....So, I am writing for you to come and take your holiday here. So that the two of us can go fishing. So, when you come, we shall all go fishing together. When you come do buy a bottle of liquor so that the two of us can drink here. So, I am asking you, if I have done/said something wrong, I ask for your forgiveness. But leave all this, I am staying here alone.

Finally, church sermons are texts written by church deacons for their own oral delivery during church services. Their content is often exhortative and accusatory, and thus violates the rules of circumspection found in other arenas of Nukulaelae public life (Besnier 1989a). Their primary role is the manipulation of information and abstract notions (e.g. God, goodness, virtue):

- (7) *Kae pei aka ki mea taaua o te maaina, taki fakallei eiloo taatou nee taatou, e peelaa eiloo mo taatou e nnofo i te ao. Saa fiafia vaallea, saa koonnaa, saa amio maasei, io me kaimanako ki te fia maumea, saa taua io me kaisanosano. Kae fakaeke ia koutou a te Aliko ko Ieesuu Keliso, me ko te fakagataaga foki teena o manakoga fakate-foitino.*

But wear the clothes of enlightenment, let us guide ourselves as if we lived in daylight. Don't get excited for no real reason, don't drink. Don't do bad things, or be greedy for wealth, don't fight or harbor ill feelings. But raise in yourselves the Lord Jesus Christ, because he is the one that also puts an end to earthly desires.

Other written texts produced on Nukulaelae include lists of various sorts, bookkeeping accounts, written invitations to feasts, and traditional fishing and medical lore that is recorded in exercise books (*api*) which are jealously guarded by their authors. Personal letters and religious sermons remain the only written registers that involve continuous discourse of any length.

**2.4. DATA BASE.** The data on which this study is based consist of a sample of the five spoken and two written registers described above. The composition of the data base is summarized in Table 1. Its size is considerably larger than data bases used in most studies of stylistic variation. Given the very small size



REGISTER	MODALITY	NUMBER OF WORDS	%	NUMBER OF TEXTS	%
informal conversations	spoken	23,390	15.3	12	5.4
political meeting	spoken	17,194	11.3	19*	8.6
maneapa speeches	spoken	21,999	14.4	34	15.3
private-setting speeches	spoken	13,666	8.9	22	9.9
radio broadcast	spoken	8,746	5.7	14*	6.3
personal letters	written	31,829	20.8	70	31.5
written religious sermons	written	35,947	23.6	51	23.0
total		152,771	100.0	222	100.0

TABLE 1. Composition of the corpus.

[\* All texts in these registers produced in the same speech event.]

of the community and the broad range of contexts in which the texts were obtained, the corpus is highly representative of the spoken and written output of the Nukulaelae speech community.<sup>2</sup>

#### METHODOLOGY

3. The linguistic analysis of the seven registers relies on two methodological assumptions. The first of these is that the structural differences between any two styles of speaking or writing can be measured in terms of the frequency of occurrence of key linguistic features (Leech & Short 1981, Romaine 1982). This methodology is adopted in many works on use-based language variation. It is of course not the only viable approach. Certain linguistic features, such as repetition (Ainsworth-Vaughn 1987, Tannen 1987) and metaphors (Halliday 1987), vary across styles in terms of both their function and their frequency. But such features are not easily quantifiable, and only a fine-grained, microscopic, qualitative textual analysis can successfully capture their significance as indices of stylistic variation. Quantitative and qualitative approaches remain congruent in purpose, and this study, which relies primarily on a quantitative analysis, is complemented by a number of qualitatively-oriented analyses of the same data base (Besnier, 1989a, b, c, d).

The second methodological assumption maintains that the most fruitful quantitative approach to stylistic variation consists in measuring the degree to which linguistic features co-occur within a text, as Ervin-Tripp 1972 has convincingly argued. Co-occurrence can be measured with factor analysis (Biber 1985), a multivariate statistical technique that provides an empirical determination of the degree to which linguistic features co-occur in each register, and an evaluation of the importance of these co-occurrence clusters in distinguishing among text types. Factor analysis takes as input frequency counts of a large number of linguistic features across a corpus of texts, and outputs a set of macrovariables, which are empirically defined by the co-occurrence patterns

<sup>2</sup> The number of speakers and writers represented in the corpus varies from 10 (for written religious sermons) to 35 (for conversations). Both genders and a wide range of adult age groups are represented, although these groups are polarized in certain registers. For example, while everyone on Nukulaelae participates in conversations and writes personal letters, only older men deliver formal speeches and write religious sermons. The relative importance of gender and age as predictors of stylistic variation in this corpus is the topic of a study in progress.

between the features. The technique does not require that the texts in the corpus be classified into styles before analysis; rather, it treats each individual text as a separate observation. Furthermore, factor analysis enables the researcher to take into consideration a large number of input variables (i.e. linguistic features) without placing some features in a position of greater importance than others.<sup>3</sup>

A detailed description of the technique is provided below for each step in the process. Further information on factor analytic methods can be sought in Gorsuch 1983, which describes factor analysis for the social sciences in general, and Biber 1985, which describes the technique with particular reference to sociolinguistic concerns.

#### THE FEATURES

4. Forty-two linguistic features were selected for this analysis; they are listed in Table 2. All quantifiable features whose function may be relevant to the relationship between spoken and written language were included in this inventory. For example, the following functional categories are represented:

- (a) Involvement, detachment, and affect (e.g. pronouns, ergative case marking, intensifiers)
- (b) 'Looser' and 'tighter' information packaging (e.g. anaphoric devices, focus marking, demonstratives, discourse linkers)
- (c) Evidentiality (e.g. speech act verbs, mental processes, quotes)
- (d) Structural complexity (e.g. word length, subordinate clauses, raised NPs, nominalizations)
- (e) Informational elaboration (e.g. prepositional phrases, definite and indefinite noun phrases)
- (f) Context dependence and interactiveness (e.g. pronouns, questions, quotes)
- (g) Relative immediacy of the context (e.g. tense/aspect markers, demonstratives)

In identifying these features, I relied heavily on previous research on spoken and written English.<sup>4</sup> Accordingly, many features are functionally equivalent to features of English that have been claimed to distinguish spoken and written registers. Some features, like coördinating and subordinating devices, personal

<sup>3</sup> The approach used here is called *EXPLORATORY* factor analysis. It calls for a 'saturated' model, i.e. as large an inventory of input variables as possible. I have thus considered all features that could possibly be significant to stylistic variation and that could be handled quantitatively. Another approach, *CONFIRMATORY* factor analysis (Long 1983), takes as input a smaller number of variables that have been selected in preliminary studies as good predictors of variation across registers. Since the application of factor analysis to linguistic data is still in its infancy, only exploratory models can be used at this stage, until more cross-linguistic data on register variation have been analyzed.

<sup>4</sup> There are still very few studies of register differences across modes and styles in non-Western and less-studied Western languages. Most notable are Clancy 1982 on Japanese, Li & Thompson 1982 on Chinese, Siegel 1981 on Tok Pisin, Mithun 1985 on Mohawk, Tannen 1984 on modern Greek, and a few short studies on Papuan languages (Deibler 1976, Irwin 1976), an Australian language (Curnow 1979), and an Arawakan language (Duff 1973). These studies are based on restricted bodies of texts and analyze the distribution of a handful of features each, which are commonly similar to features analyzed for English.

## PRONOMINAL FEATURES:

1. 1st-person singular pronoun *au* or *aku*
2. 2nd-person pronouns *koe* (singular), *koulua* (dual), *koutou* (plural)
3. 3rd-person pronouns *ia* (singular), *laaua* (dual), *laatou* (plural)
4. 1st-person inclusive pronouns *taaua* (dual), *taatou* (plural)
5. 1st-person exclusive pronouns *maua* (dual), *mautou* (plural)
6. All-purpose anaphoric pronoun *ei*

## NOMINAL FEATURES:

7. Definite/specific noun phrase
8. Non-specific indefinite noun phrase
9. Anaphoric noun *mea* 'thing, entity, etc.'
10. Possessive noun phrase
11. 1st-person demonstratives *teenei* (singular), *konei* (nonsingular)
12. 2nd-person demonstratives *teenua* (singular), *kouaa* (nonsingular)
13. 3rd-person demonstratives *teelaa* (singular), *kolaa* (nonsingular)
14. Sentence-initial nominal focus marker *ko*
15. Ergative/high-agentivity/high-affect case-marker *nee*
16. Absolutive/contrastive case-marker *a*
17. Prepositional phrases (with *i* 'at, on, in', *ki* 'to', etc.)
18. Possessive noun phrases (with *a* 'alienable', *o* 'inalienable')

## VERBAL FEATURES:

19. Nonpast tense marker *e*
20. Past tense marker *ne*
21. Inchoative aspect marker *koo*
22. Durative aspect marker *koi*
23. Precautionary mood marker *maulmanalmanei*, etc.
24. Existential verbs *isi*, *i ai* 'there is, etc.'

## ADVERBIAL FEATURES:

25. Hedges *kaati* 'perhaps', *nee* 'tag question', *fua* 'just', etc.
26. Intensifying adverbs *eiloa* 'indeed, very', *faeloa* 'very, constantly', etc.

## LEXICAL FEATURES:

27. Speech-act verbs *muna* 'say', *taku* 'tell', etc.
28. Mental-process verbs *maafaufau* 'think', *tauofi* 'hold an opinion', etc.
29. Word length (in phonemes)
30. Type-token ratio (of the first 500 words of text)

## DERIVED, COMPOUND, AND COMPLEX CLAUSES AND DISCOURSE TIES:

31. Direct question-word questions
32. Direct yes-no questions
33. Direct quotes (in numbers of quoted words)
34. Nominalized verbs (suffixed with *-Vga*)
35. Ratio of raised noun phrases to total raising constructions
36. Relative clauses
37. Resultative/summative/reinforcing conjuncts *teenei laa* 'thus', etc.
38. General subordinators *o*, *kee*, etc.
39. 'Because' subordinators *me*, *i te mea*, etc.
40. Conditional clauses
41. Clausal and phrasal coordinators *kae* 'and, but', *mo* 'and, with'
42. Discourse linkers *ia* 'well', etc.

TABLE 2. Linguistic features used in the factor analysis.

pronouns, and prepositions, are identical in both form and function to English features. Other features, like case markers and discourse connectors, do not have formal equivalents in better-known languages, but were included in the analysis because preliminary tests indicated that their distribution across text

types was stratified, and because their function has been claimed to be significant to the spoken and written contrast in English. For example, the ergative case marker in Nukulaelae Tuvaluan has a marked affective connotation, in that it is typically used when the transitive subject has a strong or negative effect on the situation described by the sentence (see Ochs 1982 for a similar analysis in Samoan, and Besnier 1989d for further discussion). Since affect is commonly claimed to differ in salience and nature across the spoken and written modes, this feature was included as a potential index of stylistic variation. Finally, some features that figure prominently in the literature on spoken-written relationships in English do not have formal equivalents in Nukulaelae Tuvaluan; such is the case with passive constructions and the progressive aspect.

All features were identified mechanically with the help of a Pascal computer program written for this project. Development of this 5000-line program took approximately two years. Manual checking of randomly selected samples from the corpus indicated that the program is nearly 100% accurate. The program counts the frequency of occurrence of all 42 features in all the texts in the corpus (which was tagged selectively to disambiguate certain structures) and normalizes the counts in two ways. First, the length of each text was standardized to 500 words, corresponding roughly to the average length of the texts in the corpus. So, for example, if a feature occurred 4 times in a text of 400 words, the frequency was changed to a percentage of 5 per 500 words. This strategy ensures that all texts be comparable, irrespective of their length. Secondly, after the entire corpus was processed, the counts were converted to normalized frequencies (also called 'z-scores')—namely, numbers that are standardized around a mean of 0 with a standard deviation of  $\pm 1$ . The use of normalized frequencies ensures that features which occur less frequently than others do not have a lesser effect on the calculations than features which occur with greater frequency. For example, definite noun phrases necessarily occur more frequently in a text than conditional clauses, but this fact should not skew the results, since both features may be equally important in terms of their function as definitional markers of style. At this stage in the analysis, a few features were discarded from further analysis, either because their overall frequency was too low or because their distribution was not stratified across texts. Such was the case with exclusive first-person dual and plural pronouns, durative-aspect markers, and precautionary-mood markers.

#### THE FACTORS

5. The co-occurrence patterns of the 42 linguistic features are best represented by five empirically-defined clusters of features, or FACTORS.<sup>5</sup> The degree

<sup>5</sup> While factor composition is empirically determined, the number of factors to be taken into consideration is determined by comparing several analyses, each with a different number of factors, according to various criteria. Among these criteria is the amount of shared variance between features captured by each factor, which tends to level off beyond a certain cut-off point (see Biber 1985 for further discussion). For this analysis, five factors were determined to provide an optimal solution. The statistical package used in this study is SPSS-PC+.

to which a feature co-occurs with the other features that define the factor is given by the **LOADING** of the feature on each factor, a number between  $-1.00$  and  $1.00$ . The loading of each feature on each factor is a measure of the role played by the feature in defining the factor. A positive loading indicates that the feature co-occurs with other features with positive loadings, while a negative loading indicates that the feature is in complementary distribution to features with positive loadings.

Table 3 displays the loading of each feature in the five-factor solution

FEATURES:	FACTORS:	1	2	3	4	5
Adverbs		.71	-.02	-.12	.06	-.08
Hedges		.70	-.19	.20	-.18	.06
3rd-person demonstratives		.57	.35	.24	.14	.29
Discourse linkers		.55	-.14	-.26	.08	-.09
1st-person demonstratives		.55	.02	.01	-.02	-.06
2nd-person demonstratives		.51	.13	.10	-.14	.30
intensifying adverbs		.47	-.27	.02	-.30	.18
Resultative conjuncts		.45	-.04	-.11	.07	-.19
3rd-person pronouns		-.45	.40	.11	-.02	-.03
Ergative-case markers		-.43	.01	-.09	.40	-.13
Nominal-focus markers		-.42	.41	-.05	.05	-.05
1st-person incl. pronouns		.42	.26	-.22	.36	-.10
Possessive noun phrases		-.15	.69	-.14	-.16	.05
Definitive noun phrases		-.30	.69	-.06	-.14	-.15
2nd-person deictic advs.		.13	-.58	-.20	-.04	.05
1st-person pronouns		.01	-.57	-.06	-.03	.15
Prepositions		-.27	.56	-.36	-.25	.14
Nominalized verbs		.11	.54	-.12	.11	.42
2nd-person pronouns		-.17	-.53	-.06	-.23	.00
Coördinators		.04	-.44	-.01	-.12	.07
Question-word questions		-.29	.15	.65	-.04	-.02
Yes-no questions		.13	-.11	.61	-.18	.05
Word length		-.03	.18	-.57	-.01	.08
Direct quotes		-.46	.16	.50	.00	-.09
Subordinators		-.26	-.36	-.41	.09	.09
Nonpast-tense markers		-.27	.06	.23	.62	.14
Relative clauses		.12	.29	-.15	.54	-.17
Raised noun phrases		-.12	.03	.00	.45	-.03
Anaphoric nouns		.13	.19	.33	.41	.11
Existential verbs		.06	-.08	.04	-.03	.73
Indefinite noun phrases		-.26	.07	-.05	.19	.57
Anaphoric pronouns		-.30	.16	.04	.17	.00
1st-person deictic advs.		.06	-.33	.03	-.20	-.07
Inchoative-aspect markers		.07	-.33	.08	-.27	-.24
Speech-act verbs		-.17	.05	.33	.00	.04
Type-token ratio		.01	-.10	.30	.17	.06
Mental-process verbs		-.11	.08	-.26	.34	.17
Past-tense markers		-.12	.09	-.01	-.33	.02
Conditional clauses		-.19	-.28	-.18	.30	.24
Negation		-.06	-.38	.19	-.06	.38
Absolutive-case markers		-.17	.16	.28	.10	-.37
'Because' subordinators		-.27	.21	-.30	.24	-.37

TABLE 3. Loading of features in the rotated factor analysis.

(rounded off to 2 decimal places). A loading with an absolute value (i.e. unsigned value) greater than 0.40 is considered to be significant. For example, adverbs have a significant loading of .71 for Factor 1, but have an insignificant loading of  $-.02$  for Factor 2.<sup>6</sup> Features may have significant loadings on more than one factor; such is the case with third-person pronouns. This indicates that the same feature co-occurs significantly with more than one group of features. Significant loadings are in boldface in Table 3.<sup>7</sup>

Each of the five factors is defined primarily by the features which load significantly on the factor. Table 4 is a summary of these factor-defining features. Features with positive loadings are grouped in the upper half of the table, and features with negative loadings, which are in complementary distribution to features with positive loadings, in the lower half.

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
POSITIVE	Adverbs	Possessive NPs	Q-word Qs	Nonpast tense	Existential Vs
LOADING	Hedges	Definite NPs	Yes-no Qs	Relatives	Indefinite NPs
	3rd demonstratives	Prepositions	Direct quotes	Raised NPs	Nominalization
	Discourse linkers	Nominalization		Anaphoric Ns	
	1st demonstratives	Nominal focus		Ergative case	
	2nd demonstratives	3rd pronouns			
	Intensifiers				
	Resultative conjuncts				
	Inclusive pronouns				
NEGATIVE	3rd pronouns	2nd deictics	Word length		
LOADING	Ergative case	1st pronouns	Subordinators		
	Nominal focus	2nd pronouns			
	Direct quotes	Coordinators			

TABLE 4. Factor composition.

The last eleven features in Table 3 do not contribute significantly to the empirical definition of any of the five factors. This indicates that these features do not co-occur significantly and are not in significant complementary distribution with any other group of features. It is particularly interesting that type-token ratio, which measures lexical variety in a text, has no loading greater than .30 on any factor.<sup>8</sup> While type-token ratio is traditionally taken to be one of the prima-facie indicators of stylistic variation in English (e.g. Blankenship 1974, Chafe & Danielewicz 1987, DeVito 1965, and Gibson et al. 1966), it is a poor index of both intra- and inter-register variation in Nukulaelae Tuvaluan.

<sup>6</sup> There is no inherent significance to the numbering of factors, other than the fact that factors with lower numbers generally capture the greatest proportion of the shared variance between features.

<sup>7</sup> Table 3 displays rotated factor scores, obtained by ROTATING the axes of the model so as to minimize correlations between factors. The Varimax method of rotation was used.

<sup>8</sup> Type-token ratios were computed only for the first 500 words of each text to compensate for the fact that longer texts necessarily exhibit greater lexical diversity than shorter texts because of their length. This method does not skew the data because the shorter texts (letters, sermons, and speeches) average approximately 500 words in length, and the longer texts (broadcast and political meetings) were split up into smaller texts, thus ensuring that samples were taken from every segment of the text.

This fact is clearly reflected in Table 5; the mediocre level of significance ( $p < .03$ , barely below the traditional cut-off point of  $.05$ ) and the modest standard deviations within each text type indicate that there is little variation in type-token ratio either across or within registers.<sup>9</sup> Lexical variety is thus not a significant predictor of style in this speech community. As a tentative explanation, we may invoke the relative absence, in Nukulaelae linguistic repertoires, of specialized occupation-related varieties (e.g. legalese, scientific writing, journalese), which are commonly invoked as the principal cause of lexical variety in more complex societies.

REGISTER	MEAN	STANDARD DEVIATION	NUMBER OF TEXTS
informal conversations	164.9	28.4	12
political meetings	157.3	11.2	19
personal letters	148.7	32.1	70
radio broadcast	147.2	9.9	14
maneapa speeches	140.4	42.3	34
written religious sermons	136.4	33.2	51
private-setting speeches	135.1	38.1	22
total	144.8	33.2	222

TABLE 5. Distribution of type-token ratios across text types.

Figures are for types per 500 tokens ( $p < .03$ ,  $F = 2.40$ ,  $R^2 = 6\%$ ).

#### FUNCTIONAL INTERPRETATION OF THE FACTORS

6. The functional significance of the factors uncovered in the statistical analysis can now be interpreted. The methodological assumption underlying this step in the analysis is that statistically salient co-occurrence patterns between features bear witness to a shared communicative function between the features or, at least, a set of communicative functions whose co-occurrence in the same texts is not incidental. This methodological stance is a formalized version of Ervin-Tripp's (1972) analysis of the role of co-occurrence restrictions in sociolinguistic variation. The interpretation of the shared communicative function of the features that define a factor enables us to talk about the DIMENSION that underlies the factor. These dimensions can then be used to identify structural variations across registers and texts.

6.1. DIMENSION 1. At the positive end, Factor 1 is defined by the co-occurrence of features like intensifiers and hedges, both of which are used to encode the language producer's attitude toward the content of the discourse or toward the context of interaction. The first-person non-singular inclusive pronouns *taaua* (dual) and *taatou* (plural), which also have a positive loading, have a strong affective function in Nukulaelae Tuvaluan, in that they are used to mark solidarity and in-groupness. Adverbs (e.g. *too* 'too (much)', *katoa* 'all', and *lei* 'well'), which have a high positive loading on Factor 1, have stance-

<sup>9</sup> Most features (37 out of 42) are distributed across text types with a level of significance of less than  $.0001$ , which indicates that their distributional variation across text types is considerably more significant than variation within each text type.

encoding functions and evaluative meanings. Resultative conjuncts and discourse linkers, the two types of discourse-level conjuncts, are associated with persuasive discourse. The characteristics of the above features indicate that at the positive end of Dimension 1, the interpretive dimension abstracted from Factor 1, we find texts in which the salient concerns are persuasion, the expression of personal stance, attitudes, and opinions. (The only features that do not clearly fit this interpretation are demonstratives, although a qualitative analysis may reveal that their function is congruent with the interpretation of the rest of the factor.)

At the negative end of Factor 1, there are four features: third-person pronouns, ergatively-marked NPs, direct quotes, and nominal focus (akin in function to English clefting). These features clearly function as markers of authoritative discourse, which focuses on third-person entities, expresses the high agency of subjects through the ergative case (as discussed earlier), makes assertions about focused noun phrases, and relies on quotes for evidence. Dimension 1 can thus be labeled as a measure of the 'attitudinal vs. authoritative discourse'. This label does not imply that the two discourse functions are inherently dichotomous; rather, it reflects the fact that features with an attitudinal function and features with an authoritative function are distributionally complementary across Nukulaelae text types.

**6.2. DIMENSION 2.** The features that cluster at the positive end of Factor 2 clearly share an 'informational' function. Nominalized verbs and prepositional phrases (including possessive noun phrases) are used to 'integrate' (Chafe & Danielewicz 1987) information within idea units. The co-occurrence of definite noun phrases, focused noun phrases, and third-person pronouns indicates a 'nominal style' (Brown & Fraser 1979), in which the primary concern is the presentation and manipulation of information.

At the negative end, Factor 2 is defined by first- and second-person pronouns, second-person deictic adverb *atu*, and clausal coordinators. First- and second-person referential expressions are traditionally interpreted as markers of interactiveness and involvement (Chafe 1982, Poole & Field 1976), while clausal coordination is seen as a symptom of discourse 'fragmentation' (Chafe 1982), which commonly accompanies involvement in a text. Schiffrin (1987:150) points out that clausal *and* in English conversation 'has both ideational and interactional roles simultaneously'. Dimension 2 will thus be labeled 'informational vs. interactional focus'.

**6.3. DIMENSION 3.** This dimension, which corresponds to Factor 3, may be defined as a measure of 'rhetorical manipulation vs. structural complexity'. (Again, these two categories are not claimed to be functionally dichotomous.) The features with positive loading are direct yes-no questions, direct question-word questions, and direct quotes. The presence of these three features in a text is a symptom of a concern for the manipulation of 'voices' in the discourse (the term 'voice' is used here in a Bakhtinian sense; see Besnier 1989c). Authorial voices are interwoven with quoted voices through reported speech, and the different authors of the text invoke each other's participation through the



use of questions. This concern, which I label 'rhetorical manipulation', is a subcomponent of the notion of 'involvement' that Chafe (1982) and others find to be significant for register variation in English. The fact that, in the Nukulaelae data, quotes and questions do not co-occur significantly with other markers of involvement (first- and second-person pronouns, emphatic particles, etc.) indicates that involvement is not a unified notion.

At the negative pole of Factor 3 we find two features, word length and subordination, that share a clear function: structural complexity. However, other features that are traditionally associated with structural and lexical complexity (relative clauses and type-token ratio, for example) do not co-occur with these two features. The 'complexity' component of Dimension 3 thus does not represent the only type of complexity at play in the language.<sup>10</sup>

**6.4. DIMENSIONS 4 AND 5.** Factors 4 and 5 are not readily interpretable. The features with significant loadings on Factor 4 are nonpast tense markers, relative clauses, raised noun phrases, anaphoric nouns, and the ergative case. All have positive loadings.<sup>11</sup> Two of these features, relative clauses and raised noun phrases, suggest that one type of structural complexity is at play, but this interpretation cannot be extended to the factor itself since the remaining three features do not have a comparable function. Factor 5 is defined by three features with significant positive loadings: existential verbs, indefinite noun phrases, and nominalized verbs. The co-occurrence of the first two features is not surprising, since existential clauses are the primary grammatical context in which indefinite noun phrases are found in Tuvaluan texts. This factor, however, is defined by too few features to be interpreted; a general rule-of-thumb in factor analysis is that a factor must be defined by at least five variables for an interpretation to be assigned to it (Gorsuch 1983). Factors 4 and 5 will not be considered any further in this discussion. Situations in which some factors are uninterpretable are not uncommon in factor analysis. As further discussed in Biber 1988, a multi-factor solution in which some factors are uninterpretable is preferred to a solution with few factors which are all interpretable.

#### DIMENSIONS, MODES, AND REGISTERS

7. In addition to measuring co-occurrence patterns between features, factor analysis assigns to each text in the corpus a **FACTOR SCORE** for each of the factors, which measures the extent to which the features that define the factor co-occur in the text. Briefly, factor scores are computed by adding the normalized counts of features with significant positive loading on each factor and subtracting the normalized counts of features with significant negative loading. Features that have a significant positive or negative loading on more than one factor (e.g. third-person pronouns and direct quotes) are only counted for the factor on which they have highest loading. Factor scores provide a basis on

<sup>10</sup> Beaman's (1984) and Thompson's (1984) cautions that linguistic complexity in English is not a unified phenomenon are relevant here.

<sup>11</sup> The fact that there is no feature with significant negative loading on Factors 4 and 5 has no theoretical significance.

which the registers may be ranked along each of the three interpretive dimensions. This ranking enables us to test whether a spoken-written distinction obtains in Nukulaelae Tuvaluan. It will also enable us to test the cross-cultural validity of the explanatory hypotheses advanced in the literature on English speaking and writing.

The rankings exhibited in Figures 1-3 are obtained by averaging the factor

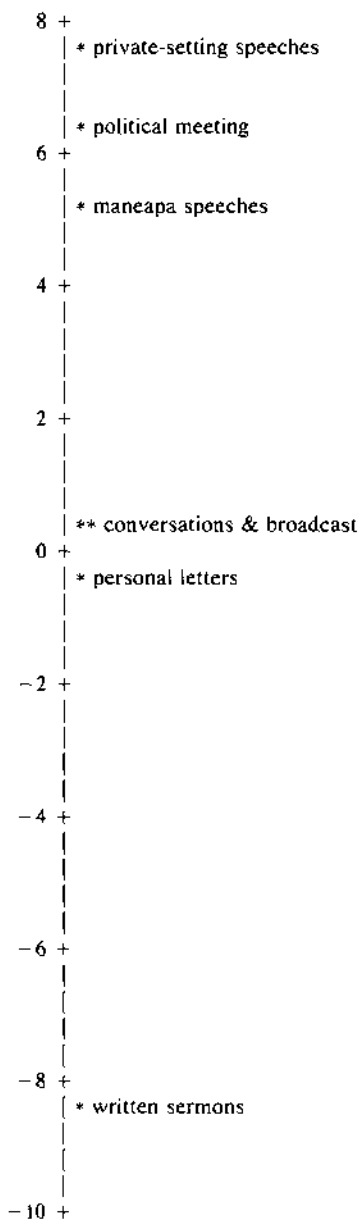


FIGURE 1. Plot of mean factor scores for Dimension 1, 'attitudinal vs. authoritative discourse' ( $p < .0001$ ,  $F = 85.40$ ,  $R^2 = 70\%$ ).

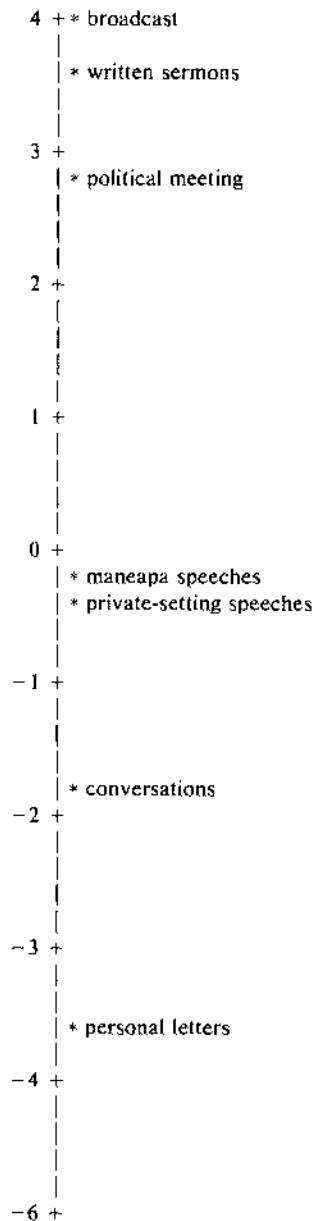


FIGURE 2. Plot of mean factor scores for Dimension 2, 'informational vs. interactional focus' ( $p < .0001$ ,  $F = 21.77$ ,  $R^2 = 38\%$ ).

scores of texts from each register. These figures provide a visual display of the extent to which the texts from each register exhibit the co-occurrence patterns that define the three factors. For example, personal letters rank lowest on Factor 2, which means that the features with negative loading on Factor 2 (first- and second-person pronouns, coordinators, etc.) are more frequent in

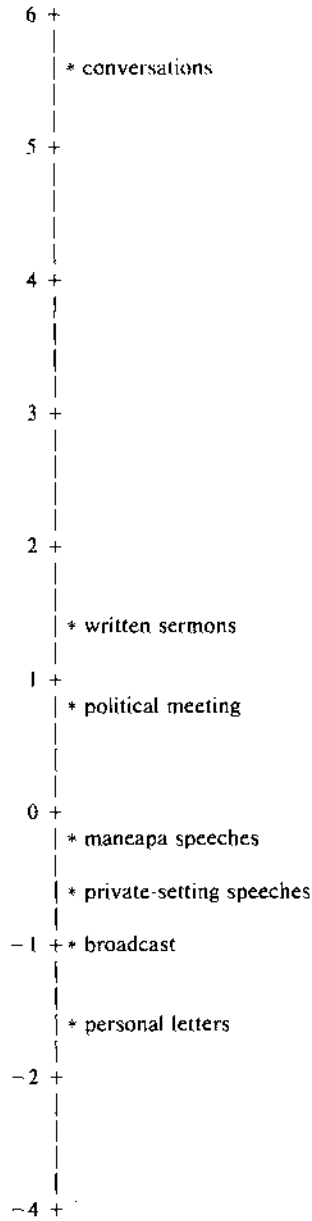


FIGURE 3. Plot of mean factor scores for Dimension 3, 'rhetorical manipulation vs. structural complexity' ( $p < .0001$ ,  $F = 15.26$ ,  $R^2R = 30\%$ ).

personal letters than in any other register, and that the features with positive loading on Factor 2 (possessive NPs, definite NPs, prepositions, etc.) are least frequent in that register. The means represented in Figures 1–3 are all highly significant ( $p < .0001$ ); this indicates that each of the seven registers is structurally cohesive and that there is a close match between register and style.

**7.1. VARIATION ACROSS MODES.** As can be seen in Figures 1–3, none of the dimensions reveal a clear boundary between spoken and written registers. It is not the case that the two written registers and the five spoken registers polarize themselves at the ends of any of the factors. The mean factor scores of written sermons and personal letters are at opposite poles of Dimension 2 (Figure 2). They are not so dramatically polarized on Dimension 1 (Figure 1) and Dimension 3 (Figure 3), but there they do not cluster together either. On Dimension 1, personal letters cluster together with conversations and the broadcast, while written sermons are isolated from other registers at the lower end of the dimension. Written sermons occupy an intermediate position on Dimension 3, while personal letters are found at the lower end of the dimension.

Quantitative evidence of the fact that the modes are not structurally homogeneous is provided in Table 6. This table displays mean factor scores for all texts computed by ignoring register variation within modes. While the level of significance of these means remains high for Factor 1, the means for Factors 2 and 3 are not significant, because mode-internal variation is considerably greater than variation across the two modes.<sup>12</sup> These results show that the categories 'spoken style' and 'written style' are not justified. In order to talk about stylistic variation in Nukulaelae Tuvaluan, we need to focus on registers, rather than on the spoken and written modes.<sup>13</sup>

	FACTOR 1	FACTOR 2	FACTOR 3
spoken registers	4.83	.21	.42
written registers	-4.01	-.18	-.35
level of significance <	.0001	.62	.08
F	150.91	.25	3.05
R*R	41%	.1%	1%

TABLE 6. Mean factor scores for texts in the two modes.

Furthermore, it is clear that register variation is not defined as a one-dimensional continuum; rather, it forms a complex, multidimensional model. These results are congruent with Biber's 1986 findings on spoken and written English.

Are written registers more detached and less involved than spoken registers? In §6.2, Dimension 2 was interpreted as a measure of a text's relative 'informational vs. interactional focus'. Texts that are assigned a low score for Factor

<sup>12</sup> Even for Factor 1, the R\*R value, which is a measure of the amount of variance between the categories over which the mean is calculated, drops dramatically (from 70% in Figure 1 to 41% in Table 6) when the registers are 'collapsed' in two modes.

<sup>13</sup> Many experiments on spoken-written linguistic relationships (e.g. Mazzie 1987) have sought to elicit registers that are distinguished primarily in terms of mode of production (spoken and written narratives on the same topic, for example) to test, in a controlled fashion, whether mode has any effect on linguistic structure. But in many cultures, including Nukulaelae, literacy and orality are functionally so distinct that written activities very rarely, if ever, differ from spoken activities simply in terms of mode of production. Hence there are no natural data on which to test whether mode has any significant impact on the structure of texts. Data of this type were elicited on Nukulaelae and remain to be analyzed, although the inherent artificiality of the exercise renders them suspicious as to what exactly they represent.

2 exhibit many 'interactional' features (pronouns, deictics, and coördinators, see Chafe & Danielewicz 1987 for discussion) and few 'informational' features (definite NPs, possessive NPs, prepositions, etc.). Such is the case with personal letters, which rank lowest along this dimension. If the traditional label 'involved' is taken to be equivalent to what I have called 'interactional' (and, indeed, they are defined by similar features), the hypothesis that writing is more detached than speaking does not apply to this written register of Nukulaelae Tuvaluan. In fact, Nukulaelae letters rank significantly lower along the 'informational vs. interactional' dimension than face-to-face conversations. Written sermons, in contrast, rank very high along Dimension 2, a reflection of their informational orientation. The hypothesis that writing is more detached than speaking holds for written sermons, but not letters. But since letter-writing remains the most culturally salient literacy event on the atoll (they are written far more frequently and by a broader cross-section of the population than sermons), we cannot consider the texts of sermons more 'prototypical' or 'representative' of written Nukulaelae Tuvaluan than the texts of letters.

7.2. VARIATION WITHIN THE WRITTEN MODE. I noted earlier that Nukulaelae letters are predominantly used for the expression of affect about the writer and the addressee, and only secondarily for information (Besnier 1989b). The low ranking of letters on Dimension 2, a measure of 'informational vs. interactional focus', is a reflection of the primary function of letters. In the following example from a personal letter, the features that co-occur at the negative ('interactional') pole of Factor 2 appear in boldface type.

- (8) *Talu mai te aso ne maavvae ei taatou, i te afiafi teenaa, a maatou mo S, O, T, S, mo tamaliki katoa, koo itagi i te masausau atu kiasa koe. I te paleleega o temotou lotu, a ko O koo fakamasau aka nee ia a tau maasani i taimi o ttou lotu afiafi, a koe e see mafai loa o fano ki se koga fakaaatea, ... A S i te taimi teenaa koo tagi, a ko au foki koo tagi, a maatou koo itagi katoa loa i te maafaufau atu ki ou uiga ggali mo ou faifaiga llei ne fai i lotu i te kaiga, peelaa foki ki te fenua. (lett556)*

On the day when we parted, that evening, all of us **including** S, O, T, S, **and** all the children, we cried from reminiscing about **you**. Our evening prayer was over, **and** O started reminiscing about **your** habit of not going off anywhere else during prayer, ... S then started crying at that time, **and** I cried too, and all of us cried thinking [**thither**] about **your** nice attitude **and** the nice things that **you** did at the heart of the kin group, and also in the island community.

Written sermons, in contrast, are considerably more information-oriented and, consequently, cluster at the opposite pole of the dimension. As described earlier, written sermons are highly exhortative, much more so than any other communicative event in Nukulaelae society. Sermon delivery places one individual in a position of authority, from which he is allowed to accuse, moralize,

and, generally, pontificate to the rest of the community.<sup>14</sup> Not surprisingly, if we now turn to Dimension 1 ('attitudinal vs. authoritative discourse'), written sermons cluster at the 'authoritative' pole of the dimension. Following is an excerpt from a written sermon which clearly illustrates the 'authoritative' tone of the register:

(9) *Ko ia fua toko tasi tou taugaasoa see lavea, e see toko lua, e see toko tolu, e toko tasi eiloa. Ko ia teelaa e fakappula nee ia ou mata fakate-fakatuanaki kee laeva ei nee koe a ia mo tena kau toko uke, kolaa e tausi kiaa koe mo au mo taatou. Ppula ttonu ou mata kee lavea ei nee koe.* (serm424)

It is **him** alone who is your invisible friend, there aren't two of them, there aren't three of them, only one. It is **him** that makes the eyes of your belief see him and his numerous cohort, those who watch over you and me and us all. Open your eyes so that you can see.

On the same dimension, personal letters occupy an intermediate position, a symptom of the balance between attitudinal and authoritative functions of letters, which is corroborated by textual analysis (Besnier 1989b). Finally, personal letters cluster at the lower end of Dimension 3, an indication of the fact that longer words and subordinators co-occur more frequently in letters than in other registers, and that letters contain few questions and direct quotes. As such, they contrast most saliently with conversations, which cluster at the opposite pole of the dimension. These characteristics confirm other researchers' observations about the differences between 'informal' spoken language and 'informal' written language; in particular, Chafe & Danielewicz (1987) uncover the same pattern of distribution for all five features in comparable American English registers. However, written sermons occupy an intermediate position on Dimension 3, and the pattern cannot be extended to written Nukulaelae Tuvaluan in general.

The characteristics traditionally attributed to written language clearly do not apply uniformly to Nukulaelae written registers. Some of these characteristics apply to one written register but not the other. A number of characteristics that have been associated with spoken language are reflected most strikingly in one of the two Nukulaelae written registers; such is the case, for example, with the 'interactional' focus of spoken language, which on Nukulaelae is found in personal letters more than in any spoken register. Significantly, the written register with most affinities to the Western concept of written discourse is the sermons; the written sermons are framed as authoritative texts with a salient informational function. Nukulaelae sermons differ from all other communicative events in the society in a number of fundamental ways. The setting in which they are delivered is a large walled-in stone church that towers over the small thatched traditional houses with no walls. Nukulaelae islanders sit on benches during church services, the only setting where they do not sit on the floor. Men wear trousers and women wear white mumus, in contrast to the

<sup>14</sup> Since only men give sermons, the gender-specific pronoun is intended.

casual wrap-arounds worn in all other contexts. In short, church sermons bear the mark of their nonautochthonous, Western origin (heavily mediated by Samoan society), and this imprint is reflected in their structural characteristics as a register.

**7.3. VARIATION WITHIN THE SPOKEN MODE.** Spoken registers are structurally as varied on the three dimensions as are the two written registers. The most salient polarization on Dimension 1 occurs between private-setting speeches, the political meeting, and maneapa speeches on the one hand, and conversations and the broadcast on the other hand. On Dimension 2, the five spoken registers are more spread out, although the broadcast and the political meeting are significantly distinct from the other three registers. Finally, conversations are markedly different from the remaining four registers along Dimension 3. The general conclusion that can be drawn from these patterns is that variation within the spoken mode is complex.

In particular, no *a priori* definition of 'formality', which for example would distinguish informal conversations from the remaining four registers on the three dimensions, is reflected in the overall patterns of co-occurrence of linguistic features across spoken texts (Dimension 3 being the only dimension on which such a polarization is found). Maneapa speeches and private-setting speeches are the two registers that are distinguished primarily in terms of the public vs. private nature of the context in which they are produced. Yet these two registers are not structurally distinct, as witnessed by the fact that they essentially cluster together on all three dimensions.<sup>15</sup> Texts in these two registers are thus stylistically indistinguishable and the relative publicness of the context of production does not necessarily affect the structural characteristics of spoken language on Nukulaelae.

One of the more striking characteristics of variation across spoken registers concerns the clustering of three registers—private-setting speeches, maneapa speeches, and the political meeting—at the 'attitudinal' pole of Dimension 1. As such, they contrast with informal conversations, which occupy, with the broadcast, an intermediate position on this dimension. From observations made in previous research (e.g. Chafe 1982, Chafe & Danielewicz 1987), one would expect a greater incidence of stance- or attitude-encoding features in conversational than in public speaking. Yet the opposite pattern obtains in the Nukulaelae data. However, in light of the circumspect and negotiatory nature of talk in public in this speech community (particularly in the political meeting, as illustrated in example 1), the structural patterns are less surprising. Again, the communicative norms at play in particular communicative contexts play a crucial role in explaining the stylistic characteristics of language produced in these contexts.

<sup>15</sup> A comparison of the mean factor scores for these two registers for the three interpretable factors yields statistically mediocre or insignificant results (levels of significance of .05, .95, and .59 respectively).



## SUMMARY AND IMPLICATIONS

8. This paper has investigated the structural relationships of seven spoken and written Nukulaelae Tuvaluan registers. Each register category is associated with a set of clear contextual characteristics and communicative norms, which were described briefly in the first part of the paper. Forty-two linguistic features were identified as potential markers of style, and their distribution was measured across a large sample of texts representing the seven registers. Factor analysis was then used to identify empirically significant patterns of co-occurrence of these linguistic features; the co-occurrence patterns thus identified defined five factors or 'macrovariables'. Three of these factors were interpretable as measures of, respectively, 'attitudinal vs. authoritative discourse', 'informational vs. interactional focus', and 'rhetorical manipulation vs. structural complexity'. The patterning of the seven registers along these three dimensions of variation provided no evidence of a 'spoken style' or of a 'written style'. Instead, spoken and written registers were found to be stylistically interrelated in a complex manner. Along the 'attitudinal vs. authoritative' dimension, three registers of public speaking exhibited 'attitudinal' features and one written register, written religious sermons, exhibited the most 'authoritative' stylistic characteristics. The two written registers were polarized on the 'informational vs. interactional' dimension, with the spoken registers falling between them. Finally, the most informal spoken register, conversation, was isolated at the 'rhetorical manipulation' pole of the third dimension, while the remaining registers were clustered around the other half of the dimension.

Explanations for these patterns were then sought. Given the complexity of stylistic patterns, it became clear that accounts that invoke the intrinsic characteristics of spoken and written communication were inadequate. Clear explanatory correlations were discovered between the social characteristics of the registers and their structural characteristics as styles of speaking and writing. The norms of communication at play in each context proved to be particularly good predictors of stylistic characteristics. Thus the cultural 'value' of a communicative context on Nukulaelae is the determiner of the form of language produced in that context.

This study challenges a number of assumptions prevalent in the literature on spoken-written style differences. The first of these assumptions is that spoken language and written language are structurally distinct from each other independently of style and register—i.e. that there exists a stylistic boundary between all spoken registers on the one hand and all written registers on the other, and that this pattern is universal. I have shown that, in Nukulaelae Tuvaluan, spoken and written registers do not exhibit structural characteristics that lend support to this view. Rather, spoken and written Nukulaelae Tuvaluan are interrelated in a complex fashion in a multidimensional model of variation.

Another assumption that this study sought to reconsider is that the structural differences between spoken and written registers can be explained exclusively in terms of the physical and psychological characteristics surrounding the situation of use of these registers. With Akinnaso (1986:327), I maintain that there

is no basis for 'the belief that written language has some intrinsic qualities ("autonomy", "explicitness", "objectivity", "neutrality", "logic", etc.) that can be abstracted from context and discussed in "universal" terms.' As shown by Street 1984, the belief that written language is autonomous and objective is a reflection of what Western essayist literacy traditions as practiced by the intellectual elite in Western societies have defined as appropriate in written communication. Focusing on the spoken and written output of this elite has biased research at the interpretive level, in that we lack a cross-cultural and cross-linguistic perspective on the question to distinguish between cognitive and social factors. Linguistic markers of style contribute to the definition of styles of speaking and writing. These styles are associated with particular registers (often in a complex manner), which are in turn embedded in communicative practices at play in particular social events, the nature of which varies cross-culturally. What appears to be the 'same' register in different communities may in fact be used for vastly different purposes; letter writing on Nukulaeae, for example, is distinct from, say, American intellectuals' letter-writing activities (Besnier 1989b), which in turn differ from letter writing in other social groups in the same society (Heath 1983). As shown earlier in the discussion of written sermons, explanations for the structural characteristics of particular styles may even be sought in the social history of the register. Clearly, the acts of speaking and writing as well as the structure of spoken and written language can only be understood when the social characteristics of speech and literacy events are taken into consideration.

The consequence of these observations is that we cannot explain the relationship between speaking and writing solely in terms of the acts of speaking and writing themselves. We must take into consideration the ways in which these acts are perceived by communicators. Even though certain structural strategies may be better suited in certain communicative contexts because of physical and cognitive constraints (Pawley & Syder 1983), the choice of what is to be communicated in a particular context and how this is to be accomplished is mediated by socio-cultural norms. The effect of these norms can be so far-reaching as to overrule the 'natural selection' of communicative strategies at play in spoken and written contexts. In our quest for universal cognitive explanations for the difference between spoken and written language, we need to better understand how the communicative norms at play in various spoken and written registers affect the verbal output of the members of particular speech communities.

Finally, this study provides linguistic evidence that literacy is not a cross-culturally unified phenomenon, a fact that anthropologists, education theorists, and cross-cultural psychologists have long recognized (Heath 1983, McLaughlin 1987, Scollon & Scollon 1981, Scribner & Cole 1981, Street 1984). Rather, there are many different types of literacy situations, each with its own set of linguistic correlates, contextual characteristics, and sociocognitive implications. It is not clear that, as some researchers have argued (McCormick 1985, Kalmár 1985), the essayist literacy on which linguists have focused their attention is necessarily more 'prototypically' literate than situations of re-

stricted literacy of which Nukulaeae is an example. Considerably more cross-linguistic and cross-cultural research is needed before we can conclude that 'literacy prototype' and 'prototypical written language' are valid units of analysis.

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