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The Ohio State University, Ph.D., 1973 Language and Literature, linguistics

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PHONETIC AND PHONOLOGICAL PROPERTIES

OF CONNECTED SPEECH

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

> By Linda Shockey, B.A.

The Ohio State University

1973

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iii

TABLE OF CONTENTS

.

ACKNOWLEDGMENTS	
VITA	jii
LIST OF TABLES	yi
LIST OF FIGURES	yii
CHAPTER I	
1.1 1.2	Research Goals Experimental Techniques
CHAPTER II	
2.1	Chapter Goals
2.2	Description of data
2.3	Theoretical considerations
2.4	List of Processes Found:
	Word-Internal
2.5	Word-boundary Insensitive Processes
2.6	External Sandhi Processes
2.7	Discussion
CHAPTER III	
3.1	Chapter Goals
3.2	"Degree of Reduction"
3.3	Speech Rate
3.4	Results of Speech Rate Investigation
3.5	Rate Determination Procedure
3.6	Conclusions
CHAPTER IV	
4.1	Chapter Goals
4.2	Experimental Procedure
4.3	Results
4.4	Discussion
SUMMARY	
APPENDIX	
A	
ß 	

.

v

LIST OF TABLES

TABLE 3.1	Speech Rate Results	PAGE 77
3.2	Fastest vs. Slowest Utterances	. 79
4.1	Vowel Formant Frequencies, DJ	. 91
4.2	Vowel Formant Frequencies, RC	. 91
4.3	Vowel Formant Frequencies, BN	. 92
4.4	Vowel Formant Frequencies, all speakers	. 92

LIST OF FIGURES

FIGURE		PAGE
2.1	Apparent Vowel Loss	41
2.2	Oscillogram from Digitized Waveform	42
2.3	Unusually Short Vowels	43
2.4	Short Alveolar Stop	53
2.5	Flap before [h]	54
2.6	Short Stop after [m]	
2.7	Short Stop after [<code>y</code>]	55
4.1	Acousticai Vowel Diagram, DJ	94
4.2	Acoustical Vowel Diagram, RC	95
4.3	Acoustical Vowel Diagram, BN	96
4.4	Acoustical Vowel Diagram, all speakers	97

CHAPTER I

1.1. This study examines some general aspects of connected American English speech. It deals with recurrent low-level phonological processes found in connected speech and the differences in realizations of these processes in two different styles of speech (Chapter II), the interrelation of speed and style as determiners of phonological reduction (Chapter III), and the degree to which style of speaking affects the achievement of vowel targets (Chapter IV).

Numerous studies have been conducted on connected speech, usually to determine the characteristics of individual dialects of English (Stanley 1937, Hall 1943, Hubbell 1950, and Pederson 1965, to name only a few). These studies, based on data taken from a large number of subjects, characteristically consist of impressionistic phonetic analyses of recordings made of subjects reading a story, sometimes supplemented by recordings or field observations of relaxed conversations. They invariably attempt to describe all (segmental) characteristics of the dialects in question, with little emphasis being put on special properties possessed by their data as a direct result of its being naturally flowing speech rather than words in isolation. The study at hand, unlike those mentioned, singles out properties of

unselfconscious speech for particular consideration. Also unlike the works mentioned, it is not concerned with arriving at a phonemic inventory for the dialects studied.

The phonological properties of informal or relaxed speech are currently under investigation by several phonological theorists, notably Labov, Zwicky, Stampe, Bailey, Harris, Dressler, and Selkirk. Bailey has discussed several low-level processes (1973 to appear) and attempts to explain the generalization of some of these through a horizontal and vertical wave theory of rule propagation, which includes as essential parameters not only geographical relationship between and among speakers who manifest a particular phonological process, but also sociological relationships (age, status, etc.). Labov is also concerned with social determiners of variant pronunciations (1966, 1968, 1972) and attempts as well to relate synchronic variability to diachronic sound change (for a concise statement of his view, see Weinreich, Labov and Herzog in Lehman and Malkiel 1968:186). Labov (with Yaeger and Steiner 1972) has done extensive spectrographic studies of variable pronunciations by subjects in different social situations which he believes to reflect 'sound change in progress'. Stampe (1972) uses numerous examples from English casual speech in developing his theory of natural phonology, especially when discussing the feasibility of rule ordering (Stampe, Chapter 2).

The other phonologists listed above have studied low-level rules in regard to generalization of application as a function of

speed and/or style of speech. Harris (1969) proposes that rate is a determinant of several possible stylistic levels in modern Mexican Spanish. Zwicky (1971) discusses processes in his dialect of English which become more generally applicable along a continuum of greater to lesser formality. (I use 'formality' here as a cover term for slow speech rate and non-casual style). Also, Zwicky (1972) discusses types of and restrictions on casual speech processes. Dressler (1971) argues that the discovery of a process applying in casual or 'allegro' speech forms makes its postulation as a viable abstract rule much more plausible. Dressler also (1972) examines degrees of reduction in Viennese German, as taken from tape recordings of natural speech, and relates progressively greater reductions to lesser degrees of social pressure, with greater rate playing a somewhat secondary role. He argues for inclusion of physical postures and gestures as further determinants of speech styles. Selkirk (1972) relates increase in rate and consequent increase in phonological reduction to progressive deletion of exactly the kinds of grammatical boundaries postulated in Chomsky and Halle's (1968) phonological theory.

With the exception of Labov, the phonologists mentioned above use impressionistic phonetic transcriptions as data sources. Labov and Dressler, to the best of my knowledge, constitute the group that works from actual texts of unselfconscious connected speech; the others, while thereby arriving at valuable insights,

depend upon unreliable,¹ second-hand data and self-generated data which are subjected to introspection (or judgment by native speakers if the languages are non-native to the researcher) to determine their relative speed, style, and acceptability. As discussed by Labov (Linguistic Society of America Meeting, Stlanta, 1972), an individual's intuitions about his linguistic behavior do not provide a uniformly satisfactory mirror of his actual performance. Introspection about one's own phonological behavior and the rules underlying it, while far from a useless endeavor, is in some respects like thinking about one's thought processes: it is extremely difficult to achieve a perspective which allows for objective decisions. My preference is, therefore, for extracting generalizations from spontaneous texts, which procedure has been followed in this study, as outlined below.

Chapter III examines the degree to which speed and achievement: of careful speech forms are interrelated for the subjects in my study.

Lindblom (1963) has suggested that on the phonetic level a tendency toward vowel reduction is linked with increased rate of speech. Whether style of speech can be said to contribute to this tendency is apparently as yet uninvestigated. Chapter IV

¹"Unreliable" is intended here in the sense that since no permanent record is available to the researcher, information such as extended environment, overall style of speech, individual speaker characteristics, and relative stress level due to position in an utterance are consequently unavailable.

looks at the question of whether rate can be considered the only factor contributing to vowel reduction or whether there is possibly another variable, in some way related to style.

1.2. <u>Experimental Technique</u>. Since the results presented in all three major portions of this treatise are derived from the same body of data, I will now discuss the general experimental procedure used for the investigation.

1. Elicitation and recording of two styles of connected speech.

A. Conversational style.

The technique used here was designed to create the most favorable circumstances possible for carrying on a normal, relaxed conversation under conditions conducive to making acoustically satisfactory tape recordings.

Crystal (1969:96) states:

It is well-known that most people will behave differently if they are aware of being tape-recorded, and as a result the language they use simply cannot be taken as a reliable sample of spontaneous informal conversation. Even if it seems they have 'forgotten' about the microphone, the data cannot be trusted.

If his claim is interpreted literally and acted upon, then the making of recordings in an acoustically favorable environment is effectively precluded. While many dwellings contain rooms with enough padded furniture and rugs to prevent distortion due to reverberation, one still has to deal with unsatisfactory degrees of loudness, background noise, and interruptions which occur

in a normal everyday conversational situation.

It was decided therefore to make the recordings for this study in a good acoustic environment, using subjects who were familiar with recording equipment so as to minimize 'mike fright' as much as possible. Two of the subjects, RC and DJ, are recording technicians for the Ohio State Listening Center. The third subject, BN, is a graduate student in the OSU Department of Linguistics who has done work in phonetics and who has thereby become familiar with the laboratory equipment. All three of the subjects were previously known to the experimenter, so little artificiality was introduced into the situation through nervousness at dealing with an unfamiliar person. The experimenter and one subject at a time were seated in an anechoic chamber (Eckel Industries). A tape recorder (Ampex 350) was set up to record the ensuing conversation at a speed of 7.5 inches per second. An Altec 683-A microphone was used.

The usual precaution of ascertaining that the subject's mouth remain about the same distance from the microphone at all times was not enforced, so as to provide a freer acmosphere.

The subjects were encouraged to discuss any topic they wished and the experimenter prompted as needed. The subjects without exception became involved in expressing their views and seemed to feel little or no effect from the unusual environmental conditions, speaking naturally and fluently.

B. A more formal style.

It was assumed that a more formal style could be induced by asking each subject to read aloud. A spelling transcription was make of approximately five minutes of the original recorded conversation, selected on the basis of being (1) a section in which the subject was doing most of the talking, and (2) a section in which the subject was quite relaxed and seemed to be concentrating on conveying his thoughts and therefore not concentrating on his speech patterns.

Each subject was asked to read the transcription of his original speech in a style that would be clearly understandable to a listener. It was suggested to each that he might try to copy the style used by a television news announcer. The speakers were specifically instructed not to overarticulate. The two technicians had no difficulty in executing the instructions. The graduate student was able to do so after a further period of discussion.

Recordings were made of the subjects reading, using the same equipment described for the first recording condition. The data base then consisted of two approximately five-minute recordings for each speaker, one or more selected portions of the original conversation and a recording of the same material being read.

Each recording was played back on an Ampex 350 recorder and the resulting signal channeled through a Frøkjaer-Jensen Trans-Pitch meter and then into a Mingograf model 42-B inkwriter

7 ·

set at a speed of 100mm/sec. The result was a permanent continuous oscillogram. Wide-band spectrograms were made of all the recorded material on a Voiceprint 10-A spectrograph.

With the aid of these spectrograms, a phonetic transcription was made of all the recorded material, in IPA notation with a few modifying symbols. Each approximately 3-second section of the tape was listened to many times using a Tandberg loop repeater. The phonetic transcriptions of the material used in this study for both speech styles for all three speakers comprise Appendix A. The English spelling transcriptions, corresponding to the phonetic transcriptions line-for-line, make up Appendix B.

Measurements of formants 1, 2, and 3 of selected vowels (as explained in Chapter IV) were made. Durations of phrases were measured from oscillograms as explained immediately below, but durational measurements of individual speech elements were not taken from spectrograms or oscillograms, since the subjects were not controlled in any way in regard to the rate of speech used. It is known that environmental influences, position in a phrase, and rate of speech interact to affect the durations of individual speech sounds (Lehiste 1971, Gaitenby 1965, Kozhevnikov and Chistovich 1965). Therefore, it was decided that durational measurements of sounds in conversational speech would, even if averaged, provide no firm basis on which to make generalizations, especially since speech sounds differ very greatly in frequency of occurrence.

The oscillograms were used to determine speech rates. The duration of each uninterrupted speech sequence (inter-pause talkspurt, as discussed in Chapter III) was measured; the number of words contained in it was determined; and from this a calculation was made of the average rate in words per second of each span of speech unbroken by pauses. Rates were determined on the basis of number of actual English words per second, regardless of the length of the words. This procedure would obviously make a speech sequence containing several long words appear (to a person looking only at word-per-second calculations) to be spoken at a slower rate than an equivalent-duration sequence containing only one-syllable words, even if their rate as determined perceptually or in syllables per second were in fact identical. It was concluded that this influence was not a strong one, however, since none of the speakers displayed a tendency to string together polysyllabic words. Hesitation noises such as 'uh' were counted as words, since they took up at least as much time as words with lexical content.

It should be noted that for any given speaker, the reading and conversational versions of the text were not identical in every respect for the following reasons: (1) phrasing was not always the same in both versions; (2) sometimes the conversational recordings contained utterances which were too grammatically scrambled to be read intelligibly. These were altered slightly so as to resemble possible English constructions when the

transcription was made from the tape; (3) the same is true for stuttering and multiple repetition in the conversational version which were eliminated in the transcript, partly to facilitate continuous reading and partly because it was decided that the inclusion of speech errors might be interpreted unfavorably by the subjects; (4) when filler noises ('uh' and 'you know') were used to the near exclusion of recognized lexical items in conversation, some of them were omitted in the written texts, for the reasons stated in (3) above; and (5) subjects would occasionally mis-read and/or re-read portions of the script, thereby introducing new elements into the reading version of the text.

The two technicians, DJ and RC, are lifelong residents of Columbus, Ohio. All four of their parents were also born and reared in Columbus. Central Ohio is generally considered to constitute part of the upper boundary of the Midland dialect (Davis 1948). Little or no work has been published on the specific dialect area around Columbus: two characteristic dialect features of the informants used are 'r-fullness', and a lack of palatal onglide to [u] after alveolars. Columbus speakers frequently use non-apical [1] (written [44] or [64] in this paper, since it is realized as a very constricted, almost pharyngealized, high back vowel). These speakers also frequently show a raising of [6] to [1] before nasals.

BN is from Brooklyn, New York. His mother was born in Patterson, New Jersey and moved from there to Brooklyn; his father was born in the Bronx and moved to Brooklyn. BN's speech has such typical New York City properties as the use of a very low rounded back vowel in such words as 'water' and 'awful' ('uof', 'ofl) (Hubbell 60) and the sporadic changing of word initial [δ] to [d]. (Hubbell 37). His speech is almost completely r-full, which Hubbell (46) cites as uncommon for most types of New York City pronunciation, but Weinreich et al. (1969: footnote 63, p. 179) note that pronunciation of <u>r</u> in wordfinal and pre-consonantal positions is a new prestige pattern quite common in younger upper-middle-class speakers.²

It seems reasonable to assume that tendencies found in connected speech in these two rather dissimilar dialects might well be found in the connected speech of other speakers from these and other dialect areas.

²BN recalls family pressure against the use of r-less pronunciation.

CHAPTER II

2.1. This chapter deals with some of the phonological processes which were discovered to be in effect when phonetic transcription of naturally-spoken language in two styles were analyzed (see the previous chapter for a description of the experimental technique used). The questions this chapter addresses are: (1) what are some frequently-recurring differences between a naturally-spoken corpus and an 'idealized', maximally differentiated corpus, and (2) given two styles of speech, one theoretically more formal than the other, do they differ as regards application of processes?

2.2. The data used in this investigation were taken from phonetic transcriptions made by the experimenter of the six original recordings described in Chapter I. These six phonetic texts, which comprise Appendix A, were examined in detail, and a tabulation was made of the low-level phonological processes found to occur for each speaker in each condition, as determined by comparing the actual phonetic output with the author's maximally differentiated Midwestern pronunciation.

2.2.1. The above procedure does not reflect a belief that the Midwestern dialect is an absolute standard or is somehow phonologically neutral, since the forms actually produced

are not being compared to supposed Midwestern forms in detail. When I speak of an 'ideal' form, I mean a skeleton structure which contains all the segments normally realized in a careful pronunciation in a very great number of American English dialects. Granted that many small details of most precise pronunciation may differ from area to area and person to person: they are irrelevant to this study since no processes are discussed which depend on these very small differences. Only relatively gross differences between the 'ideal' form which are relatively easy to intermine and which I believe to be unambiguous in most cases are covered here. The ideal pronunciation is similar in some respects to the Platonic concept of ideal: ¹ several distinct maximally differentiated pronunciations of the word 'hand' exist which we all easily recognize to be tokens of the lexical item hand, just as dogs can differ from each other in many ways and yet be immediately recognizable as representatives of their class to those familiar with the concept. And just as a three-legged dog is recognized as differing from 'ideal', a realization of the word hand as [hæn] can be identified as missing a part. In other words, when an actual form differs from my most precise pronunciation of that lexical item, it will, in my opinion, differ from most people's maximally differentiated form in at least the same ways

¹No claims are being made about innateness or about the actual existence of an ideal pronunciation from which all realizations derive their being.

specified. Thus the ideal form corresponds in some sense to the standard concept of 'underlying form,' but differs in that it represents the union of pronounceable forms rather than being unspecified in those respects where actual pronuncuations are expected to differ.

2.2.2. Given the above remarks, it might seem unnecessary to discourse at length on the pronunciation of Midwestern American English. But in order to provide a reference for those who might want to examine what elements I consider to be present in an ideal pronunciation, I have compared below my concept of standard pronunciation with the pronunciation of words in my corpus with the Kenyon and Knott <u>Pronouncing Dictionary of American English</u> (1944). About 200 words of the beginning of each speaker's written text were compared with their pronunciation as listed in Kenyon and Knott, as well as selected other words throughout each text for which it was felt that there might not be a widespread standard pronunciation. Kenyon and Knott state (xxvii):

... for words that are in general colloquial use, it is intended to give first what is believed to be the most colloquial.

Since the less colloquial realization is often the more maximally differentiated, a pronunciation other than the first in order is sometimes considered ideal or basic. For example, the word 'difference' is listed first in Kenyon and Knott as [dlfrAns]. Since this word may have three syllables in careful speech, the trisyllabic form is considered maximally differentiated, even

though it is listed third in Kenyon and Knott. In a very few cases, my most careful style has less reduction than any form listed in Kenyon and Knott, as in the word 'prolong', which can easily be pronounced [piola] in careful speech. Kenyon and Knott list only [prə] as a possible realization of the first syllable.² Other differences between the Pronouncing Dictionary and the author's dialect are as follows:

1. There is some disagreement as to the quality of unstressed vowels; I occasionally indicate them as being higher than they are represented in Kenyon and Knott. Examples:

word	Kenyon and Knott	Shockey
scientist	'saləntIst	'saientIst
<pre>intelligent</pre>	In'telədzənt	in'telId ant
between	bə'twin	bi'tuin
establish	əs'tæblI∫	Is'tæb11∫

(Kenyon discusses the increase in frequency of [ə] in unstressed syllables in American Pronunciation 318 and 321).

2. Kenyon and Knott indicate that unstressed [i] approximates [I], while I think it remains much closer to [i] (in maximally careful speech). Examples:

²See Kenyon <u>American Pronunciation</u>, p. 198 for a rationale for this point of view. "It is a very small proportion of words to which the full vowel sound of the unaccented syllables can be restored without making the pronunciation wholly unnatural and even unintelligible."

word	Kenyon and Knott	Shockey
usually	'ju3UəlI	'ju y Uəli
frequency	'frikwənsI ³	'faikuənsi
depend	dIpend	dipend
remember	rImembər	, rimembər

(See American Pronunciation 253)

' 3. The stressed forms of 'of' and 'from' are [əv] and [fimm] for the present writer, but listed as [av] and [fram] in Kenyon and Knott (but see American Pronunciation ₹139).

4. The sequence 'ar' or 'arr' is often pronounced [GI] in the author's dialect; Kenyon and Knott list [ær] in such words as 'paralyzed', 'married', 'narrow', and 'comparison'. They note in section 94 p. xxxix that [GI] is "a widespread pronunciation in the North and Canada". (See also <u>American Pronunciation</u> & 361).

5. There is an occasional disagreement as to whether unstressed [Ə] plus-resonant or syllabic resonant should be considered basic, as in:

word	Kenyon and Knott	Shockey
even	'ivən	'ivn
capsule	'kæps1	'kæpsəl
passenger	'pæsndzər	'pæsend er
thousand	' θ aUznd	'θ aUzənd
(But see & 114 and American	n Pronunciation & 321	L).

³Kenyon used "r" for the American \underline{r} , usually represented as $[\mathbf{z}]$ in IPA notation.

6. 'With' is listed as [wlð] in Kenyon and Knott, whereas
I would transcribe the most careful form as [ulθ]. (Kenyon
discusses the problem in American Pronunciation 141).

7. There are two words which appear in the texts for which my pronunciations are simply different:

word	Kenyon and Knott	Shockey
disgust	dIsgnst	dIskəst ⁴
adamant	'ædəmænt	'ædəmənt

While these small differences do exist, a very high percentage of the pronunciations listed in Kenyon and Knott do not differ from my author's judgment of my most precise style. Only (5) has implications for the rules discussed below.

2.3. The considerations involved in this study differ from more abstract treatments of phonological questions in that they do not handle facts such as that the word 'business' (in the meaning 'financial endeavor, occupation') is related to the word 'busy' and that one underlying form might conceivably have to be postulated to generate both of them. A more abstract treatment than the present one might postulate a form [bIzi+nis], which yields ['bIznis] through reduction and perhaps a syncope rule. This study accepts ['bIznis] as the standard, careful pronunciation of the

⁴In this paper, I use [ə] for both stressed and unstressed schwa and [] for both stressed and unstressed retroflex schwa, thus having one symbol each for major vowel categories. Preceptible reductions are indicated by diacritics.

word in modern Midwestern American English, and records only deviations from that pronunciation as low-level phonological processes. In short, this study deals not with how different surface forms might be rule-related to an abstract underlying structure, but with how surface realizations can differ from their maximally differentiated (or 'ideal) forms. Suppose that the word 'business' were realized as [p^hiZnis], as might well happen considering rule F', word-initial devoicing, discussed below. It would be recorded that the initial, ideal [b] had undergone devoicing.

2.4. The following is an enumeration and discussion of the processes discovered to be in effect by examination of phonetic transcriptions. These processes will be presented in three main classes: (1) word-internal processes, (2) morphologically insensitive processes, and (3) external sandhi processes. This classification is a forced one in the respect that although many of these processes do indeed occur within the boundaries of entities normally called words, a great number of them seem to occur at the beginnings and ends of these words. This might well be considered a sandhi-type phenomenon, since it indicates that the speaker is 'aware' at some level of the word boundary, or perhaps of the possibility of sandwiching the utterance in question between periods of silence; i.e. there is an element of sequentiality which could be interpreted as non word-internal. Nevertheless, in this treatment, any intra-word processes (occurring within word

boundaries) is separated from processes which occur primarily across word boundaries. The distinction shall be that if a process could occur for a word said in isolation, it will be called an intra-word process.

To list each phonological process discovered for each speaker, sketch its interrelations with other rules discovered, and discuss its implications for phonological theory is a task beyond the scope of this paper which attempts primarily to discover consistent features of connected speech. Therefore, the following sections include a statement of the most frequent processes found to be in effect: processes common to all three of my subjects which seem to play a significant role in the shaping of connected speech. This technique of describing the most frequently-applying processes is perhaps the principal difference between this study and those mentioned in Chapter I; all of the processes discussed in this chapter have received notice at some time in the literature, as referenced for individual cases below.

Although many opportunities to do so present themselves, I will not attempt to sketch the implications fo these results for the various partial phonological theories now in existence. The connected speech as represented by my data; questions of theory should, I think, be treated separately. Consequently the results of this investigation will not be presented as supporting or disproving current hypotheses.

The processes to be discussed in Section 1 are:

A.
$$t > \phi / __ \#$$

B. $t > ? / __ \#$
C. $d > \phi / __ \#$
D. $> n / __ \#$
E. $v > \phi / __ \#$
F. $\begin{bmatrix} +obstr \\ +voi \end{bmatrix} > [-voi] / __ \#; \# __$
G. $\tilde{V}NC > \tilde{V}C$
H. $aI \\ a \\ > a > ^{^{1}}$
I. $h > \phi / \# __$

2.4.1. Processes occurring within word-boundaries

A. Deletion of word-final [t] (cf. Kenyon 1935:158, Bailey PRO:B-33). This process occurs frequently in unstressed words such as 'it' and 'but'. It is expecially common when the final [t] is preceded by a resonant [1] or [n] or by the voiceless consonants [p, k] and [s]. Examples:

DN-C (12)	(12)	ionit	II.
	panicked	næ ř Ik	

 5 Key: The first two letters are the initials of the speaker, the letter after the hyphen indicates the speaking style, C for conversational; R for reading. The number in parentheses indicates the number of times the process was found to occur for the speaker and style given.

BN-R	(17)	about	ə'bao
		felt	'fel
		just	'dzə s
DJ-C	(32)	not	'na
		spent	'sp۔n
		start	'staı
DJ-R	(23)	cat	'kæ
		fast	'fæs
		respect	rIs'p©k
RC-C	(7)	but	' bə
		wouldn't	'u∧đn
		broadcast	'bıag,kæs
RC-R	(Ø)	(see below)	

Speaker DJ applies this process much more than the other two speakers. DJ and RC both show a tendency to lose word-final [t] more frequently in conversational than read speech; in fact RC shows no instances of it when reading. Speaker BN shows little stylistic difference.

B. Word-final [t] becomes glottal stop. (Thomas 1947:40, Bailey PRO:B-36, Selkirk 1972:196). This may possibly be considered an intermediate step between fully realized t and ϕ . As evidence for this, there is occasionally a word-final t which gives the perceptual effect of being closed simultaneously at the glottis and alveolar ridge, especially when the t is to be released into another alveolar consonant. This possible simultaneous closure

should be further investigated. The mention of a following alveolar suggests that we are dealing here with an external sandhi phenomenon: it seems further that the change of [t] to [?] is conditioned by a following consonant or silence, the transcriptions showing only one case of its occurring before a vowel. This appears to be a case where a silence functions like a consonant, therefore the criterion for word-internal phenomena (p. 18) is somewhat misleading.

BN-C	C (13)	right	ral?
		lot	1a?
		out	æu?
BN-I	R (14)	that	် ခင်
		quote	k ^h uo?
		differe	nt 'tIfal?
DJ-(C (7)	heat	hi?
		Robert	'abo?
		not	na?
DJ-I	R (8)	start	stai?
		can't	kæ?
		put	p v ?
RC-0	C (15)	got	gaî
		bit	p13
		eight	eľ
RC-I	R (26)	remote	⊐i'mo?
		state	stel?
		eat	i?

RC shows a marked tendency to change t to ? before labial elements across a word boundary, as in 'remote broadcasts' [Ji'mo? 'blagkæs], but the other subjects do not seem to share this conditioning factor (again, signs of external sandhi). The glottal stop can alternatively be realized as laryngealization. The process t > ? occurs also very often within a word before a syllabic nasal.

Speakers BN and DJ apply this rule about the same number of times in both styles. RC applies it nearly twice as much when reading as when conversing. (This suggests that RC changes t to ? rather than deleting it entirely, whereas the others frequently delete. See A above.).

C. Word-final d drops. Final d is especially likely to be lost after another alveolar element (i.e. in a cluster) or before a consonant or silence. Examples:

BN-C	(10)	wide	noľ
		weekend	uik en
		realized	'ıiəlaIz
		mild	mall
BN-R	(9)	used	ius
		started	'staıcı
		wind	ųIn
DJ-C	(7)	third	θγ
		mind	maIn
		could	k ə

23-

DJ-R	(8)	should	ſv
		s and	sæn
		head	hε
RC-C	(Ø)		
RC-R	(2)	changed	t∫eInd∫
		would	uə

The above figures may not indicate that d-loss is at all a frequent process. This is because I have excluded the figures on 'and', which is an exceptionally frequent word and in which the final d essentially never appears. Excluding the nd clusters which 'flap' (see below, section II), the following distribution was found for the word 'and' with and without final d:

	retaining d	deleting d
BNC	3	25
BN-R	1	20
ÐJ⊷C	0	24
DJ-R	0	24
RC-C	0	47
RC-R	0	49

(The most frequently-found realizations of the word 'and' are [ɛ̃n] or [ə̃n] and [n].)

D. Word-final 'ng' becomes n. (Bailey PRO:B-18, Thomas 1947:64, Kenyon 1935:217). This is the process known in grammar school as 'dropping the g' and spelled with an apostrophe ('singin'') by those wishing to represent informal pronunciation. It is apparently

not a significant feature of this New York dialect; speaker BN shows only one instance of it.⁶ Examples:

DJ-C	(11)	promising	'pıamisin
DJ-R	(Ø)		
RC-C	(10)	going	'gouIn
RC-R	(Ø)		

This process is included not because it ranks near the others in frequency of occurrence but because it gives a clear indication of difference in style. For the two speakers who apply it at all, it supplies an absolute distinguishing criterion between reading and conversational speech; i.e. it applies occasionally in conversation, never in reading. The process applies differentially according to grammatical class: present participles undergo it, other forms ending in -ng do not.

E. [v]drops word-finally. Word-final v-dropping is nearly restricted to the word 'of' in my texts. Speaker BN applies it once to the word 'have'; and DJ applies it twice to 'have', once to 'alive' and once to 'believe'. Following is a tabulation of the number of times [v] is retained and deleted in the word 'of' for each speaker and each style:

⁶However, BN consistently pronounced the phrase 'going to' as [gərə], which, frequently spelled 'gonna' in written colloquial dialogue, is probably lexicalized as a unit in the speech of most Americans.

	v retained	v deleted
BN-C	16	10
BN-R	21	8
DJ-C	5	11
DJR	14	4
RC-C	7	7
RC-R	8	7

Only for DJ do we get a marked tendency toward pronouncing the word 'of' more carefully when reading.

Kenyon (1935: ξ 182) notes that 'the v of unstressed 'of' was formerly dropped before consonants (in speech and sometimes in spelling) as the <u>n</u> of 'an' still is.' For my speakers this feature seems to continue in the sense that there are no cases in which the [v] drops when the following sound is a vowel; of course, there are numerous cases of [v] before consonants.

F. Word-final devoicing of voiced obstruents. This very common rule in natural languages like German as well as in child language (cf. Stampe 1972:1) occurs for all three speakers but is far more frequent for BN than for the other two speakers. Examples: (element in parentheses represents immediately following segment in the text. Ø represents silence.)

⁷As a speaker of the same dialect as the two Columbus informants, I feel that is perfectly natural to say ['1 tsə 'æplz'] for 'lots of apples', even without a glottal stop before the [æ].' However, no cases of $\partial V_{\#} \rightarrow \partial \phi$ / ____ Vowel occurred in the texts.

BN~C	(21)	of	əy (p)
		yards	ialds (u)
		roads	rots (Ø)
		stands	stæts (n)
BN-R	(16)	walls	uaz (I)
		needs	nids (ə)
		mild	mailt (k)
		would	urt (s)
DJ-C	(7)	you've	iəf (g)
		said	set (b)
		large	laid (f)
DJ-R	(11)	kids	kIdz (Ø)
		families	'fæmlis (Ø)
		changed	t∫eInzt (Ø)
RC-C	(4)	of	əf (k)
		is	Is (p)
		used	iust (Ø)
		sounds	séõunts (Ø)
RC-R	(3)	ohms	oums (Ø)
		kinds	kaInts (ə)
		organs	'oggIn ^t s (Ø)

As is obvious, word-final devoicing does not require a following voiceless segment or silence, although either of these conditions creates a favorable environment for it. It is also evident that word-final devoicing is much more common for BN than for the other

two speakers. BN also exhibits word-initial devoicing, while the Ohio speakers do not. Examples:

BN-C	(8)	got	kat	(f)	
		but	рэ	(Ø)	
		very	feai	(s)	
BN-R	(20)	disgusting	ts'kəstiŋ		(i)
		that	θæ?	(t)	
		guy	kaI	(s)	

(Again the immediately preceding segment is indicated in parertheses. \emptyset = silence.)

G. Dropping of nasal consonants between vowels and consonants. This process occurs most frequently with nt clusters and with three-element clusters:

BN~C	(17)	don't	đót
		convinced	kin'vĨst
		camp	k æp
		turned	t~d
		kind	kãĮd
BN-R	(10)	wants ⁸ .	uəts
		campus	'kæpəs
		different	'tIfı́?
		want	ųĨt

⁸ & is the symbol used in this treatise for a very constricted high back vowel-like sound substituted for [1] by the Columbus speakers in some cases.
DJ-C	(25)	think	θĨk
		once ⁸	uəts
		wants	uəts
		unless	ə'le s
		control	h it jo
DJ-R	(25)	only	'õli
		changed	t∫ẽldzd
		once	uõs
		invest	ĩves
		accident	'æxsdê t
RC-C	(7)	spent	spê?
		maintenance ⁸	mẽlinə̃nts
		print	p ^h ıĨt
		$transferred^8$	'taætsfød
RC-R	(16)	malignancy	mə'lIgnətsi
		$transmitter^8$	'tıætsmlfø
		finger	fIgr

For all three speakers, there is an occasional epenthetic t in an original n-s cluster, which may create a favorable environment for the application of the nasal-dropping rule, to avoid long clusters. There are cases of labial clusters reducing (BN 'camp' 'campus') and velar clusters (DJ 'think', RC 'finger'). Also, speaker BN evidences nasal dropping before a voiced final consonant ('turned', 'kind'). (See BN-C above for transcription.)

Speaker DJ, for whom this process is the most frequent, also

applies it to simple VN combinations (prolonging > pr'laji; intelligent > $in't^{h}eudji$; ⁸ mean > mi' one > $u\bar{e}$; young > $i\bar{e}$). Since the following word frequently starts with a consonant, this may constitute a generalization of the rule across word boundaries. This process does not behave consistently as regards style; for speaker RC it applies much more frequently in the supposedly more formal style.

H. Diphthong reduction: (aI, aU a^{\uparrow} in relatively unstressed position). This process seems also to be affected by 'semantic stress' i.e. it applies more freely to low-information-content words than others.⁹ Examples:

i. aU-reduction

BN-C	(12)	about	ə'ba>^t
		now	na.7
		out	a>t
BN-R	(7)	about	ə'bæt
		found	fæ ` ĩ
		around	ơ'a> n
DJ-C	(15)	about	ə'ba's
		out	Q : t
DJ-R	(10)	about	ə'bæt
RC-C	(10)	sounding	sa. ^c ĩ Ĩ
RC-R	(18)	out	art

⁹Although some natives of Pittsburgh, Pennsylvania use this process quite generally, as far as I can determine from informal field work, e.g. 'house' [ha>s], 'cloud' [kha>d].

-30

ii. aI-reduction (Bailey PRO: B-26, Thomas 1947:153
cites [a] as a regular substitution in some Southern dialects for [a]]. None of my speakers possesses such a general rule--this substitution is a result of both low stress and little semantic content). Examples: ¹⁰

BN-C	(15)	I .	a<
		like	la <k< td=""></k<>
		kind	kấn
BN-R	(10)	I'm	æm
DJ-C	(25)	while	u ac o
		sometimes	'sə̃ta>mz
DJ-R	(6)	kind of	'xaĩ ə
		might	ma
RC-C	(21)	Ohio	ə'ha<
RC-R	(9)	I	a>

These reductions might well be viewed as part of the wellknown tendency of present-day English vowels to become centralized when in relatively unstressed position. I feel that they are of special interest since they involve a clear perceptual monophthongization and a falling together of the diphthongs [aI] and [aU] in relaxed speech.

For the two Ohio speakers, there is quite a marked difference between conversational (more reduction) and reading (less reduction)

¹⁰While transcribing, I have variously written the resulting monophthong as a fronted back vowel or a backed front vowel.

styles for [a]] monophthongization; and speaker BN shows a tendency in the same direction. This generalization cannot be made, however, for [aU] reduction.

I. Initial h-loss. This process is mentioned very frequently in books for learners of English (Jesperson 1912 (195):47, Kohmoto 1965:79; Thomas 1947:101) is discussed at length by Kenyon (1935:204, 105), and has been discussed more recently by Zwicky (1972:326). One would expect it to happen rather frequently, since it has been noticed so consistently. Surprisingly, it is not all that frequent.¹¹ The following figures give a tally of the number of times initial h is deleted for each speaker and each condition, as opposed to retentions in the second column:

	∦h deleted	#h retained
BN-C	7	34
BN-R	4	43
DJ-C	9	65
DJ-R	3	65
RC-C	1	36
RC-R	4	35

These deletions all occur in the words he, her, him, has, have, and had.

2.5. Processes not sensitive to word boundary.

The processes which follow occur within words and across

32.

¹¹If the initial sounds in words like when, why, where are considered a sequence of [hu], we could say that DJ and BN consistently apply $h \rightarrow \phi / _ u$; whereas RC does not apply it at all.

word boundaries. Discussed are the following:

I. Schwa loss

1. in the environment of a resonant (other than a vowel)

- 2. in the environment of a vowel
- 3. after an aspirated stop
- 4. in the environment of a fricative
- 5. near the glide u
- II. Flapping and flap-deletion.

I. There is a process or group of processes which, speaking very broadly, causes a schwa to become lost, usually when there is another element in the environment which might be perceived as syllabic, either through being one of the elements commonly thought of as potentially syllabic, such as [1] or [n], or through being a rather intense sound such as spiration or [s]. Since 'syllabic' is not a well-defined term, I am allowing myself the liberty of speaking of a purely perceptual phenomenon, although I hope to investigate in future studies the properties of perceptual syllabicity using synthetic speech so as to control the various parameters which could be involved.

I conjecture that the elements I perceive to be syllabic are attended by at least three characteristics: in the word 'elaborate' (as spoken by DJ) I perceive a syllabic [1] as constituting the first syllable, (i.e. the [1] in elaborate [læbərit] sounds longer than the average initial [1]. As mentioned in Chapter I, since my material is not controlled for tempo, it seems futile

a.	a	1	>	1
				7

BN-R (19)	finally	'faInli
		bicycles	ba <u>I</u> stklz
		gravel	'gxævl
BN-C (22)	people	pipl
		Alaska	l'æskə
		the lake	ð i' e ik
DJ-R (10)	believe	bl'iv
		repayable	JI'p¢IƏbl
		people	pipl
DJ-C	(9)	usually	iu3li
		a little	1'11
		elaborate	'læbrit
RC-R	(7)	little	'1Id1
		special	spc∫1
		articles	'oarIk1z
RC-C	(4)	handle	'hænl
		particularly	p ^h tIk1i
b. ən >	> n ¹²		
BN-R (2	23)	wouldn't	'uudn
		thousand	'θayzn
		right in	JaI? n

¹²The striking frequency of this process is a result of its being a possible reduction of the word and (ænd >ənd >ən >n), which all of the speakers use often and which speaker RC uses after practically every span of connected speech, as a filler word.

to measure and compare durations from these corpora. A controlled experiment would be much less cumbersome and more conclusive).

Incidentally, if this conjecture is true, then English could be said to have word-initial length oppositions for pairs such as 'light' [laIt] and 'alight' [l:aIt] at least phonetically.

In words like 'police' [p^h1'lis] the period of 1-colored voiceless frication after the release of the [p] seems syllabic; perhaps the fully voiced [1] after the aspiration-like period adds to this impression, since English resonants are normally at least partially devoiced after initial voiceless stops in English (cf. Lehiste 1964:77). Also, the period after the release of the [p] until the onset of voicing may well be longer than for a normal aspirated stop: again, this calls for experimental validation. Similarly, the [z] in the word 'places' [p^h]eisz] seems syllabic, perhaps because of the unusual word-final cluster, perhaps because of unusual length of the fricative cluster, perhaps only because I know it is a disyllabic word in its carefully-articulated form.

The schwa-submerging processes which I assume to belong together are the following:

 schwa plus resonant becomes syllabic resonant (Kenyon 1935:321, Zwicky 1972:282ff., Stampe 1972:55ff, Bailey PRO:B-15, B-20,
 B-21, Selkirk 1972:81, Thomas 1947:80). (These references hold for all of the processes discussed in section 1). Examples:

BN-C	(22)	and	n 1
		gotten	'ga?n
		itself in	It'selfn
DJ-R	(16)	even	'ivn
		capsules	'kæpslz
		certain	's7?n '
DJ-C	(41)	taken	'teIxn
		place on	'p ^h leIsn
		papa not	'papnat
RC-R	(48)	detection	ci'tek∫n
		Henderson	'hIn ^f 7 sn
		in	n
RC-C	(68)	Preston	h p zestn
		a new	n'u '
		wouldn't	'uvn
c.	əm>m, ər) > j (rare)	
BN-R		completely	km'plitli
BN-C		can	kn
DJ-R		the Mexican	m'ekskm ¹³
DJ-C		amount	mão
RC-R		and Marlena	maılinə '
RC-C		comparison	km'pe aisn
		talking	tokŋ

•

 13 followed by a labial.

.

d. $\Im r > r$

There is little evidence for the existence of a sequence [3+4]within word boundaries in English even in formal speech (Lehiste 1964). But since [3'] can be the reduced form of a sequence such as [3a], e.g. 'yer' [i3'] for 'your', it might not be out of the question to assume (if I may be permitted a theoretical assumption despite my initial claims) that is passes through a stage like reduced vowel + r which is unpronounceable in practice except for when there is an intervening word boundary, such as in 'Linda Ruth', which can be pronounced ['IIndə'xu0], even though it is much more frequently ['IInd 'u0]). Examples from the texts:

BN-R	(8)	for	fγ	
		already	∂'€ri	$(1 \rightarrow 0)$
		your	ið~	
BN-C	(2)	you're	ið	
		there	% %	
DJ-R	(7)	very	'və'i	
		their	૪	
		to rebel	tri'b€1	
DJ-C	(10)	or	5	
		the road	bo ' S	
		for	f ð~	
RC-R	(9)	or (x 9)	ð	

RC-C	(7)	they're	8	
		for	f dr	
		of remote	Ti'moy?	$(v \rightarrow \phi)$

For most [a] + consonant > syllabic consonant combinations, there is a corresponding consonant + a > syllabic consonant processes which occurs less frequently:

a'.	1 + a > syllabic 1	
DJ-R	intelligent	In'tel3 ^ë
RC-C	development	dt'velpmet
Ъ'.	$n + \partial > n$	-
BN-C	in the	In t
DJ-C	planet	p ^h lænt
ď'.	$rac{1}{r} + ho > \frac{14}{r}$ (This is an	especially common

process. It has been discussed by Zwicky (1972:287) under the name Ruh-reduction.)

BN-R	(1)	priorities	p ^h jal'ojris
DJ-R	(7)	congress	'kaggøs
		prolonging	pə' layI y
		irritating	'IstelsIj
DJ-C	(6)	several	'sevæl
		different	'dI f r n

 14 I am assuming that [] and [7] function identically in this process.

RC-R	(11)	microphone	'maIkrfon
		where if	hue af
		over at	'ovr?
RC-C	(9)	here at	'hI4?
		for a	fð.
		Professor Egea ¹⁵	h' p feso 'helə

2. Vowel plus schwa¹⁶ becomes monophthongized. This process can occur when two vowels come together in any manner: across a word boundary, when an intervening element has been deleted, etc. It does not preserve disyllabicity, although the resulting vowel can be long. Examples:

BN-R	(3)	being	biŋ
		kind-of	kãe (al>æ, nd > \tilde{c} , $\tilde{c} > \emptyset$). ¹⁷
		area if	'e ziəf
BN-C	(15)	I agree	al'gıi
		the academy	'ði∙'kæmi (r>Ø)
		beautiful	bi wfə1

¹⁵Name of Latin-American origin: pronounced locally [əhelə]

¹⁶ In this case, as perhaps in most, 'schwa' is a cover term for unstressed, reduced vowels. It is doubtful that the second vowel in 'being' ever gets as low as a true schwa.

¹⁷See below for flapping and flap deletion.

DJ-R	(10)	definitely	de fəli	$(\mathfrak{s} > \emptyset, \mathfrak{t} > \emptyset)$
		little	111	(r>Ø)
		got a	ga	(r>Ø)
DJ-C	(25)	scientists	salez	$(nt > \tilde{c} > \phi)$
		gonna ('goint to'	s∍)	$(n > \tilde{r} > \phi)$
		that'd (that woul	.d) əd	$(a > a; r > \phi)$
RC-R	(1)	be an	bin	
RC-C	(12)	it'd	Id	$(r > \phi)$
		you a	iə	
		on a	ວັ	$(n > \tilde{r} > \phi)$

Note that this process is used by all three speakers noticeably more in conversational style than when reading. 3. Aspiration plus schwa becomes aspiration plus voiceless vowel. This process occurs only after voiceless aspirated consantants. Examples:

BN-R	(3)	to go	t,go
		to Fairbanks	t,' fe Ibæ Jks
BN-C	(9)	to me	t, mi
		after the	æft¦tə (>ə/-#;18 d>d>r)
DJ -R	(4)	could	$k_{1}^{h}d$
		police	p ^h l'lis

¹⁸The fact that flapping (see below) can occur between the period of voicelessness and the following vowel tends to support the idea that the first vowel becomes simply devoiced rather than deleted.

.40



The statement made in section 3 above about the complete devoicing of schwa after a voiceless aspirated consonant may in fact be too categorical. In working with spectrograms, one is led to believe that the vowel has become completely devoiced, as in the following display:



Figure 2.1

Speaker BN-R, showing apparent loss of vowel after t-release in the word 'to'. Utterance: (Dawson) 'creek to Fairbanks'.

However, Professor R. Reddy (personal communication) has pointed out to me that in such cases there may actually be a few vocalfold flaps in the position where one would expect to find a reduced vowel. This very weak source does not have the duration or energy to excite the oral resonators, therefore no formant structure can be seen on a spectrogram. However, on an oscillogram such as produced from digitized speech at Carnegie-Mellon University (Working Papers in Speech Recognition No. 3, to appear) one can see that a small amount of low-frequency periodicity does exist in some cases, as in the following:



Figure 2.2

Oscillogram of same utterance shown in spectrogram on previous page, somewhat expanded temporally (interval between dashed vertical lines equals 40 milliseconds). This display shows what might be considered a very short, very reduced vowel after the t-release, as evidenced by about three irregular cycles. "Cr[iktⁿə f]airbanks".

It was observed that, especially for speaker BN, there were many short vowels in which formant structure was discernible for two to four vocal fold cycles in the same environment where the voiceless vowels were found in other cases, as below in Figure 2.3. (Note that a similar extremely short vowel is found after the \int in 'she', another potential vowel-loss environment):





Speaker BN. 'She wants to buy', showing unusually short
 vowels. (See text).

Thus it seems that naturally very short reduced vowels are susceptible to even further reduction. Kozhevnikov and Chistovich (1965:89) suggest that vowel loss at faster rates of speech is due to articulator inertia; i.e. given, as they postulate, that consonants take up relatively constant amount of time regardless of rate, and that syllables take up a consistent percentage of an utterance regardless of rate, then at fast rates of speech, there is not enough time in some syllables for the articulators to execute both the consonants and vowels, and the vowels are not achieved. Perhaps the same can be said for unstressed vowels in casual speech in English.

4. Fricative + schwas becomes syllabic fricative. This process applies to fricatives created by palatalization (see below, 'External sandhi processes') as well as others.

BN-R	(9)	difficult	'dIfkəlt '	
		university	iunivysri	`
		it's a	Its	
BN-C	(17)	its about	'Its bævt	
		that you	ðætſ	
		campus is	'kæmpəs	(z → s/_#)
DJ-R	(2)	officer	'afsơ	
		hit you	'hIt∫	
DJ-C	(1)	accident	'æksder	
RC-R	(10)	that you	'æt∫	
		maximum	mæksməm	

One occasionally finds the reverse situation, schwa plus fricative becoming syllabic fricative, as in:

> DJ-R its got skat (presumably t in it's > \emptyset) DJ-C if you fiu

The following sequence of segments seems to have a decided syllabic fricative, but its phonological analysis is not clear to me:

DJ-C people that's pipots The perceptual syllabicity of these so-called syllabic fricatives is not always completely clear: for example, DJ-R 'it's got' (above) sounds very much like the name 'Scott'. (It is certainly quite clear that the reduced vowel in 'it's' is no longer there). But loss of syllabicity is also a feature of the other schwa-plus-consonant combinations discussed here as well, as in the following:

DJ-C	planet	'p ^h lænt
RC-R	and then	nIn
BN-C	memories	memizz
DJ-C	operation	ap' zel∫n
DJ-C	irritating	'Istelcin

4,5

Examples of this type are infrequent, so I cannot deduce any conditioning factor for this loss of syllabicity. 5. [u] plus [ə] becomes [ə]. This normally occurs in monosyllabic words, so syllabicity need not be considered. Examples include the words 'was' [ə] 'what' [ət] and 'would' [əd]. Frequency of occurrence: BN-R 2, BN-C 10, DJ-R 1, DJ-C 1, RC-R 1, RC-C 3.

police

DJ-R

'p^hlis

These five processes, which could conceivably be different aspects of one process of perhaps a 'conspiracy' of several processes producing similar effects (cf. Kisseberth 1969) all tend to eliminate unstressed vowels. On the whole, these apply more frequently in conversational speech than in reading aloud. In total, there are 101 more instances of schwa-submerging processes in conversations (all three speakers combined) than in reading; actual figures are reading applications 223, conversational applications, 324.

2. The other very frequent non-word-boundary-sensitive process to be discussed here is flapping. (Stampe 1972:55, Bailey PRO: B-57, Selkirk 1972:197, Kenyon 19357(163). Flapping differs from the other processes discussed in this exposition in being very nearly obligatory in American English. It is discussed here as a preface to the remards to follow on unexpected flap-like segments and flap deletion. This process changes \underline{t} and \underline{d} to [r], the element commonly termed 'flap' in English; and \underline{n} , \underline{nt} , and

 \underline{nd}^{19} to the nasal flap [\tilde{r}]. ([r] with the velum lowered), in relatively unstressed positions and especially in the posttonic position.

word-internal 'us La BN-R (25) water 'sIri BN-C (19)city DJ-R (13)setting 'seri DJ-C (13) fruity 'fauri RC-R (18)better 1 pet 2 RC-C data 'de Icə (11)word-initial BN-R (\emptyset) BN-C (\emptyset) DJ-R (3) door to 'doara DJ-C (1)four to 'fare RC-R (5) 'gorə go to (3) RC-C over to 'orvrea

Examples from the Texts: Flap from t:

¹⁹One might alternatively claim that \underline{t} and \underline{d} drop in \underline{nt} and <u>nd</u> clusters, then the <u>n</u> flaps. One certainly can find cases of intervocalic <u>n</u> where an <u>nt</u> or <u>nd</u> is expected, suggesting that a stop-dropping rule in this environment is necessary at any rate. (Zwicky (1972) quotes S. Jay Keyser as suggesting the opposite phenomenon-<u>n</u> drops and the remaining <u>t</u> flaps).

	<u>Word-final</u>				
	BN-R	(37)	forgot exactly	f ə' garlgzækli	
	BN-C	(25)	it a	'Irə	
	DJ-R	(31)	but its	birIts	
	DJ-C	(20)	get even	glrivn	
RCR	RC-R	(32)	built a	'bIxrə	
	RC-C	(15)	about a	ə'bær ə	

There are consistently more flaps in the above category in the read version than in conversation for all speakers. I suggest two reasons for that: (1) I am only counting flaps which actually appear in the phonetic transcription, and many flaps are deleted in the conversational version (see below), and (2) Flapping at a word boundary implies planning ahead, i.e. one cannot flap a word-final \underline{t} unless one knows the next word is going to start with a proper element. This is much easier in reading since no creativity is involved and one knows exactly what one will say.

<u>Flaps</u>	Flaps from d					
word-in	word-internal					
BN-R	(10)	adamant	'ærəmint			
BN-C	(5)	yesterday 1	'iestərel			
DJ-R	(2)	body	'bari			
DJ-C	(3)	already	o'zeri			
RC-R	(6)	bladder	'blærð			
RC-C	(7)	radio	'zeIrio			

wor	d-	in	it	ia	1

BN-R	(6)	I don't	SIro?		
BN-C	(8)	three days	θgifes		
DJ-R	(9)	to do	təru		
DJ-C	(4)	they don't	derõn		
RC-R	(1)	the detection	ðəritek∫n		
RC-C	(3)	I did	əlrld		
word-fina	<u>al</u> :				
BN-R	(11)	would if	'uvrIf		
BN-C	(12)	side of	'salrə		
DJ-R	(7)	read about	'zerəbævr		
DJ-C	(7)	could ever	k vr' evø		
RC-R	(21)	good equipment	gvrilk ^h ulîmən		
RC-C	(10)	old, established	ogris'tæb11j		
Flaps fro	om nt				
word-inte	ernal				
BN-R	(1)	wanted	'uəĩld		
BN-C	(9)				
DJ-R	(2)	twenty	't ^h uə̃cí Ə		
DJ-C	(1)	interesting	'IrrestIy		
RC-R	(2)	center	'ser d		
RC-C	(1)	interesting	'Irrestiŋ		
word-final /					

BN-R, BN-G (9)

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49

۰.

DJ-R	(5)	percent of	pa' serəv
DJ-C	· (2)	want it	'uoĩi
RC-R	(4)	spent about	'speraba< t
RC-C	(2)	print out	'p ^h ılĩæot
Flaps :	from nd ²⁰		
word-j.	nternal		
BN-R, H	3n-C (Ø)		·
DJ-R	(1)	hundred	'həcət (1≫Ə)
DJ-C	(9)		
RC-R	(1)	sounding	'sarī
RC-C	(9)		
word-fi	21 inal		
BN-R	(10)	turned out	t≠ĩæ0
BN-C	(7)	kind of	'kæ≻ r̃əv
DJ-R	(8)	mind and	'malĩo n
DJ-C	(3)	and a	ærð
RC-R	(2)	kind of	kəlrəv
RC-C	(1)	and then	€`r̃en (ð>∅/#)

It appears to be far more common for the cluster <u>nd</u> to become [n] than go to a nasal flap, which might be described as an extra short [n] (see footnote 19).

²¹mostly from <u>and</u> and <u>kind of</u>.

	<u>Flaps f</u>	rom n		
	word-in	<u>itial</u> :22	2	
	BN-R	(20)	car needs	'koařids
	BN-C	(14)	I don't know	၀၁ ကြော'
	DJ-R	(2)	or no	ð, čo
	DJ-C	(1)	you know	iəro
	RC-R	(9)		
	RC-C	(1)	you know	iəro
	word-in	ternal		
	BN-R	(15)	anyway	'Iriuel
	BN-C	(9)	refineries	JI'falîr
•	DJ-R	(19)	money	'məři
	DJ-C	(8)	many	'meĩi
	RC-C	(6)	inner	'Irg
	RC-C	(4)	electronics	lek't ^h ıãrīks
	word-fi	nal.		
	BN -R	(14)	on arguing	ar'əigiuly
	BN-C	(7)	on a	arə
	DJ-R	(6)	on his	aĩIz
	DJ-C	(1)	down on	deoron
	RC-R	(10)	run it	JƏĨId
	RC-C	(4)	microphone and	malkoforen

.

²² mostly from you know.

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It is commonly assumed that the flapping gesture can be made only between vowels. Malecot and Lloyd (1968:264) state:

A flap is by definition a momentary, passing apicoalveolar single trill necessarily preceded and followed immediately by vowels.

Stampe (1972:55) includes 'r, nonapical 1, nasalized vowels, etc.' in the possible preflapping environments, and there are several cases of such in my data:

four to	'fə r ə
party	'paari
start adding	'stoar'ærIn
door to door	'doacadoa
piled all	'palłr ol
built a	'bI4rə
old, old	'ołcołd

Of course; the two sounds in question--r and 1-- are quite vowellike. Cases are also found of flapping before [h], supporting the notion that English [h] is essentially a voiceless vowel (Heffner 1964:151). Examples:

at home	ic'hôm
carpet here	'kaspichIs
but he's	bichIz

There are also cases of other extremely short alveolar stops which I have sometimes characterized with the flap symbol in my transcriptions, although I am aware that the physical mechanism for producing them is no doubt somewhat different. They occur: (1) after n and (2) after continuants (other than vowels, 1 and r) which do not involve the tongue tip. In the case of n, the tongue tip is actually at the point of articulation for a flaplike sound and only a well-defined oral release is necessary to approximate a flap; this could be thought of as an n with an abrupt release. For example, on the spectrogram of the phrase 'I kind of' by BN, reading style (Figure 2.4) I have marked off the duration of the stop following the n in 'kind', which is approximately 27 milliseconds:





Speaker BN 'I kind of' showing short alveolar stop after n (duration 27 ms.)



54

Figure 2.5

Speaker BN, 'Maybe that high off' showing flap before [h].
 (duration 38ms.)

In case 2 above, the tongue tip can move to the alveolar position during the articulation of the previous sound, thus facilitating a very short alveolar stop. Three examples are displayed in Figures 2.5 - 2.7 in the phrases "that high" by Speaker BN, "them to" by BN, and "going to" by Speaker RC.



Figure 2.6

Speaker BN, "What you want them to do," showing very short stop after m (duration 15.2 ms.) KHZ



Figure 2.7 Speaker RC, "Going to, " showing very short alveolar stop after (duration 34 ms.) [7]

2'. Flap deletion. In many environments where a flap would be expected, no closure at all is achieved. This is interpreted here, following the suggestion of Stampe (1972:56) and Selkirk (1972:200), as a deletion of the flap. Examples:

		[oral flaps]		[nasal flaps]
BN-R	(2)	somebody's 'səmbaiz	(2)	kind of k ã
		sort of 'solə		anyway IiucI
BN-C	(12)	forgot exactly fægalgzækli	(3)	anyway 'IiucI
		about it ə'bæIt		on the õ
DJ-R	(39)	but as bəz	(24)	many mĨi
		it even I'vm '		planets p ^h læəts
	B	populated 'papiəlcId		scientists salas
DJ-C	(48)	benefitted 'benəfId	(16)	money m õi
		it even I'ivm		gonna gə
		lot of la		kind of kæ
RC-R	(20)	little 111	(16)	one of uə
•		getting ^{gĨ} ク		and it æ̃l
		got out of		printed pjĨd

RC-C	(28)	better bcı	(9)	want to $\tilde{u}^{\tilde{e}}$
		magnetic mæg'n¢Ik		they're not dea
		about eight əba'el?		went out uẽ'a>t

Flap deletion seems to be consistently more frequent in conversational speech than in reading, except that DJ deletes nasal flaps more often in the reading condition.

2.6.C. External Sandhi Processes. Defined as processes which apply only at word boundaries, external sandhi processes are rare in my recordings of connected speech. I will describe below two which occur, one infrequently and one very frequently; palatalization and o - assimilation respectively.

I. Palatalization. This process is discussed in studies of abstract phonology (e.g. Chomsky and Halle 1968:230: Bailey PRO:B-11), where it is used to account for pronunciations such as $[\neg b \exists z \exists z \neg n]$ for abrade + ion and $[\exists z \exists z \lnot z \neg z \rceil$ for erase + ure. On a more superficial level it applies when a word-final t, d, s, or z is followed by the glide i, to yield $[t \int, dz, \int]$ or [z] respectively (Zwicky 1972:280). Examples from my texts are the following:

1. d # i. (total of 5 cases for all speakers)

BN-R	would you ²³	' <u>uv</u> zu
DJ-R	world, you	'urldzu
DJ-C	married you	'meaidzə
2. t # i. (tota	al of 16 for all sp	peakers)
BN-R	that you	'ðæt∫u
BN-C	put your	'pvtjə
DJ-R	hit you	'hIt∫
DJ-C	out you	'æotjə
RCR	what you	'huət∫ə
RC-C	that you	'ðæt∫
3. s # i. (tota	al of 10 for all sp	peakers) ²⁴
DJ-R	voice your	'voĭĴæ
DJ-C	keeps you	'kip∫ə
RC-R	impedence you	Im'pidnt∫u
RC-R	course you	'kə∡∫iu
4. z # i. (tota	al of 7 for all spe	eakers)
DJ-R	degrees, you	dI'gaizu
DJ-C	things you	'OIyzzIə
RC, C and R	use your	'iuza

II. $\ddot{\partial}$ - assimilation (Hubbell 1950:37). This process is quite frequent in connected speech. It causes a word-initial [$\ddot{\partial}$] to

²³_{BN} frequently changes affricates to simple fricatives.
²⁴_{BN} does not contribute any examples to 3 and 4.

assimilate to a preceding alveolar consonant or to [v].

I believe this process is different from simple word-initial 5 - dropping (Zwicky 1972), of which there are several cases in my texts, usually occurring after silence or velars. Since the words for which this process occurs are a closed class (the, they, them, these, those, that, this, there, then), I will not list specific instances of it for each speaker, but only the number of times it occurs:

BN-R	9'
BN-C	2
DJ-R	2
DJ-C	18
RC-R	3
RC-C	6

In all cases, initial ô is deleted more in conversation than reading, although it happens more than just a few times even in conversation only for DJ.

However, 5 - assimilation is quite common for all three speakers. I think the process instantiated below is an assimilation rather than a simple loss for the following reasons:

(1) As a hypothetical example, in a phrase such as, 'Run the quarter mile', which would be pronounced [' $a \ \partial n \cdot \partial k^h \ \partial a t s' mail].$ after $\partial -$ assimilation; the remaining consonant from the original consonant # ∂ cluster frequently gives the impression of extra length²⁵, as in the example. This lengthening suggests a geminate consonant consisting of the original pre-d consonant plus another copy of itself which replaces the d.

(2) Further, there are cases where d seems to have only partially assimilated to the previous consonant, for example:

BN-R		from	the	f xəmn ə
RC-C,	DJ-R	from	this	fimnIs

in which there is partial assimilation of point of articulation and total assimilation of manner;

RC-C at the ætdə in which there is assimilation of place and manner and only voicing remains unassimilated;

RC-C magazines that mægə'zin^tszæ in which there is again place assimilation without complete voicing assimilation.

Examples of complete 8 - assimilation from the texts follow:

²⁵See Chapter I for an explanation of why actual measurements were not done. (Hubbell 1950) apparently agrees that extra length is involved: "In negligent pronunciation, the initial fricative is sometimes assimilated to certain preceding consonants. In phrases like <u>all the men..., who's there...</u>, 11, nn, zz, sz (ss) may replace $\frac{1}{n}$, $\frac{1}{n}$, $\frac{1}{z}$, $\frac{1}{s}$, respectively. The double consonants that result are sometimes simplified."

<u>t # 3</u> 26	ï		
BN-R	(6)	out that	æot•ət
:		but the	bət ə
		aren't the	ozənt ə
BNC	(3)	that the	ðæt ə
		at the	æt•ə
DJ-R	(13)	that they	æt·el
		get these	gIt ^h iz
		what the	uətə
DJ-C	(12)	got this	gatIs
		respect the	ıls'pekt ⁰ ə
		out there	at ⁰ 1>ı
RC-R	(9)		
RC-C	(1)	out there	æoteı
<u>d # 2</u> 27			
BN-R	(2)	head that	'hed • æt
		argued the	'aıglədə
BN-C	(2)	rearranged the	117' EIndzdə
RC-C	(1)	word that	urdət

 26 The resulting <u>t</u> frequently has a very dentalized release, suggesting that the tongue has moved forward during the closure. This could be tested by examination of transitions in an experiment where phonetic environment could be controlled.

 27 Since BN changes [$\overset{6}{\circ}$] to [d] word-initially at apparently random times in other environments, it is difficult to interpret these data.

<u>s # ð</u>	,		
BN-R	(9)		
BN-C	(1)	course they	kэлs•е
DJ-R	(6)	Congress that	'kaygøs•æt
		once they	uəsel
		that's the	ðæs•ə
DJ-C	(1)	course the	kəas - ə
RC-R	(2)	impedence that	Im'pinsæt
RC-C	(3)	effects the	e'feks•ə
z # ð			
BN-R	(2)	suppose they're	sə'pozeı
BN-C	(5)	blows the	bloz•ə
		there's the	dez·i
		cause the	h k əz•ə
DJ-R	(9)	dudes that	dudzæ
		bills that	bIlzæ
		does their	dəz•cı
DJ-C	(9)	broads that	bıadzət
		size (of) the	salzi
		was that	uəzæt
RC-R	(3)	was there	u dze i
		years there	ilaz•ea
		magazines that	'mægəzlnz•əd
RC-C	(6)	shields the	'∫iəudzə
		cause they	kəzei

.

•

••

<u>n # Ə</u>			
BN-R	(27)	in the	Inə
		in there	Inei
		on the	on.9
BN-C	(26)	seen the	sin•ə
		gone the	gani
		isn't that	'Iznæt
DJ-R	(15)	on they	an·cI
		on this	nIs '
		on their	əncı
DJ-C	(17)	one (of) these	uəniz A
		and these	əniz (d
RC-R	(8)	upon the	əpan•i
		between the	p ^h , t ^h ui•ni
		and then	nIn (d

RC-C (6) in the In Ə and then nen ' line that laIn • Ə t

There are also a few examples of $1 \# \eth > 1$ and $v \# \eth > v$, but only a very few; the examples above should serve to illustrate the process under consideration adequately.

In some of the alveolar consonants derived from clusters listed above, there is no indication of extra length (e.g. BN-R 'in the' $[In_{\bar{e}}]$), because the perceived length of the elements in question did not warrant it. This suggests a degemination process, which

63

 $\rightarrow \phi$)

> Ø)

has been postulated for English by both Bailey (PRO:B-37) and Stampe (1972:56) for reasons independent of those stated here.

The example of 'in the' cited above points out that in some cases where 6 - assimilation and degemination have applied, there is no apparent distinction between the definite and indefinite article, i.e. 'in the' is pronounced similarly to 'in a'. For elements which flap (see previous section) the distinction between definite and indefinite may be preserved in some cases since it is much less likely that intervocalic alveolars derived from original alveolar-plus-6 clusters will flap than original intervocalic alveolars.

2.7. The processes outlined above constitute only the most frequent ones represented in my texts. Each speaker shows individual phonological characteristics, but a description of these has been excluded since my aim in this study was to determine some of the more general characteristics of connected speech. One obvious omission from this treatise is the subject of vowel reduction as a function of stress, position in an utterance, and style in connected speech. This subject certainly deserves careful attention and hopefully will be covered in a separate paper.

Other questions still to be investigated are 'Given that the processes discussed here generate more than one possible pronunciation for a sequence of sounds, is it possible to predict
when one is likely to find a given one of them'? Situations which arise in the texts make one doubt that this is possible.

For example, BN in the conversational text says, 'We would sit in the...in the highest balcony' [uiuwd'sItIni... ndə'həlist^h'bælkini], where the first occurrence of the words 'in the' is realized as [Ini] the second as [ndə]. The two lexically identical phrases have quite dissimilar phonetic shapes; in one word-initial one has assimilated to the preceding nasal, in the other it has become [d]; in one word 'in' has a vowel in it, in the other it is represented by a syllabic nasal; in one, the vowel of 'the' is [i], in the other it is [ə]. If one were asked to choose which of the realizations were more likely to come after a fully articulated t (as in 'sat' above), one would almost surely choose [ndə], since articulation of the sequence [tnd] involves little more than lowering and then raising the velum. But in fact, one finds that the [ndə] version occurs after a short pause.

DJ's conversational phrase, 'People not working are getting money' is realized as ['p^hipona'urkna'gIrIj'mani]. Notice that the first final -ing is realized as [n], while the second is [ŋ]. These words both occur in the same sentence in the same style and represent the same grammatical type, yet they are realized differently.

Secondly, given a particular phrase, can one expect it to reflect a homogeneous style? This seems unlikely just from the

phrase by DJ 'I haven't had', which is realized in reading style as [aIævnæd], but in conversation as [əbævnæd]. In the first, the word 'I' is realized as [aI], and both possible word-initial h's are deleted. In conversation, 'I', is pronounced [ə], but one of the word-initial h's is fully articulated. One would like to be able to associate style of speech with degree of reduction; but even though the same phrase in two different styles is realized differently, it is difficult to say which version is more formal or less reduced.

In short, there are many intriguing phonological inquiries still to be made about the properties of connected speech even from this rather limited corpus taken from a small number of speakers.

2.8. Phonological differences between styles.

It is generally believed (see e.g. Kenyon 1935:16 and Joos 1962:Chapter 4) that reading aloud is conducive to using a more careful style of speech than speaking conversationally. This study suggests that except for one phonological process which we are made aware of in elementary school: $> n /_\#$ (dropping the g), and which, perhaps because of this educational experience, two of my subjects are able to suppress at will when reading, the phonological differences between reading and conversational speech are more quantitative than qualitative. A given rule may apply more or less frequently in a given style than in another, but a different set of speech patterns is not brought into use.

(Perhaps if the subjects were induced to speak unnaturally in some respect, new phonological patterns would appear. The subjects in this study had no restrictions on their speech in either condition except that they were asked to speak intelligently when reading. See Chapter I). The processes outlined above which show noticeable differences in frequency of application in the same direction for all three speakers are monophthongization of vowel plus schwa and flap deletion. In both of these cases, the process was more widespread in conversational style. (It was pointed out earlier that deletion of unstressed vowels is, for all speakers combined, more general in conversational style).

Considered individually, speakers do display differences between styles as related to frequency of rule application. The following chart indicates differences between styles for individual speakers:

Speaker	Process	Style in which predominant	difference
BN	C > -voi / #	conversational	1.2
BN	$\nabla NC > \nabla C$	conversational	7
BN	+fric. > syllabic fric.	conversational	8
BN	u + ə > ə	conversational	. 8
BN	t > r / #	reading	12
BN	d > r / #	reading	11
BN	n > r̃ / #	reading	7
DJ	$\mathbf{v} > \mathbf{\phi} / _ \#$	conversational	7
DJ	aU > a	conversational	19
DJ	$\partial n > n$	conversational	25
DJ	v > Ø / #	conversational	14
DJ	t > r / #	reading	11
DJ	$n > \tilde{r} / V V$	reading	11
RC	t > ? / #	co nversational	11
RC	aU > a	convers ational	12
RC	$\mathfrak{d}\mathfrak{n} > \mathfrak{n}$	conversational	20
RC	VNC > VC	reading	9
RC	$t > r / V v_V$	reading	7
RC	$t > r / _ #$	reading	17

I have commented above on the unusual frequency of flaps in reading style. For most other processes, there is greater frequency of application in conversational style, as might be expected.

There are doubtless other differences between reading and

conversational speech, such as in phrasing (see Chapter III) and intonation as well as number of hesitation noises ('uh') and filler material ('you know') that give the listener cues as to whether a speaker is reading. Style is, of course, also associated with features on different levels of linguistic analysis such as choice of lexical item or grammatical construction (See for example Joos, 1962; Crystal, 1969). These elements may in themselves convey the level of linguistic formality which the speaker intends to utilize with little help from phonological mechanisms.

CHAPTER III

3.1. As mentioned in Chapter I, there is currently much discussion among phonologists as to the nature of fast or casual speech. Although there is interest in the phonological properties of non-maximally-differentiated speech, there is considerable vacillation of opinion as to whether speed or style or a combination of these serve as a trigger for the reductions that one encounters in natural connected speech and for the various degrees of reduction that the same phonological sequences can undergo. Zwicky (1971) discusses possible reasons for alternative pronunciations in "On Casual Speech" and a rather impressive example of variant pronunciations of the same phrase is offered by Stampe (1972:56).

Several scholars have used the term 'fast speech' to refer to relatively reduced sequences (Harris 1969, Zwicky 1972, Stampe 1971: Chapter 1. It is intuitively satisfying as well as in accord with experimental data (Lindblom 1963, Kozhevnikov and Chistovich 1965: Chapter 3) that as a speaker increases his rate of speech, he has less time to achieve targets, therefore segments may be non-maximally articulated or deleted entirely. Therefore, the term 'fast speech' may be a proper one for speech manifesting many imprecisely articulated forms. But Stampe (1972:1)

has made a convincing case for the position that phonological processes are basically mental, although their possible forms are strongly determined by the nature of the human nervous system and vocal tract. If so, utterances showing relatively greater amounts of phonological reduction may reflect an attitude on the part of their producer as to the formality of the speaking environment, and therefore the terms casual or relaxed speech may be more appropriate to describe reduced utterances. However, data from the previous chapter suggested that when texts taken in their entirety are examined, there are practically no differences between naturally spoken texts in two different styles as to types of phonological processes manifested and only small differences between them as to number of times the process applies. The technique makes the assumption that consistent style is used by a given speaker in a given recording situation, though as pointed out in Chapter 2 the term 'consistent style' may be somewhat difficult to define, considering the apparently random variations in phonetic realizations of the 'same' sequences one encounters between styles and within the same style.

In this chapter, an investigation is made of the rate-of speech characteristics of each ot the two styles of speech under discussion. Then a more specific study is made of individual rate and style relationships for each speaker: pairs of utterances containing very similar lexical material and spoken at similar and different rates of speech are examined to determine:

(1) whether greater reduction is characteristic of utterances spoken at relatively greater speeds, and (2) whether utterances spoken at nearly the same rate exhibit differences in amount of phonological reduction, which might be attributed to style.

3.2. The term 'degree of reduction' is rather hard to Simply counting the number of low-level phonological quantize. processes found in two different utterances and assigning a 'degree of reduction' score to each depending on the absolute number of processes seems unsatisfactory since a process which deletes an element completely seems to cause a greater amount of reduction than one which simply changes a feature of an element. Ideally, a reduction scale should be devised, where a value is assigned to each process depending on the number of features it changes, with complete deletion being assigned the highest value and the total amount of reduction of any given utterance scored on the basis of this weighted scale. In practice, however, the designing of such a scale seems to involve many arbitrary decisions. So in this study the admittedly unfelicitous technique of counting the number of processes manifested will be used to determine amount of reduction of a given span of speech. The number of processes evidenced in a given span is to some degree a subjective decision, depending on the theory in which the researcher is working and the possibility of determining unambiguously which processes are in effect in any particular case. For example, it was found that in connected speech there is a process

which changes schwa plus nasal to syllabic nasal in relatively unstressed positions. But there is also evidence of a process which devoices schwa after an initial aspirated voiceless stop (see Chapter II for examples). Supposing then, that the words 'to me' were pronounced [t^hmi·]. It is perfectly clear that they remain a two-syllable sequence, but not at all clear which element is assuming syllabic nature in the first syllable. Granted that this reduction can probably be considered one process, it is difficult to decide which it is. Considering the subjective nature of the decision, the reader may not always agree with the tally of number of phonological processes evidenced in a given span of speech as outlined below. It is hoped that in most cases the decisions will seem obvious and non-ambiguous.

3.3. Before looking into the question of whether reading and conversational styles are characterized by different rates of speech, I will discuss briefly the concept of speech rate.

Kelley and Steer (1949) state:

Rate of speaking is traditionally described as the number of words spoken per minute during a complete speech performance. In calculating overall rate of speech, the estimate includes intentional pauses and unintentional pauses as well as meaningful words spoken in the elapsed time. In extemporare speech the amount of nonspeech time may be considerable. Under such conditions, it is possible for the speaker to have a slow overall rate, yet word utterance within the sentences might be rapid for the most part.

They point out that a similar position had been taken by Jack C. Cotton (1936) who wrote:

Speech rate determinations which are made by timing a speech and calculating the average number of words spoken per minute, although useful for some purposes, are practically worthless in any scientific speech study.

Cotton proposes that a rate in syllables per second be calculated for <u>each</u> syllable in the utterance under investigation, thereby eliminating the deleterious effects of averaging. (He points out that averages can always be extracted from data in the form he advocates). Kelley and Steer claim that using words-per-minute or syllables-per-minute give highly similar rate estimates since the correlation between the two expressions of rate is about .84. They decide on words-per-minute as a measure in the article cited, with the innovation of omitting pause time in one form of rate determination, sentence rate. They report that their measure of sentence rate corresponds well with subjective estimate of rate of speech.

Another technique for determining rate was used by Osser and Peng (1964): 'Phonemes'-((sic) speech sounds) per-minute, in comparing Japanese and English average speech rates. Goldman-Eisler (1956) rejects the concept of speech-per-unit time as a determiner of rate. She states:

A continuous flow of speech rarely broken by periods of silence is felt to be fast speech, and speech the flow of which is halted by frequent pauses of hesitation is experiences as slow speech. The speed of the actual articulation movements producing speech sounds occupies a very small range of variation, 4.4-5.9 syllables per second.

The present study adopts the Kelley and Steer suggestion that only speech be included in determining overall rate of speech. Cotton's distrust of averaging is not shared by this writer, since it seems to me that for example the shortness of an unstressed syllable is predictable from English stress rules and is not to be considered a sign of change in rate, either from a production or perception standpoint. Rate, in my opinion, is a property of a <u>span</u> of speech and therefore averaging has been done on my data. Goldman-Eisler's suggestion was not investigated here, since the 'pauses' in my recordings were very often filled with comments from the experimenter (during the conversation) or were due to interruptions caused by turning pages (while the subjects were reading).

Speech rates are given in words per second, a measure which I found easier to conceptualize than words per minute. The former is obviously easy to convert to the latter by multiplying by 60. Rate was averaged over every phrase as determined by the speaker, i.e. over every span of continuous speech between pauses. Agnello (1965) calls such a span a 'speech unit', but notes that the term 'talkspurt' is of common usage in communication research. This seems a particularly appropriate term in that it implies nothing about the internal structure of the span of speech, which in this study was often not equivalent to any recognized grammatical unit.

3.4. In the following table are displayed the results of the investigation of speech rate for the three subjects used in this study, including total speech time, total words, number of talkspurts, average talkspurt duration, average words per talkspurt and average words per second, averaged over the entire corpus for each speaker in each condition. Included are the results of a T-test testing similarity of distribution of words-pertalkspurt and words-per-minute values between the reading and conversational conditions for each speaker.

Table	3.1	Speech	Rate	Results
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	Speaker D.J.		Speak	er R.C.	Speaker B.N.		
	Conver- sation	Reading	Conver- sation	Reading	Conver- sation	Reading	
Total Speech Time (sec.)	344.33	371.92	362 . 35	347.50	333.21	336.56	
Total Words	1674	1562*	1275	1236*	1498	1453*	
Number of Talkspurts	153	225	128	146	173	99	
Average Talkspurt Duration (sec.)	2.25	1.653	2.831	2.380	1.926	3.400	
Average Words per Talkspurt	10.94	6.90	9.96	8.47	8.60	14.68	
Variance	38.70	14.51	61.66	25.36	46.02	94.00	
T-Measure	7.81		1.89		6.03		
Average Words per Second	5.40	4.25	3.52	3.56	4.50	4.32	
Variance	13.11	.85	2.32	.86	1.75	1.34	
T-Measure	sure 4.54		271		566		

*Smaller number of words in reading version is due to deletion of repetitions, hesitation noises, and filler phrases, especially ' you know'.

.

Levels of St	ignificance	for T-M	easure (∞ df)		
.10 = 1.645	5.05 =	1.960	.02 = 2.326	.01 = 2.576	.001=3.291

Discussion.

Several tendencies are apparent in the first two speakers that we do not find for the third: speakers DJ and RC have, on the average, more words per phrase and both fewer and longerduration talkspurts during conversational speech than when reading. Also, the range of speed found in conversation is more spread than for reading (reflected in variance of average words per second). All of these tendencies are reversed for speaker EN. BN is the speaker of the New York dialect, but this fact is probably not to be considered significant.

There is little difference in average rate of speech measured in words per second between the two tasks for speakers RC and BN while a very significant difference in mean rates exists for DJ.

DJ and RC have a significantly greater amount of variation in size of talkspurt, in terms of number of words, in the conversational mode. BN has an equally significantly greater variation in words per talkspurt in the reading mode.

It seems, then, that this attempt to elicit two different styles has not succeeded in eliciting anything which is generally characterizable as two different speeds for all speakers. DJ shows the only case of conversational speech being on the average noticeable faster than reading.

One assumption that could be made is that the fastest and slowest utterances for each speaker in each condition might show strikingly different amounts of reduction. When the corpora at hand were investigated for this tendency, it was found that instead of a difference in degree of reduction, the 10 fastest and 10 slowest talkspurts for each corpus showed a marked difference in number of words per talkspurt. For each speaker, the very slow talkspurts consisted of only a few words and the very fast ones consisted of a great many. The following table summarizes the findings:

	Convers	ational	Style	Reading Style			
	Average Words Per Talkspurt	Average Average Words Duration Per of Talk- Irt Second spurt		Average Words Per Talkspurt	Average Words Per Second	Average Duration Per Talk- spurt	
<u>Speaker DJ</u> 10 fastest	11.6	8.28	.77 sec	7.2	6.31	.88 sec	
10 slowest	6.0	2.82	.47 sec	2.3	2.40	1.04 sec	
<u>Speaker RC</u> 10 fastest	12.1	5.36	.44 sec	10.7	6.0	.56 sec	
10 slowest	3.5	1.93	.55 sec	2.0	2.38	1.19 sec	
<u>Speaker BN</u> 10 fastest	7.9	7.43	.94 sec	24.2	9.0	.37 sec	
10 slowest	1.8	1.73	.96 sec	9.3	3.0	.32 sec	

Table 3.2: Fastest vs. Slowest Utterances

Despite the intrinsic interest of the above material, it does not advance the cause of examining the relationship between speech rate and amount of reduction, since it would clearly make no sense to compare the amount of reduction present in a group of phrases with a few words to the amount of reduction present in a group of phrases with many words.

3.5. In order to examine the frequency of low-level phonological processes in these texts, the following procedure was then followed:

1. Cases were found where the speaker talked at the same rate of speech when producing the lexically identical or nearly identical phrase in both styles. The utterances chosen were spoken at rates of speech not differing more than .5 words per second for any given pair. The experimenter compared the written and conversational versions of 13 sets of utterances for speaker BN, 12 sets of utterances for speaker RC, and 8 sets of utterances for speaker DJ, and a tabulation was made of the number of phonological processes found to apply in each case of the pair.

2. Cases were found where speakers used the same or nearly the same lexical material in two talkspurts, one each in each of the styles under discussion, when the rates of speech were different, i.e. there existed a greater than .6 word per second difference. (This decision is arbitrary, but there is no standard technique to determine the boundaries of speech rates, i.e. where 'slow' yields to 'medium' and 'fast'.) Results:

The examination of the equal-speed phrases showed that there

was a small but consistent tendency for conversational phrases to be more reduced than read phrases, given the same content and rate of speech. For BN, 11 out of 13 cases showed more reduction in conversational style; for DJ 6 out of 8; and for RC 9 out of 12.

On the following pages, I give phonetic transcriptions of lexically similar phrases spoken at different rates as taken from my texts. Following these transcriptions is my analysis of what processes have operated to shape each output and a tally of the number of processes I think have applied for each utterance.

Speaker BN

"I forgot exactly how much it costs" Conversation: ?aI frga Igzækli hæo mət $\int I$? k^hasts Reading: aI frgar Igzækli hæo mət $\int I$ t k^hasts Processes in conversation: "forgot": or >3'; t > r/ > ϕ ;

"exactly": $t > \frac{\phi}{k_1}$; "it" $t > \frac{2}{4}$. Total: 5

 $(t > r > \phi \text{ counts as } 2)$.

Processes in reading: "forgot": or >2; $t > r/_{--} #$; "exactly":

 $t > \phi/k_1$. Total: 3.

"And the island is really small; you could probably walk around it in an hour.

Conversation: ni æclandIz Illi smo iwd plali uok æondIt n

æuð

Reading: æni allandz zili smo imkn p^hjababli uok rayndId In

Processes in conversation: "and": and > an > an > n; "the":

 $n \# \eth > n$; "small": $1 > \phi/_\#$; "could": $k > \phi$; $U > \phi$; probably" [bəb] > ϕ (this process or collection of same is rather difficult to classify. It may simply represent an alternative pronunciation of the word <u>probably</u> which has become stylized and therefore not reflect a generalizable process). "in an" > \ni n \ni n > n. Total: 9 ("would" is not included since it does not occur in both styles).

Processes in reading: "and" $d > \phi/_\#$; "the": $n \# \eth > n$; "island is": $\exists z > z$; "small": $1 > \phi/_\#$; "can": æn > $\exists n > n$;

"it" t > d / #. Total: 5 ("can" is not included, since it does not occur in both styles).

Speaker DJ

"very elaborate seating" Conversation: $y \in ii$ læbð sirly Reading: feii Ilæbð sirly Processes in conversation: "very": v > -voi; "elaborate": $i > 1 > 1, + i > t > q/__#$; "seating": t > r. Total: 5.

Processes in reading: "very": v > [-voi]; "elaborate":

 $t > \phi/_{\#}, + a > ;$ "seating": t > r. Total: 4.

"And I'm not like many scientists, I very strongly believe that there is definitely life on other planets."

Conversation: æ eæ>ma lalk meri selez al vei stiangi bliveth

əa θer Is ədefəi laIf on əor plærets

Reading: ær æçna ləl mli salərlsts al vezi strangli blivdet er

Iz dif \tilde{p} ?defõli laIf en eðer p^hlæ Its Processes in conversation: "and": $d > \phi/_$ #; "I'm": aI > \mathfrak{E} ; "not": m # n > m; "many": n > \tilde{r} ; "scientists": nt > $\tilde{r} > \phi$; $\varepsilon + \vartheta > \varepsilon$; sts > ss > z; "strongly": $1 > \phi/__i$; "believe": $\vartheta 1 > 1$; "that": v # $\tilde{d} > v$; "there": $\tilde{d} > \theta/#_$; "definitely": $n > \tilde{r} > \phi$; $\vartheta + \vartheta > \vartheta$; "planets": $n > \tilde{r} > \phi$; $1 > \phi$. Total: 18. Processes in reading: "and": nd > \tilde{r} ; "I'm": $m > \phi _$ #; "not":

To cesses in reading: "and": nd > r; "I'm": $m > \phi _ \#$; "not": t > laryngealization / ___ #; "many": $n > \tilde{r}$; "scientists": nt > \tilde{r} ; "believe": bliv; "there": t # $\tilde{\partial} > t^{h}$; "definitely": $n > \tilde{r} > \phi$; "on": an > \tilde{r} n; "planets": $n > \tilde{r} > \phi$. Total: 11.

Speaker RC

"And also by using a low impedance you can use two conductors shielded".

Conversation: in ausop bal uzinp lou Impints ky juz t^hu k^hindekter

Reading: En also bal uzI el lou Impint ju kin juzt u k ondekt?

∫iurtd

Processes in conversational style: "and": ænd > æn > in; "also": 1 > u; "using": > n; "impedance": ən > n, s + i > \int ; "you": $u > a > \phi$; "can": kæn > kin > kn > kŋ; "shielded": 1 > u, $z + \int > \int$. Total: 13.

Processes in reading: "and"; $d > \phi / _ #$; "a"; >[eI] (hypercorrection,

not a genuine low-level process); "can": > kin; "conductors": z + $\int > \int$; "shielded": 1 > u. Total: 7.

"It goes down through your body and if you have any." Conversation: i good a un touis bain If is havei $Reading: <math>i good a un \theta_0^{J}ui$ bain If is havei Processes in conversation: "it": $t > \phi / - \#$; "down through": $n\theta > nt\theta; \theta_J > \theta;$ "your": $i > \tilde{r} > i$; "body": $d > r > \phi;$ "and": and > an > on > n; "you": u > s; "any": $n > \tilde{r} > \phi$ Total: 11.

Processes in reading: "it": $t > \phi / _$ #; "your": $o_x > \gamma$; "body": $d > f > \phi$; "and": ænd > æn > $o_n > n$; "you": $u > o_i$; "any": $n > \tilde{r} > \phi$. Total: 7.

Examination of the different-speed phrases indicated that the same tendency holds for conversational speech to be more reduced; but the conversational speech was always the faster of the two being compared. For BN, 7 out of 10 pairs show more tendency of the faster member, i.e., the conversational utterance, to reduce; for DJ this is true for 8 out of 9, and for RC 4 out of 6. Examples: Speaker BN

"Yes, the wind blows the wrong way, you can smell it." Conversation: is do uIn bloz o say ueI kn smellt Reading: is do uInd bloz do say ueI in kæn smellt Processes in conversation: "the": $\eth > d$; "wind": $d > \phi / _ #$;

"the": $z \# \delta > z$; "way, you": $I + \vartheta > I$, $u > \vartheta$; "can": æn > ϑ n > n. Total: 7.

Processes in reading: "the": $\partial > \theta / s_{dot}$ (twice). Total: 2.

"Yugoslavia I saw through a jaundiced eye, as they say." Conversation: iugoslavio al so $\theta u \partial dz un - \partial dz \partial dist$ al $\varepsilon s \partial \varepsilon l s \varepsilon l$ Reading: iugoslavio al so $\theta u \partial dz \partial dist$ al æz del sel Processes in conversation: "Yugoslavia": $o > \partial$; "through":

θ x > θ; "jaundiced": VNC > VC; "as": æz > εz. Total: 4. c
Processes in reading: "Yugoslavia": o > ə. Total: 1.

Speaker DJ

"I think if J.F.K. was alive we wouldn't have Vietnam". Conversation: $a \in \widetilde{Ik}$ If $\exists dz \in I \in f$ ke $I \subseteq z \equiv \exists a I \subseteq u \notin dn$ hævil?nam Reading: aI $\in \widetilde{Ik}$ If $dz \in I \in f$ k^h I $u \ni z \equiv \exists a I \vee u \subseteq u \vee dn$ hæv $i \equiv \Im$ nam Processes in conversation: "I": aI > a; "think": VNC > \widetilde{VC} ;

"alive": $V > \phi / _ \#$; "wouldn't": $t > \phi / _ \#$. Total: 4. Processes in reading: "think": $\widetilde{V}NC > \widetilde{VC}$; "wouldn't":

 $t > \phi / \#$. Total: 2.

"And it's non-repayable; you don't have to pay it back or anything."

Conversation: $\tilde{c}n$ Is $n\tilde{e}_{I}peIb1$ $i\tilde{o}$ hæt^h pei I bæk $\tilde{c}lhIy$ Reading: $\tilde{c}Is$ $n\tilde{e}_{I}p^{h}eIb1$ iw dot hæfte peI bæk of $Ii\tilde{e}Iy$ Processes in conversation: "and": $\tilde{w}nd > \tilde{w}n > \tilde{c}n > \tilde{c}$; "it's":

$$t > \phi; \text{ "non-repayable": } a > \vartheta; eI + \vartheta > eI; \vartheta l > 1;$$

"you": $\vartheta > i; \text{ "don't": } d > r > \phi; \text{ "to": } V > -voi / t^{h};$
"or": $oi > \vartheta;$ "anything": $n > r > \phi, nt > r > \phi, \theta > h.$
Fotal: 9.

Processes in reading: "and": \tilde{a} nd > \tilde{a} n > $\tilde{\epsilon}$ n > $\tilde{\epsilon}$; "it's": t > ϕ ; "non-repayable": a > ϑ ; eI + ϑ > eI; ϑ l > 1; "don't": VNC > VC; "it": $t > \phi / _ \#$; "anything": $n > \tilde{r} > \phi$. Total: 11.

Speaker RC

"Because all the time you were on transmitter duty you couldn't relax; I never could." Conversation: kəzəətaIm iəzən t jæn^tsmIrr duri iə k^hint illæks aI nevrkvəd Reading: bik^həz aldət^haIm iu uron t^hætsmIrr duri iw k^h dn

zilæks ?al nev kvd

Processes in conversation: "(be) cause": a > a; "all": $1 > \phi$;

"you": u > a; "transmitter": ns > nts; "duty": t > r;

"you": u > a; "couldn't": $d > \phi / _ n$. Total: 6.

Processes in reading: "the": 3 > 9/#; "transmitter": ns > nts;

VNC > \widetilde{VC} ; "couldn't": t > ϕ / #. Total: 4.

"Oh, you usually get better frequency response for one thing, and they're built a little bit more rugged." Conversation: ou is iuzoui gI? ber faik^huentsi aisponts for uent@erlg n d^oea bllre 111 bl? mea egid Reading: ou iu iu uu gI? berr faik^huintsI aispan^ts for uent⁰Ig æn dea blurelli bl? mea egid Processes in conversation: "you": u > e; "usually": 1 > u; 1 > u; "get": e > I; "better": $t > r > \phi$; "frequency": ns > nts; "response": ns > nts; "for": oa >r; "one thing": n0 > nt; "and": ænd > æn > en > n; "they're": nd > ndd; "built": t > r; "little": $t > r > \phi$; "bit": $t > ?/_{#}$. Total: 17.

Processes in reading: "usually": $\exists 1 > 1 > u$; "get": $t > ? / _ #$; "better": t > r; "frequency": ns > nts; "response": ns > nts; "for": $\exists x > \sigma$; "one thing": $n\theta > nt\theta$; "and": ænd > æn > $\vartheta n > n$; "built": 1 > u; 1 > r; "little": $t > r > \phi$; "bit": $t > ? / _ #$. Total: 12.

3.6. These data suggest that rate determines degree of reduction in that given two similar utterances, one spoken at a rate relatively faster than the other, the faster one will be the more reduced. But style plays a significant role also in that given two utterances spoken at the same rate, the degree of reduction is not always identical, the more relaxed the style usually showing more reduction. Therefore one must conclude that both rate of speech and style of speech contribute substantially to degree of low-level phonological reduction.

CHAPTER IV

4.1. It is suggested by Lindblom (1963) that the production of a given vowel involves an invariant signal or set of signals sent to the articulators whenever the speech producer tries to produce a token of this vowel. The fact that we see variation in the actual acoustic output is, according to Lindblom, due largely to inertia of the articulators, which are affected by the nature of the other sounds preceding and following the one being examined and by the rate of speech which the speaker is using. The following study was designed to investigate the question: "Given a relatively fixed set of environmental influences and a relatively invariant rate of speech, can one detect influences of <u>style</u> of speaking on vowel formants?".

4.2. As mentioned in the three previous chapters, each of the three subjects for this investigation was induced to produce nearly the same lexical sequences in two different styles, once in conversation with the experimenter and once as read from a typed script. A determination was made of rate of speech of each connected sequence of verbal material in each style, the unit of measure being words per second. (See above for a discussion of speech rate. This technique may be criticized in that it does not allow for variation in rate within a given speech spurt.)

For this study, the pairs of talkspurts described in Chapter III which contained nearly the same sequences of words and which were spoken at a rate of speech not differing by more than .5 words per second were again examined. (Since these utterances were of quite different lengths, the actual number of them used is not significant here. The total number of vowels measured is recorded in Tables I-IV. It was hoped that by choosing utterances spoken at so nearly the same speed the speech rate variable would be eliminated, insofar as it can be in natural speech.

As stated in Chapter I, spectrograms were made of all texts for all speakers; those corresponding to the equal-rate pairs of phrases were isolated for this study, and measurements were made of vowel formants 1, 2, and 3. These measurements were made only in cases where the identical contextual influences were, hypothetically, in operation in both cases; i.e. if vowel V appeared between elements X and Y in one style, it appeared between the same elements (in the same word, etc.) in the other style. It was presumed that with environmental influences being nearly the same for each style, any systematic differences in formant measurements could reasonably be attributed to style.

The measurements of the three lowest formants were made at a point determined to be the point of maximal achievement of the vowel target in question. If the vowel attained a steady state, the measurement was made from the middle of the steady state; if not, the measurement was made at the point where the onglide

ceased and the offglide began.

Two unavoidable problems with this particular type of investigation are that: (1) it is impossible to control for how many tokens of each vowel are measured. Given the constraints that the utterances must be the same length and speed, and that any given vowel must be measureable in both styles in a specific environment (if it is to be used at all), it does not seem practical to further demand that an equal number of tokens of each vowel type must be used, especially since vowels vary a great deal in the frequency with which they occur and the texts are relatively short. (2) Since the above is true and since, further, a little-represented vowel may occur, say, five times before an [1] and not at all otherwise, the vowel charts made from these measurements are not to be expected to be identical to traditional vowel charts made from recordings of identical numbers of vowels spoken in identical environments. The basic question is whether the vowel formant charts derived from vowels spoken in two different styles differ from each other, not whether they differ from standard vowel formant charts.

4.3. Results. Tables of average formant 1, 2, and 3 frequencies for each speaker in each condition and values averaged overall speakers in each condition appear on the next pages. Following them are acoustical vowel diagrams reflecting average values of F1 and F2 for each speaker, with both styles being represented on the same diagram. The fourth chart shows the average for all three speakers.

Table 4.1

I AVERAGE VOWEL FORMANT FREQUENCIES FOR SPEAKER DJ (Vowels in Random Environments)

Vowe1		Read	ling		Conversation				
	F1	F2	F3	(n)	F1	F'2	F3	(n)	
i I e ae a J o u ə	308 463 532 600 606 516 554 260 525 422	1868 1505 1468 1514 1081 900 1143 1550 1278 1167	2492 2277 2225 2206 1950 1933 2186 2150 2125 1825	6 11 7 9 4 3 7 1 9 3	313 439 521 636 594 533 536 300 481 450	1858 1477 1375 1444 1113 1083 1161 1480 1272 1175	2481 2348 2289 2392 2069 2066 2289 2400 2317 1933	6 11 7 9 4 3 7 1 9 3	
							,		

Table 4.2

II AVERAGE VOWEL FORMANT FREQUENCIES FOR SPEAKER RC

(Vowels in Random Environments)

Vowe1		Read	ling	ing			Conversation				
	F1	F2	F3	(n)		F1	F2	F3	(n)		
li	372	1982	2499	19		393	1921	2513	19		
I	449	1620	2316	21		473	1618	2487	21		
i	425	1688	2425	2		375	1775	2638	2		
e	579	1550	2413	6		520	1567	2382	6		
æ	615	1644	2435	13		542	1644	2490	13		
а	634	1194	2209	8		588	1159	2363	8		
ο	638	1100	2275	2		538	1175	2438	2		
0	575	1194	2256	9		519	1239	2406	9		
u	370	1554	2300	6		383	1708	2363	6		
ł	525	1600	2250	1		350	1700	2400	1		
Ð	524	1462	2411	19		509	1406	2403	19		
	459	1364	1877	14		476	1368	1804	14		
	I	1		}		l					

Table 4.3

III AVERAGE VOWEL FORMANT FREQUENCIES FOR SPEAKER BN (Vowels in Random Environments)

Vowe1		Read	ling		Conversation				
	F1	F2	F3	(n)	F1	F2	F3	(n)	
i I & æ a J O U J	324 387 512 650 692 613 554 388 404 444 425	1919 1671 1456 1602 1138 1033 1125 1275 1483 1447 1396	2410 2468 2419 2394 2492 2675 2329 2375 2516 2434 1857	24 19 12 9 6 6 6 2 6 17 7	351 404 477 561 608 466 542 475 404 430 475	1836 1675 1366 1661 1133 1029 1121 1238 1371 1375 1439	2501 2408 2498 2336 2414 2763 2333 2288 2283 2415 1977	24 19 12 9 6 6 6 2 6 1.7 7	
	425	1396	1857		4/5	1439	1977	/	

Table 4.4

IV AVERAGE VOWEL FORMANT FREQUENCIES FOR ALL SPEAKERS

(Vowels in Random Environments)

F1F2F3(n)F1F2F3i340.821936.942454.5949362.761871.942503.27I428.921614.222364.2251439.781609.022427.65c534.001482.002363.0025500.001417.002412.00æ620.971594.352356.4531575.001591.132416.94a647.221150.002245.8318595.831140.282314.44>590.911009.092400.0011552.271050.001513.64o562.731159.092253.4122530.911181.822348.86u377.691521.152388.4613586.531535.002328.85	Vowe1		Readin	g		C	on	
i340.821936.942454.5949362.761871.942503.27I428.921614.222364.2251439.781609.022427.65c534.001482.002363.0025500.001417.002412.00æ620.971594.352356.4531575.001591.132416.94a647.221150.002245.8318595.831140.282314.44>590.911009.092400.0011552.271050.001513.64o562.731159.092253.4122530.911181.822348.86u377.691521.152388.4613586.531535.002328.85		Fl	F2	F3	(n)	F1	F2	F3
433.331383.332333.333433.331391.662325.00493.851419.442362.2245473.891367.442390.56446.871348.961864.5824472.921364.581870.42	i I æ a J O U Ə	340.82 428.92 534.00 620.97 647.22 590.91 562.73 377.69 433.33 493.85 446.87	1936.94 1614.22 1482.00 1594.35 1150.00 1009.09 1159.09 1521.15 1383.33 1419.44 1348.96	2454.59 2364.22 2363.00 2356.45 2245.83 2400.00 2253.41 2388.46 2333.33 2362.22 1864.58	49 51 25 31 18 11 22 13 3 45 24	362.76 439.78 500.00 575.00 595.83 552.27 530.91 586.53 433.33 473.89 472.92	1871.94 1609.02 1417.00 1591.13 1140.28 1050.00 1181.82 1535.00 1391.66 1367.44 1364.58	2503.27 2427.65 2412.00 2416.94 2314.44 1513.64 2348.86 2328.85 2325.00 2390.56 1870.42

Figure 1: Speaker DJ.

For this speaker [i] shows nearly identical formant structure in both styles, as does $[\sigma]$. $[\varpi]$ is both lowered and backed in the conversational style, relative to reading style.

In all other cases, the vowels taken from the conversational corpus show a greater amount of centralization, vowel for vowel, than those taken from the reading corpus. (Centralization is defined here as position relatively closer to an imaginary center of the cluster of symbols representing vowel formant positions on these charts, not movement towards schwa, especially since schwa itself does not reflect a stable target). I will comment later on the unusual placement of [u] on this diagram in respect to standard formant diagrams.

Figure 2: Speaker RC.

This speaker also shows a centralized effect for conversational vowels with reference to vowels from the reading style. Except for [i, i, u] and [>] the differences between the two sets of vowels seem to lie largely in F1: the values lie in approximately the same line along the absissa, but differ as to their value on the ordinate. Again, the 'displacement' of [u] is in evidence.

Figure 3: Speaker BN.

Speaker BN shows nearly the same formant values in both styles for the vowels [I] and [o]. Other vowels show centralization for conversational style relative to reading. The above comments



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about [u] apply here as well.

Figure 4: All speakers combined.

When formant values for all three speakers are averaged, it appears that [I, u] and [v] have approximately the same formant structure in both styles. Averaging causes reading [ə] and conversational [c] to seem to have nearly the same formant structure, although this is not true for any single individual. Except for the vowel [c], the average difference in the two groups of vowels rests primarily in F1, as was noted for RC above.

4.4. Discussion. These data suggest that, when other factors are eliminated as much as possible, vowels tend to be more centralized when a person speaks in a relaxed conversational style than when he is reading aloud. Lindblom's theory assumes that given an individual speaker's vocal tract characteristics, the targets for which he is aiming, and the rate at which he is talking, the degree of reduction of the vowels he will produce can be rather precisely predicted. The results of the present investigation suggest that perhaps, given a rate, there is a range of degrees to which a vowel target may be achieved on the average; and that the more 'peripheral' values may be related to a relatively more formal style of speaking, the more 'centralized' ones to a relatively more relaxed style. Lindblom's calculations are aimed at discovering only the upper bounds of degree of target achievement given a speech rate; i.e. they would supply an answer for a question such as "When speaking at such a rate and under this particular set of other conditions, what is the most peripheral possible achieved value for a given vowel?" One can, of course, achieve less than the most extreme values, and the results described above imply that whether one does is, at least in part, governed by the style in which one is speaking.

For all speakers, differences between vowels in reading and conversational styles are not large, suggesting that these are second-order effects and not to be considered at all equivalent to the very large differences between vowels spoken in isolation and vowels in general as they appear in connected speech. Fig. 4 shows F1-F2 values for vowels averaged over several male speakers, as taken from Peterson and Barney (1961) (indicated by x's). These represent carefully articulated vowels. Even taking into consideration the bias introduced into the data from uncontrolled phonetic environment and variable number of tokens, it seems that the vowels taken from running speech are strikingly centralized relative to this particular set of carefully articulated vowels. This observation has been made by other researchers in the past, e.g. Joos (1948) and Stevens (1963).

While centralization is found for all speakers in conversational style relative to reading style, it seems that identical types of centralization are not used by all three. Let us assume that the following four characteristics describe a set of centralized vowels, relative to some other arbitrary more maximally realized set:

 F1 has a smaller value for the mid and low vowel (causing 'upward' movement on the vowel diagram).

F1 has a larger value for the high vowels (causing 'downward' movement on vowel diagram).

F2 has a smaller value for the front vowels (causing 'right' movement on vowel diagram).

4. F2 has a larger value for the back vowels (causing'left' movement on vowel diagram).

Speaker DJ shows, on the average, characteristics 3 and 4; RC shows characteristics 1 and 4; and BN shows characteristics 1 and 3 for conversational vowels relative to vowels found in reading. Thus it is not possible at this time to arrive at a rigorous definition of centralization which might be expected to apply to all subjects in relaxed speech as compared to a slightly more formal style.

The question of the fronted [u], as was noticed in all three of my subjects, is no doubt of less general interest, but may have some practical implications, e.g. for automatic speech recognition. [u] is a relatively infrequent sound, occurring a total for all three speakers of only 26 times (13 in each style). But it occurs in a variety of environments, not only those which would tend to cause a high F2. It was mentioned by House and Stevens (1963) that the vowel [u] has 'appreciable deviation in F2 above the target value' in the environment of non-rounded consonants. They suggest that this is the result of the lips being relatively
slow to move compared to the tongue. Examination of acoustical vowel diagrams published by Labov, Yaeger and Steiner (1972) shows a great deal of fronting of [u] regardless of speaking style used by their subjects, although this tendency is not universal: it is common for speakers from Texas, Georgia, and North Carolina, uncommon for speakers from the Northeastern United States. These scattered observations suggest that the tendency to use a fronted or unrounded [u] might be rather common in connected speech. This possibility should, of course, be investigated further, especially as regards whether it represents a conditioned alternation or a context-free substitution for back [u].

SUMMARY

The study described in the last chapters discusses: (1) some of the phonological processes found to occur most frequently in two styles and two dialects of connected American English speech. The processes described here are predominantly consonantal; a great deal of work remains to be done on vocalic processes found in running speech. Of course, this study is by no means exhaustive even as regards consonantal processes, only describing those common to all three speakers in both reading and conversational styles.

(2) The interrelation of rate, style, and degree of phonological reduction in conversational speech. The results suggest that rate does in some sense determine degree of reduction in that given two similar utterances, one spoken at a rate relatively faster than the other, the faster one will be more reduced. But what might be called style plays a significant role also, in that given two utterances spoken at the same rate, the degree of reduction is not always identical, the more relaxed utterance being more reduced. (3) The effect of style on vowel target achievement. The results suggest that given a rate of speech, vowels in utterances spoken in a relaxed style tend to be more centralized than those spoken in a slightly more formal style. This finding is related to

Lindblom's (1963) theory that given knowledge of the physical properties of a speaker's vocal tract and of the rate of speech he is using, one can predict degree of vowel reduction in a given linguistic environment; it is suggested that style may be another variable, although perhaps a minor one.

This study by no means exhausts the possibilities for research even in the short texts examined. It was mentioned in Chapter II that many segmental characteristics have not been discussed; but suprasegmental characteristics have been mentioned only in passing and deserve much more careful attention, expecially stress in relation to the theories proposed by Chomsky and Halle (1968), and Vanderslice (1970). The part that stress plays in determining degree of phonological reduction (examined for vowels in Swedish by Lindblom (1963) should be examined specifically and in detail using as source material naturally spoken connected speech. The question of hesitation noises and their relationship to semantics, as studied by Goldman-Eisler (1961), should be investigated. A study of recent grammatical constructions found in spontaneous speech and of the frequency and types of ungrammatical utterances would be illuminating, as would investigation of higher-level grammatical influences on phonology, as done by Lehiste (1960).

The research described in the preceding pages has certain apparent shortcomings: (1) it considers data from only three subjects; therefore it is impossible to determine how widespread

the processes and stylistic characteristics described are in the American English-speaking community as a whole (although examination of dialect studies can give partial answers to this question), (2) with investigation of several topics, it has not been feasible to examine any one in as much detail as would have been possible, and (3) since all of the data was analyzed by hand (after some rather elementary instrumental analysis) there is a relatively small body of results, and that undoubtedly contains inconsistencies considering the inherent properties of the human mind (susceptibility to fatigue, small changes in perceptual set from day to day, limited short-term memory, etc.). The first two problems can be remedied by future studies, which this investigation will surely motivate in the case of the present author and possibly others; the third, and to some extent the first two, can be remedied by computer data analysis since, depending of course on the computer, practically unlimited amounts of data can be subjected to an invariant set of analyses. The quantity and kind of results then available are limited primarily by the experimenter's ability to implement analysis algorithms.

APPENDIX A

The following pages contain phonetic transcriptions of the six texts described in Chapter I. The transcription uses standard IPA symbols plus the following symbols which may be unfamiliar to some readers:

Symbol	Meaning	Example
X	becomes voiceless	Z > 0
х ••••	laryngealized	0
S X	imcomplete closure	b, d
š	simultaneous glottal closure	ð . L
X →	released (as opposed to aspirated)	t→
X	glide	u, i
x	voiceless	ģ
x	very short) อ
C	palatal click	

Parentheses indicate untranscribable sections.

DJ - READING

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DJ - CONVERSATION

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RC - READING

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RC - CONVERSATION

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95. Le yiya des da yike'n bifos daet 96. ji god kyas ond fedi Isd lill fedidet 97. K'esiz jur comebi typont'i Kouz fjustden 98. ðen ðær meg bi fiftin kausn pæsn3 99. pæsngazn bazsikls æniazländz 100 Indz JilismojuKn plabobli yoko av ndid 101. Jayndid Inan æya jik"insyimen 102. KX Jep BEI JEISZSTEIT pouk ji K" Jep 101 thai 103. baz to bits Itsfeli nazsfo toet Engyosorsk'? 104. K' Julfanlianaf az mizits lez K'Ili 105. Jayt" bat " J yarask" fin 106. aha. Jæts Khaz Jabits Izana 107. a Kanezzian sazd del. gudp itsada leskan 108. n bædpoutsjifon on KelizaElansits Kyazfa 109. adifiints batyina sayo sayiratize land ana nol

110. NOJO SAELADI KELAN DA FEJINALZAD 111. Særð SAELændruch Loks ofl 112. ækjliz loks laek aetroino dzaslaeka 113. a kaeav gjin Kýæpjiíonisjilitskas 114. stig i vks laeksi uid subiíi yeeda nojo saet 115. saeradiae land iz jiro kyaetiifjii its

amazhedaena, az Kazndava. laz Kmaz 137. mained y Enta Jan yez Insteravgoin 138. OID DIS YEZ JE YEN TODE PYEZ IPYINT 139. KINTARPYEI afgesI? YazlajkyIplaes 140. 141 esaispos IIigeiaididni nicIni Big framiss xyas djase saravs 142. SEMAI pEJALAISS for a fiu mitats laikjuro 143. 144. ĨOFOJEZ godfjumIĨItszz Kodn muvzets yaz 45. yazða dzimtija yasopærikt 27 H6. af felturli hout bl enirroy Erat Khem JE VG 196 147, ILZEK em des avit ji souget JI latz as yaz okte 148. yazoker abægduidersyini 149, Ĩtuahomosek(ualparti yer je ña lutighero 150. hEJOIIZ maeps luilisidias EII yazan 151. snats aznudiskazhutukas 152. assisjifodis pouriérit théré agthabi 153. bi dæ jaro Kihanaren nan Eu ya diz phiplospetstæy?læyndsinnæyn 154. 155. 2 gz Jili Kõe I av stueznds sayisatem 156. JEAM duig IPpp boekuum ji jon ei hærapap 157. bozliyana Kitjy stov Izzuilipuli

158. puiri diskastig æ Kærafelvenibæra bærrir

159. Iiyez azhaeva haepiva azhaevhaepiva 160. memdizavlädäntu azKbigvedi Kul 161. Ina samatazmbali 162. hastuarlazk hathi sakati sakatitudi

162. basıyazlazk bezbi sıksti sıkstituri guizfe

163. feili humid Kærðmistiin kæyskinddon 164. norn sobron ländon sourð jugðsa 165. avið di soðu dist af æz dei 166. sei bikdz di ed hepðtafris úrrdingaz dei 167. dei af stadrigirig sikand ten föðm tyjeste

168. et Lubiare at d'Idnoat 169. at hæd gandisntilæyaz smostetuyiðir 170. at ad feyli matalt Ketsiat öli færi æyryer

171. Erī az gatā PIZJial jurīo mezbi QJi yiks 172. æfta da hol QII stadīti ez ogeazyazā 173. zā Krībuts dakta azīd sintu jugaslovda 174. akas amedikindatīn juga sla 175. avi e ī agjik dakta II ælīns 176. Erītuk OIS ik dakta INIS Kībutsīr IZJial

BN-CONVERSATION

1. yihavalistavpyazoutiz Jazt 2. Pav Pav Biys, tu 3. baz "Inaniufjutsa 4. samatemazguigitriamatemaz 5. az dot jumembadasazzavadplez 6. phless (I y jtst jbas yats F. SIKOlzomastotseufobæjuío 8. harmats Raz Paz fagazgzæklihægmats 9. Silkasts ets It ova at ja 10. jappistin zsisz (ikalza famásta 11. astortjen Its bæyt so. ji o thujands 12. jaids you à 13. OJi jasts jetatu pipl Kn fisarit 14. Etsbæg. mebiðæs har afðs flodshæzis 15. hezisbigskyed Digju dætskmpatsa 16. (afiamits Kavauit fr daz? 14. KavauItafa Jazi 18. 2 ISEKSI VELI SEKSI 19. ariyez sifelin lavyita Oin 20. Enda SIYStstabSIV t Eaz Keptán 21. anaugiuzyyðr.bæ. art siystida 22. 27 agaugind plets zz tu smal yIts 23. yIt(22 IVKJUSTOIZ2

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46. dær? jestärez jiyisfali sed beni yvdzu 47. zulazkt" j gosida masta tjens y jsakolv 48. lokasst fizzledis 49. sinadin thats noe (yotstagolvkasis 50. 2III2gIn ÉTiyez 51. Li dzis dzas fãindæg det det det 52. Jæta Kxol nids et tilkspénsiv Japed eav ta puldi Inzan æzt ĩến 53. 54. En fik Dia dagæskits a sambig 55. Its fifti siks aî It? 56. fifti siks Dèg Dayzmailz 54. Isgania læskahazyezuno 58. julidnoðæt 59. je doe doe ? yozdio do fors 60. førstsamar dær yi yar æksfimedid 61. di læskahazyez oyels 62. yelits fainiksepoeta 63. to aks Kamin i adayet tundago lilf 64. Jil fæst n Kjk ap gjævl Esa quæve tenstu juno ladz 65. ladgitsef , is yingild le6. OJINjø her lagts 67. 68. III. III gez jano ja Kal KygIt pJIII

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157. 27 BOLDIDID 158. sodis das das met hitja 159. LOIXip ærikty souraf 160. jī Ĩõ Janfadanas Janfa 161. daktor 162. higz Jilingvas 163. 2er lænd II Smazhed 164. Jnats æmplin alentsamat 165. hed End az Kãe Iaf 166. las mashery Etg Janyes In 167. SIL DV gOIN ISYET INGE PODER YET 168. jgesigzlagKyiplæf 169. a s. poz I'iyezzedidninis Initig fram 1 2 35 tst a asorrav 170, semiphenlazzforgumIsats 171. læg va fuagve fum Isatsat kvdn mufjiro 172. 173. doet doet sy a foi des Imtits a sopeni K DOEJ FERRUILihout be bar jiroy a yehaid 174 Jilazsazyazokhez 175. 176. yel yarjaset 177. baertejires yr yîthua 178. hompsekjulppusiveider jusinhedoin 179. De deslu sidids ÉIZZ 180. 181. 2. 42 yi yInu IS gaz hu Im

205. affa: feili maglkesetet det oli 206. fæontær IIn E yEIZE gat "IZJil jITOmezbi Qi uiks æft sa 207 ho Brystorid deio 208. 209. Oje PERUDZOMOK 2 K'Ebrts dakta 22,2d 210. sin a t'u 211. t'ujugaslavdaktaznämedikindakta 21Z.) slavið Erðgyikdaktr En 213 (20 JINZ ErItoKam 214. JIS > hIK" dakto In 215 IS K"EbutsnIZJial to 216 fainlidaignos én I disippailukiata 217 Yaits maiaisi so jelo Ina yaitsa 218 diazs E. IMasbIMazelkezs 219 K'2ZEJ Y2ZN2 dEI dES2I didnt 2gIS2p 220. 221. nyokazun jirog rami

APPENDIX B

The following pages contain a spelling transcription of the six texts described in Chapter I. The line numbers are keyed to the corresponding lines of the phonetic transcriptions in Appendix A.

SPEAKER RC, READING, SPELLING TRANSCRIPTION

OH YOU USUALLY GET BETTER 00100 00200 FREQUENCY RESPONSE FOR ONE THING 00300 AND THEYRE BUILT A LITTLE BIT MORE RUGGED 00400 AND IT DEPENDS UPON THE IMPEDENCE THAT YOU 00500 WANT WHETHER YOU WANT TO RUN IT 00600 ON A LONG LINE IF YOU 00700 DO WANT TO GO TO A LOW IMPEDENCE SAY 00800 THIRTY OR FIFTY OHMS THEN . 00900 YOU CAN RUN IT UP TO SEVERAL HUNDRED FEET 01000 WHERE IF YOU USE A HIGH IMPEDENCE 01100 USUALLY ON THE CHEAPER MICROPHONES 01200 THEYRE EITHER A CRYSTAL 01300 OR A CERAMIC MICROPHONE **0**1400 AND I DONT KNOW THEY RUN ABOUT A 01500 MAXIMUM OF TEN FEET BEFORE THEY 01600 PICK UP A C HUM AND ALL KINDS 01700 OF NOISE AND STUFF LIKE 01800 THAT CORD HAS CAPACITY 01900 SEE BETWEEN THE 02000 INNER AND OUTER CONDUCTOR ON. 02100 TWO CONDUCTOR STUFF AND IT 02200 GOES IN LENGTH IT AFFECTS 02300 THE FREQUENCY RESPONSE AND ALSO BY USING A LOW 02400 02500 IMPEDENCE YOU CAN USE TWO CONDUCTORS 02600 SHIELDED WHICH SHIELDS THE LINE 02700 FROM ANY STRAY PICKUP LIKE HUM 02800 MAGNETIC FIELDS OR NEON 02900 SIGNS OR STUFF LIKE THAT 03000 SO YOU KINDA PAY FOR IT 03100 BUT ALTC THEYVE ALWAYS MADE GOOD **0**3200 EQUIPMENT THAT WAY THEYRE ONE OF THE OLD 03300 ESTABLISHED NAMES IN THE 03400 BROADCAST BUSINESS AND 03500 ELECTRONIC BUSINESS THAT WAY **0**3600 WE USED TO HANDLE THAT OVER AT MAGNETIC 03700 SERVICE UH YEAH 03800 I SPENT FIVE AND A HALF YEARS THERE 03900 I ENJOYED IT THATS WHERE I GOT 04000 TO KNOW A LOT OF THESE PEOPLE UP HERE AT OHIO **0**4100 STATE PRESTON 04200 FOR ONE I SOLD 04300 HIM A LOT OF PARTS AND MARLENA

04400 I GOT TO KNOW HER THROUGH 04500 WHEN I WAS AT MAG THERE AT 04600 MAGNETIC AND MOST OF THE GUYS 04700 OVER AT TELCOM AND EVEN HERE IN THE LISTENING 04800 CENTER LITTLE AT THAT TIME DID I KNOW I WAS GOING TO 04900 05000 END UP HERE 05100 JUST ONE OF THOSE THINGS 05200 I WORKED WITH RAY DATA CORPORATION 05300 UP THERE IS WAS THERE 05400 ABOUT EIGHT MONTHS OR 05500 SOMETHING LIKE THAT I WAS IN RESEARCH 05600 AND DEVELOPMENT 05700 RAY DATA 05800 ITS CHANGED NAME NOW 05900 AND WE MADE WELL WE MADE 06000 A SCINULATION CAMERA FOR ONE THING 06100 I WAS IN R AND D RESEARCH 06200 AND DEVELOPMENT AND WE DESIGNED 06300 A SCINULATION CAMERA FOR THE 06400 DETECTION OF CANCER OR MALIGNANCY 06500 IN HUMAN ORGANS 06600 AND IT WORKED ON A 06700 YOU DRINK A ACTIVE RADIOACTIVE DRINK SEE AND IT GOES 06800 06900 DOWN THROUGH YOUR BODY AND IF YOU HAVE ANY 07000 MALIGNANCY OR CELL 07100 SOMETHING IN A KIDNEY OR BLADDER OR 07200 SOMETHING THE RADIOACTIVE 07300 SALTS WOULD KINDA CLING TO IT AND 07400 AND THEN THIS PHOTOCELL WOULD PASS 07500 THE RAYS FROM THIS RADIOACTIVE 07600 MATERIAL WOULD PASS FROM THE BODY 07700 OUT ON THIS PHOTOCELL AND AN 07800 OSCILLOSCOPE WAS HOOKED UP ON IT AND IT WOULD ACTUALLY GIVE YOU A PICTURE OF 07900 08000 HOW BAD IT WAS AND SO FORTH 08100 DARN THINGS WEIGHED ABOUT TWO TONS 08200 CAUSE THEY WERE UH WE HAD LEAD IN 08300 08400 THEM CAST IRON 08500 EVERYTHING UNDER THE SUN 08600 AND THEN I WORKED ON PRINTED CIRCUIT 08700 BOARD DESIGN AND STUFF LIKE THAT BUT BEFORE 08800

08900 THEN THAT 09000 THEN I WAS AT VEE KAY OH 09100 YEAH I SPENT ABOUT TWELVE YEARS THERE 09200 ONLY WHEN I HAD 09300 TO LIKE WHEN NOW OR SOMETHING 09400 BUT I WAS MAINTENANCE 09500 ENGINEER AND TRANSMITTER ENGINEER CHIEF ENGINEER I WENT OUT ON 09600 09700 A LOT OF REMOTE BROADCASTS AND 09800 WE BUILT A NEW BUILDING 09900 OUT THERE ON HENDERSON ROAD NEW STUDIOS AND MOVED EVERYTHING OUT 10000 10100 THERE AND PUT IN TRANSMITTERS 10200 AND SO FORTH AND 10300 IT GOT TO BE A WEAR AND TEAR ON YOU 10400 AFTER A WHILE AND THE NERVES AND 10500 BECAUSE ALL THE TIME YOU WERE ON 10600 TRANSMITTER DUTY YOU COULDNT RELAX 10700 I NEVER COULD BECAUSE I WAS 10800 ALWAYS AFRAID SOMETHING WOULD HAPPEN AND 10900 YOU KNOW YOURE JUST KEYED UP AND 11000 UH I WAS GOING TO BED WHEN OTHER PEOPLE WERE GETTING UP AND 11100 11200 THE TIMES AND VICE-VERSA 11300 SO I WORKED ALL NIGHT AND YOU KNOW 11400 OCCASIONALLY AND MAYBE GET 11500 UP AT FOUR OCLOCK IN THE MORNING AND GO 11600 TO WORK 11700 WELL AFTER A WHILE SHE GOT USED 11800 TO IT WE WAS ON 11900 TWO WEEKS OF DAYS AND TWO 12000 WEEKS OF NIGHTS AND IF THERE WAS MAINTENANCE 12100 OR SOMETHING SPECIAL THEN WED WORK 12200 DID A LOT OF REMOTE WORK ON VARIOUS CHURCHES AND USED CAR LOTS 12300 12400 AND STUFF LIKE THAT LINE AND VARIOUS SHOPPING CENTERS 12500 12600 IT WAS RATHER INTERESTING BUT GOT 12700 TO HAVE A 12800 LUG SO MUCH 12900 EOUIPMENT AROUND AND LOTS OF TIMES ON 13000 SUNDAYS ID START OUT AT SEVEN OCLOCK IN THE MORNING AND I WOULDNT GET BACK 13100 13200 UNTIL EIGHT OR NINE OCLOCK AT NIGHT 13300 ONLY LONG ENOUGH TO EAT DINNER

13400 AFTER I GOT OUT OF THAT I WENT DOWN TO M N I AND WORKED DOWN THERE FOR A COUPLE OF YEARS SUNDAYS 13500 JUST FOR TRANSMITTER ENGINEER 13600 I OUIT DOWN THERE LAST AUGUST 13700 13800 IT GOT TO BE ONE OF THOSE DEALS WHERE IT WAS 13900 GETTING TO ME A LITTLE BIT I ENJOYED IT SOME BUT IM NOT 14000 14100 PARTICULARLY INTERESTED IN GOING BACK TO IT OH THE ELECTRONIC ITS GETTING KIND OF A 14200 14300 NARROW FIELD TOO ANY MORE I WAS 14400 MAINLY INTERESTED IN BROADCASTING AND IT GOT TO BE A NARROW FIELD 14500 14600 AND WHEN YOU TRY TO GET OUT OF IT IT ITS HARD KIND OF HARD TO GET 14700 OUT OF IT THATS WHY 14800 14900 WHEN I WENT TO MAGNETIC WITH WITH TAPE 15000 RECORDERS AND SO FORTH I WAS 15100 ABLE TO GET OUT OF IT SOME AND BRANCH OUT 15200 BUT I ENJOYED WORKING WITH 15300 MY HANDS ON THINGS AND REPAIRING 15400 THINGS AND STUFF LIKE THAT ONE THING UP HERE IN THE LISTENING CENTER ITS 15500 15600 SOMETHING DIFFERENT JUST ABOUT EVERY DAY 15700 YOU KNOW AND YOU DONT GET BORED IVE GOT A MILLION AND ONE THINGS I 15800 WANT TO DO OVER THERE AND I HAVENT HAD 15900 A CHANCE TO DO THEM AND 16000 OH IM NOT WORRIED ABOUT THAT RIGHT NOW 16100 THEYVE HAD SOME ARTICLES IN ON SPEECH 16200 16300 IN SOME OF THE RADIO 16400 MAGAZINES THAT IVE SEEN WHERE EVERYBODYS VOICE IS SUPPOSED TO HAVE A 16500 UH YOU KNOW A DIFFERENT PRINT JUST LIKE 16600 **FINGERPRINTS** 16700 16800 WELL THEYVE BEEN FEEDING VOICE PATTERNS 16900 YOU KNOW ONTO AN OSCILLOSCOPE AND THEN TAKING PICTURE OF THEM FOR COMPARISON 17000 17100 AND OF COURSE YOU KNOW 17200 THEYRE WORKING UH WITH UH 17300 WHERE SOUND CAN BE TRANSFERRED 17400 NOW TO TYPEWRITER KEYS AND HAVE THE LETTERS PRINTED OUT 17500 17600 THE WORDS AND ITS 17700 **REALLY COMING ALON** YEAH THATS WHAT PROFESSOR EGEA 17800

17900 WAS TELLING ME WHEN WE WERE TALKING 18000 ABOUT THE SPANISH AND 18100 WHAT THE WORD THAT HE 18200 USED TOUGH I THINK 18300 THE WORD WAS TOUGH HE SAYS THAT YOU JUST DONT SPELL IT LIKE IT SOUNDS 18400 18500 AND I GOT TO THINKING ABOUT THAT AND THERES OUITE A FEW ENGLISH WORDS 18600 THAT ALONG THAT LINE THAT YOU 18700 DONT SPELL RIGHT 18800 YOU USE YOUR SOUND CHAMBER HERE VERY MUCH 18900 19000 WELL ILL BET THE TAPES MADE FROM IN 19100 HERELL BE A LOT DIFFERENT SOUNDING 19200 THAN WHAT YOU MAKE 19300 SAY YOU MAKE IN A REGULAR STUDIO 19400 OR ANYTHING LIKE THAT CAUSE YOU DONT HAVE ANY SOUND BOUNCING 19500 19600 AROUND THE WALLS OR ANY 19700 **EXTRANEOUS NOISES** IF YOUVE GOT A GOOD TAPE RECORDER THATS PRETTY 19800 19900 **OUIET SOMETHING LIKE THAT** 20000 YOU MIGHT TRY FEEDING THE 20100 SOME OF THE AUDIO FROM HERE BACK THROUGH 20200 AN OSCILLOSCOPE YOU GOT AN 20300 OSCILLOSCOPE OUT THERE HAVENT YOU 20400 OH YOU KNOW WHAT IT LOOKS LIKE OH BOY YOU CAN GO ANYWHERE FROM 20500 20600 ABOUT A HUNDRED AND FIFTY DOLLARS UP TO 20700 THREE THOUSAND DEPENDS UPON WHAT 20800 ALL YOU WANT ON THEM AND 20900 WHAT YOU WANT THEM TO DO 21000 HEATHKITS CAN GET A HEATHKIT AND GET A PRESTON TO 21100 21200 BUILD IT FOR YOU

SPEAKER RC, CONVERSATION, SPELLING TRANSCRIPTION

00001 OH YOU USUALLY GET BETTER

00002 FREQUENCY RESPONSE FOR ONE

00003 THING AND THEYRE BUILT A LITTLE BIT MORE

00004 RUGGED

00005 AND UH DEPENDS UPON THE IMPEDENCE THAT YOU

00006 WANT WHETHER YOU WANT TO RUN IT ON

00007 A LONG LINE YOU IF YOU DO YOU

00008 WANT TO GO TO A LOW IMPEDENCE SAY THIRTY

00009 OR FIFTY OHMS AND THEN YOU CAN RUN IT UP TO SEVERAL

00010 HUNDRED FEET

00011 WHERE IF YOU USE A HIGH IMPEDENCE

00012 USUALLY ON THE CHEAPER

00013 MICROPHONES THEYRE UH

00014 OH EITHER A CRYSTAL OR CERAMIC

00015 MICROPHONE AND I DONT KNOW THEY RUN

00016 ABOUT A MAXIMUM OF TEN FEET BEFORE THEY

00017 PICK UP A C HUM

00018 AND ALL KIND OF NOISE AND STUFF LIKE

00019 THAT

00020 CORD UH HAS CAPACITY

00021 SEE BETWEEN THE INNER CONDUCTOR

00022 AND THE OUTER CONDUCTOR ON TWO

00023 CONDUCTOR STUFF AND

00024 AS IT GOES IN LENGTH IT AFFECTS

00025 THE FREQUENCY RESPONSE

00026 AND ALSO UH

00027 BY USING A LOW IMPEDENCE YOU CAN USE

00028 TWO CONDUCTORS SHIELDED

00029 WHICH SHIELDS THE LINE FROM ANY STRAY

00030 PICK UP LIKE HUM MAGNETIC FIELDS

00031 OR NEON SIGNS OR STUFF LIKE THAT

00032 SO YOU KIND OF PAY FOR IT BUT ALTEC

00033 THEYVE ALWAYS MADE GOOD EQUIPMENT THAT WAY

00034 AND THEYRE ONE OF THE OLD ESTABLISHED NAMES

00035 IN THE SAY BROADCAST

00036 BUSINESS OR ELECTRONIC BUSINESS THAT WAY

00037 WE USED TO HANDLE IT OVER TO

00038 MAGNETIC SERVICE

00039 YEAH I SPENT FIVE AND A HALF YEARS THERE

00040 OH I ENJOYED IT THATS WHERE I GOT

00041 TO KNOW A LOT OF THESE PEOPLE UP HERE AT OHIO STATE

00042 PRESTON FOR ONE I SOLD HIM A LOT OF

00043 PARTS AND MARLENA

00044 I GOT TO KNOW HER THROUGH 00045 WHEN I WAS THERE AT MAGNETIC AND 00046 MOST OF THE GUYS OVER IN UH 00047 OH TELCOM AND AND EVEN HERE IN 00048 THE LISTENING CENTER LITTLE AT THAT 00049 TIME DID I KNOW IWAS GOING TO END UP BACK 00050 UP HERE JUST ONE OF THOSE THINGS 00051 OH I DID UH I WORKED WITH UH 00052 00053 RAY DATA CORPORATION UP HERE 00054 I WAS THERE ABOUT EIGHT EIGHTEEN NAYAH 00055 EIGHT MONTHS OR SOMETHING LIKE THAT I WAS IN RESEARCH AND 00056 DEVELOPMENT 00057 RAY DATA ITS CHANGED NAME NOW 00058 AND WE MADE UH 00059 WELL WE MADE A SCINULATION CAMERA FOR ONE THING I I WAS IN R AND D RESEARCH AND 00060 00061 DEVELOPMENT AND UH WE DESIGNED A 00062 SCINULATION CAMERA FOR THE DETECTION OF 00063 CANCER OR MALIGNANCY IN HUMAN ORGANS 00064 AND IT WORKED ON A UH 00065 YOU DRANK A DRINK AN ACTIVE 00066 A RADIOACTIVE DRINK SEE 00067 IT GOES DOWN THROUGH YOUR BODY AND IF YOU HAVE ANY 00068 MALIGNANCY OR CELL SOMETHING IN A 00069 UH KIDNEY OR BLADDER OR SOMETHING 00070 THE RADIOACTIVE SALTS WOULD KIND 00071 CLING TO IT AND THEN THIS 00072 PHOTOCELL WOULD PASS 00073 THE RAYS FROM THIS RADIOACTIVE 00074 MATERIAL WOULD PASS FROM THE BODY OUT ON THIS 00075 PHOTOCELL AND A UH 00076 OSCILLOSCOPE WAS HOOKED UP 00077 ONTO IT AND ITD ACTUALLY GIVE YOU A 00078 PICTURE OF HOW BAD IT WAS AND SO FORTH 00079 I DID UH DESIGN WORK ON A 03000 GREA DARN THINGS WEIGHED ABOUT TWO TONS 00081 CAUSE THEY WERE S WE HAD LEAD IN THEM 00082 CAST IRON AND EVERYTHING UNDER THE SUN 00083 AND THEN I DID UH WORKED ON THE PRINTED 00084 CIRCUIT BOARD DESIGNS AND 00085 STUFF LIKE THAT BUT BEFORE THAT THEN I 00086 WAS WITH UH 00087 OH DOUBLEYOU VEE KAY OH 88000 YEAH I SPENT ABOUT TWELVE YEARS THERE

00089 ONLY WHEN I HAD TO 00090 LIKE WHEN NOW YOU KNOW OR 00091 SOMETHING LIKE BUT I WAS ENGINEER AND 00092 TRANSMITTER ENGINEER CHIEF ENGINEER 00093 I WENT OUT ON A LOT OF REMOTE BROADCASTS 00094 AND OLD PRESTON 00095 THERE I KNOW YOU EVER HAVE HIM TALKING 00096 HES STILL IN STORE 00097 BUT UH I SPENT TWELVE YEARS WITH 00098 UH VEE KAY OH 00099 WE BUILT A NEW BUILDING OUT THERE ON HENDERSON ROAD 00100 NEW STUDIOS AND MOVED EVERYTHING 00101 OUT THERE AND PUT IN TRANSMITTERS AND 00102 SO FORTH AND IT GOT TO BE A 00103 WEAR AND TEAR ON YOU AFTER A WHILE AND NERVES AND CAUSE ALL THE TIME YOU WAS ON 00104 00105 TRANSMITTER DUTY YOU COULDNT RELAX 00106 I NEVER COULD CAUSE ALWAYS AFRAID 00107 SOMETHING WOULD HAPPEN AND YOU KNOW YOURE JUST KEYED UP AND 00108 OH I WAS GOING TO BED WHEN OTHER PEOPLE WERE GETTING 00109 00110 UP AND THE TIMES VICE VERSA AND 00111 SO I WORKED ALL NIGHT YOU KNOW OCCASIONALLY 00112 AND UH MAYBE GET UP 00113 FOR O CLOCK MORNING AND GO TO WORK AND 00114 WELL AFTER A WWHILE SHE GOT USED TO IT 00115 WE WAS ON TWO YEAR TWO DAY 00116 WEEKS OF DAYS AND TWO WEEKS OF NIGHTS 00117 AND IF THERE WAS MAINTENANCE OR SOMETHING 00118 SPECIAL THEN WED WORK DID A LOT OF REMOTE WORK ON VARIOUS CHURCHES AND 00119 00120 USED CAR LOTS AND 00121 STUFF ALONG THAT LINE IN 00122 VARIOUS SHOPPING CENTERS IT WAS RATHER 00123 INTERESTING BUT GOT SO YOUD HAVE TO LUG SO MUCH 00124 EOUIPMENT AROUND AND 00125 LOTS OF TIMES ON SUNDAYS ID START OUT AT 00126 SEVEN O CLOCK IN THE MORNING AND I WOULDNT GET BACK 00127 HOME UNTIL N EIGHT OR NINE O CLOCK AT NIGHT 00128 ONLY LONG ENOUGH TO EAT DINNER 00129 AFTER I GOT OUT OF THAT I WENT DOWN TO DOUBLEYOU EM EN AYE AND I WORKED DOWN THERE 00130 00131 FOR A COUPLE OF YEARS SUNDAYS JUST FOR 00132 · TRANSMITTER ENGINEER AND I QUIT DOWN THERE 00133 LAST AUGUST IT GOT TO BE

00134 KIND OF ONE OF THOSE DEALS WHERE IT WAS GETTING 00135 TO ME A LITTLE BIT 00136 AND UH BUT I EN ENJOYED IT 00137 SOME BUT UH I DONT PARTICULARLY INTERESTED IN 00138 GOING BACK TO IT 00139 OH THE ELECTRONICS ITS GETTING KIND OF A NARROW 00140 FIELD TOO ANY MORE 00141 UH VARIOUS LIKE PEOPLE WORKING WITH UH COMPUTERS OR ITS 00142 00143 GETTING TO UH ALONG A NARROW PATH TOO 00144 WELL I WAS MAINLY IN BROADCASTING 00145 AND IT GOT TO BE A NARROW 00146 FIELD AND WHN YOU TRY TO GET OUT OF IT 00147 ITS HARD KIND HARD TO GET OUT OF IT 00148 THATS WHY WITH WHEN I WENT TO MAGNETIC UH 00149 I WITH TAPE RECORDER AND SO FORTH 00150 I WAS ABLE TO GET OUT OF IT SOME 00151 AND BRANCH OUT BUT I ENJOY 00152 WORKING WITH UH OH MY 00153 HANDS ON THINGS AND REPAIRING THINGS 00154 AND STUFF LIKE THAT ONE THING UP HERE 00155 AT THE LISTENING CENTER ITS SOMETHING DIFFERENT JUST 00156 ABOUT EVERY DAY YOU KNOW 00157 AND UH YOU DONT GET BORED IVE GOT 00158 A MILLION AND ONE THINGS I WANT TO DO OVER THERE I HAVENT HAD A CHANCE TO DO THEM AND 00159 00160 IM NOT WORRIED ABOUT THAT RIGHT NOW THEYVE HAD SOME ARTICLES IN ON SPEECH 00161 00162 IN SOME OF THE RADIO MAGAZINES THAT IVE SEEN WHERE UH 00163 00164 EVERY BUODYS VOICE IS SUPPOSED TO HAVE 00165 YOU KNOW A DIFFERENT UH PRINT 00166 JUST LIKE FINGERPRINTS 00167 WELL THEY THEYVE BEEN FEEDING VOICE 00168 PATTERNS YOU KNOW ONTO AN 00169 OSCILLOSCOPE AND THEN TAKING PICTURES OF THEM 00170 FOR UH COMPARISON 00171 AND OF COURSE YOU KNOW THEYRE WORKING WITH UH 00172 OH WHERE SOUND CAN BE 00173 TRANSFERRED NOW TO TYPEWRITER KEYS AND 00174 HAVE THE LETTERS PRINT OUT THE WORDS AND 00175 IT IT ITS REALLY COMING 00176 OF ALONG 00177 YEAH THATS WHAT UH PROFESSOR EGEA WAS TELLING ME WHEN WE WERE TALKING ABOUT 00178
00179 THE SPANISH AND UH WHAT WAS THE WORD THAT HE

00180 USED TOUGH I THINK

00181 I THINK THE WORD WAS TOUGH

00182 HE SAYS THAT YOU JUST DONT SPELL IT LIKE IT

00183 SOUNDS

00184 AND UH I GOT TO THINKING ABOUT THAT AND THERES QUITE A FEW

00185 ENGLISH WORDS THAT UH

00186 ALONG THAT LINE THAT

00187 YOU JUST DONT SPELL RIGHT

00188 YOU USE YOUR SOUND CHAMBER HERE VERY MUCH

00189 WELL ILL BET THE TAPES MADE FROM IN

00190 HERELL BE A LOT DIFFERENT SOUNDING THAN

SPEAKER DJ, READING, SPELLING TRANSCRIPTION

00001 OF COURSE ITS NOT ONLY HIM BUT ITS 00002 CONGRESS THAT ALSO THATS PROLONGING THE THING 00003 THINGS WE SHOULD BE YOU KNOW 00004 WORKING ON THEY SAY THE HELL WITH I THINK THEY SHOULD TAKE THE PUT MORE 00005 00006 MONEY IN THE SPACE PROGRAM YOU AND GO TOWARDS SPACE AND UH RATHER THAN 00007 THE WAR BUSINESS BUT AS LONG AS 80000 00009 WERE OVER THERE LETS GET THE THING OVER WITH OH ITS BENEFITTED MANKIND ALREADY 00010 00011 NOW I JUST UH THINK YOU KNOW ITS 00012 INTERESTING TO VISIT YOU KNOW ANOTHER WORLD YOU KNOW AND IM NOT LIKE MANY SCIENTISTS 00013 I VERY STRONGLY BELIEVE THAT 00014 00015 THERE IS DIFFERENT DEFINITELY LIFE ON OTHER PLANETS 00016 AND IN FACT IF YOU READ THE PAPER LAST WEEK 00017 THAT THE SCIENTISTS HAVE COMPLETELY TAKEN ANOTHER LOOK 00018 AT MARS THEYVE CHANGED THEIR WHOLE OUTLOOK ON THE THING YOU KNOW 00019 00020 I THINK ONCE THEY GET OVER I THINK THAT ONCE THEY GET EVEN CLOSER THEYRE GOING TO CHANGE IT EVEN 00021 00022 MORE BECAUSE I VERY STRONGLY BELIEVE 00023 THAT UH MARS DOES HAVE INTELLIGENT 00024 LIFE ON IT AND ITS INHABITED 00025 I JUST THINK OF YOU KNOW 00026 ALL IVE YOU KNOW READ ABOUT IT 00027 AND I THINK THAT THEYRE NOT TELLING US 00028 ALL THAT THEY KNOW ABOUT THE MOON YOU KNOW THATS THE THING OUR GOVERNMENT 00029 00030 THEY KEEP SO MANY THINGS THATS YOU KNOW HUSH HUSH 00031 00032 THATS THAT ITS RICIDULOUS 00033 LIKE THEYVE PROVEN YOU GET OUT OF FROM THIS PLANET HERE 00034 00035 OUT SO MANY THOUSANDS OF MILES AND YOU LOOK AT IT 00036 AND YOU CANT TELL THIS PLACE IS POPULATED 00037 SO THEY SEND ONE OF THESE CAPSULES TO VENUS AND THEY SAY OH ITS FIVE HUNDRED DEGREES 00038 YOU KNOW NOTHING COULD EVER 00039 LIVE THERE 00040 00041 WHAT THE HELL YOU LAND A CERTAIN PLACE ON THIS PLANET 00042 HERE ITS GOT EXTREME 00043 COLD AND EXTREME HEAT YOU COULD

SAY THERES NOTHING HERE BECAUSE YOU KNOW 00044 00045 THEY GOT SAND OR YOUR GOT 00046 ICEBERGS NOW WHAT THE HELL COULD LIVE 00047 THERE THATS SO NARROW MINDED 00048 YEAH ITS A PROMISING 00049 OF YEAH HES A PROMISING LOT OF 00050 PHONEY BALONEY YOU KNOW 00051 THAT JUST NO WAY 00052 YOU KNOW LIKE HE WANTS TO INCREASE 00053 UH THE WELFARE TYPE OF THING YOU KNOW 00054 PEOPLE THAT ARENT WORKING ARE GETTING MONEY 00055 PRETTY SOON THOSE GUYS ARE GOING TO BE MAKING 00056 SEVENTY THOUSAND DOLLARS A YEAR FOR SETTING HOME 00057 ON THEIR CAN 00058 NO REALLY I MEAN YOU START DOING 00059 SOMETHING LIKE THIS AND THE REST OF THE AMERICAN 00060 PEOPLE ARE JUST GOING TO REBEL AND SAY THE 00061 HELL WITH IT AND LETS SET ALL ALL SIT AT HOME 00062 AND HAVE A BIG PARTY 00063 THERE ARE LOTS OF PEOPLE THATS DOING IT NOW YEAH I USED TO DO A LOT OF DOOR TO DOOR SELLING 00064 00065 AND ITS SURPRISING YOU KNOW THE THINGS YOU SEE YOU GET THESE BIG HEALTHY DUDES THAT ARE JUST 00066 00067 TOO DAMN LAZY TO WORK AND GO 00068 AND JUST GO AND GET THEIR WELFARE CHECKS 00069 EVERY WEEK AND THESE YOU KNOW 00070 LITTLE BROADS THAT HAVE EIGHT OR NINE 00071 KIDS AND PAPA NOT HOME NOT MARRIED YOU KNOW I WENT TO THIS 00072 00073 ONE SHE PULLED OUT A WAD OF BILLS 00074 THAT WOULD CHOKE A HORSE WELL THEY GOT THIS THING NOW THAT IF YOURE 00075 00076 YOU KNOW LOW INCOME YOU MAKE FOUR TO SIX THOUSAND DOLLARS A YEAR 00077 00078 OR SOMETHING OF THIS NATURE YOU CAN 00079 BUY JUST AS NICE A PLACE AS I HAVE TO LIVE IN AND UH YOU KNOW THAT THE GOVERNMENT PAYS 00080 00081 SIXTY PER CENT OF IT AND ITS NONREPAYABLE 00082 YOU DONT HAVE TO PAY IT 00083 BACK OR ANYTHING 00084 SO AFTER EA A WHILE 00085 YOU KNOW YOU KIND OF START ADDING TWO AND TWO AND GETTING FOUR YOU SAY WHAT THE HELL WHY SHOULD 00086 00087 I YOU KNOW 88000 TO GO OUT THERE AND BUST MY HEAD WORKING

00089 AND THOSE OTHER GUYS ARE JUST SETTING BACK AND 00090 YOU KNOW 00091 MEXICO THATS ONE 00092 THING I REALLY RESPECT THE MEXICAN PEOPLE FOR 00093 THEY DONT HAVE ANY WELFARE OR YOU KNOW 00094 ANYTHING OF THIS NATURE EVERYBODY GETS OUT AND DOES THEIR FAIR SHARE EVEN GRANDMA 00095 00096 AND THATS ALSO ONE OF THE REASON THEY HAVE SUCH A LARGE FAMILIES BECAUSE THE 00097 00098 YOUNG TAKE CARE OF THE OLD NOT BECAUSE THEYRE 00099 CATHOLICS NO I REALLY CANT 00100 SAY THAT SO MUCH BUT ON THE AVERAGE 00101 THEY USUALLY HAVE FIFTEEN SIXTEEN 00102 KIDS A FAMILY EITHER 00103 DONT HAVE ANY T V OR NO BOOKS TO READ OR SOMETHING 00104 WE WENT IN A LITTLE RESTAURANT YOU KNOW AND 00105 A CAT COMES OUT AND YOU KNOW 00106 AND HE SAYS UNO 00107 WHERES THE REST OF THEM AT I SAYS 00108 REST OF WHAT YOU KNOW THE 00109 THERES THE OTHER FOURT WHERES THE OTHER FOURTEEN 00110 FIFTEEN WELL THEY START PRETTY EARLY OVER THERE THEY GET THE SHOW ON THE ROAD 00111 00112 ELEVEN TWELVE NO REALLY THEY 00113 DONT MIND THEY DONT MESS AROUND 00114 I THINK ROBERT KENNEDY SHOULD BE PRESIDENT 00115 BUT HES ALREADY DEAD I THINK HE 00116 WOULD HAVE GOT THE SHOW ON THE ROAD 00117 I THINK IF J F K WAS ALIVE WE WOULDNT 00118 HAVE VIET NAM 00119 WELL YES THERE IS BUT HES IN THE HOSPITAL 00120 RIGHT NOW HES A LITTLE BIT DOWN 00121 ON THE YOU KNOW NEGRO PEOPLE 00122 WHICH OF COURSE THERES GOOD AND BAD IN ALL RACES 00123 IM NOT YOU KNOW DOWN ON ANYBODY 00124 BUT UH YOU KNOW I THINK 00125 YOU KNOW THE THING I LIKE ABOUT HIM 00126 HE DOESNT BEAT AROUND THE BUSH YOU KNOW 00127 HE COMES RIGHT OUT AND SAYS WHATS ON HIS MIND AND 00128 THATS WHAT WE DONT HAVE NOW 00129 THATS VERY TRUE 00130 · THATS JUST LIKE THIS TOWN HERE I DONT LIKE THAT VERY MUCH BECAUSE ITS 00131 GOT A LOT OF YOU KNOW JUST PRETTY 00132 00133 THINGS THAT JUST YOU KNOW KIND OF

00134 MAKE YOU UNHAPPY LIKE 00135 THOSE GESTAPO POLICE FORCE WE HAVE 00136 LIKE YOU KNOW IF YOURE IN A TRAFFIC ACCIDENT OR YOU GET A TICKET OR ANYTHING 00137 OR THE OFFICER GIVFS YOU A TICKET YOU CANT YOU KNOW 00138 00139 SAY YOU KNOW CANT VOICE 00140 YOUR OPINION OR OR ANYTHING OR THEY HIT YOU 00141 IN THE HEAD WITH SOMETHING YEAH IF YOU 00142 GO TO COURT YOU MIGHT AS WELL STAY HOME AND 00143 FORGET ABOUT IT BECAUSE IF YOURE FOUND RE GUILTY REGARDLESS UNLESS YOU 00144 00145 INVEST SOME FANTASTIC AMOUNT OF MONEY IN A CROOKED 00146 LAWYER BUT ON THE OTHER HAND 00147 EVEN THOUGH I DONT LIKE IT 00148 I CANT THINK OF ANY PLACE ELSE ID LIKE 00149 TO LIVE ANY MORE SO I 00150 JUST STAY HERE I WAS SO 00151 HOT ON GOING OUT TO YOU KNOW L A 00152 I SAID BOY THATS REALLY 00153 A FINE PLACE OUT THERE FROM WHAT I 00154 READ ABOUT IT AND HEARD ABOUT IT AND I COULDNT WAIT TO GET OUT THERE AFTER I GOT THERE 00155 I COULDNT WAIT TO GET HOME 00156 00157 NO THE SMOG DIDNT BOTHER ME AT ALL ITS JUST 00158 THE FAST PACE OF LIFE YOU KNOW 00159 NOBODY KNOWS ANYTHING YOU KNOW WHATS GOING ON OUT 00160 THERE THEYRE JUST GOING TWENTY FOUR HOURS A DAY SOMETHING LIKE NEW YORK BUT ITS MORE 00161 SPASTIC OUT THERE AND ITS GOT A LOT OF 00162 IRRITATING THINGS ABOUT THIS CITY BUT I REALLY 00163 00164 DONT KNOW ANY PLACE I LIKE ANY BETTER 00165 YOU CANT HAVE EVERYTHING THE WAY YOU WANT IT ALL 00166 ALL THE TIME 00167 ITS NICE ITS GOT A LOT OF NEW EQUIPMENT IT'S OUITE A CHALLENGE THE THEATER BUSINESS HAS 00168 00169 WENT UH ITS COMPUTERIZED RIGHT NOW YEAH AND ITS AUTOMATED AND OF COURSE 00170 THE WHOLE THEORY OF OPERATION HAS COMPLETELY 00171 00172 CHANGED WE HAVE A DIFFERENT LIGHTING SOURCE NOW WE DONT HAVE CARBON ARCS ANY MORE 00173 00174 WE HAVE A LIGHTING THATS CALLED XEON XEON LIGHTING THREE DIFFERENT ROOMS 00175 00176 SIX WELL TWO MACHINES PER ROOM KINDA KEEPS YOU RUNNING SOMETIMES WE 00177 HAVE THEM START ALL THE T ON ALL THE TIME 00178

WEVE GOT A CONTROL BOX WHERE WE CAN START 00179 00180 TWO OF THE AUDITORIUMS AT ONE TIME 00181 AND YOU HAVE TO GET THE YOU KNOW 00182 GET THE THIRD ONE IT KEEPS YOU MOVING 00183 ANY WAY YOU LOOK AT IT 00184 WELL ITS SMALL BUT IN PROPORTION TO THE SIZE OF THE AUDITORIUM I DONT THINK 00185 ITS THAT SMALL WELL IT WAS BUILT 00186 00187 SEVERAL YEARS AGO BUT JUST OPENED 00188 ABOUT TWO MONTHS AGO 00189 WELL YEAH THE GUY THAT HAD IT WAS A LITTLE BIT HE WAS A LITTLE BIT UNDER THE WEATHER YOU KNOW HE 00190 00191 BUILT THIS BUILDING AND IT WAS CLOSED DOWN 00192 HE WAS A YOU KNOW A MULTIMILLIONNAIRE BUT HE DIDNT LIKE TO SPEND MONEY AND AS 00193 00194 HE TEARS DOWN THE OLDER THEATERS HED TAKE YOU KNOW SEATS SOME OF THE BETTER SEATS 00195 00196 OUT OF THE THEATER YOU KNOW AND PUT THEM IN THIS PLACE AND LIKE HED HAVE A BLUE SEAT 00197 AND A YELLOW SEAT AND A RED SEAT YOU KNOW RIGHT 00198 00199 NEXT TO EA EACH OTHER 00200 AND THE SAME WITH THE CARPET YOU KNOW A LITTLE SQUARE OF 00201 CARPET HERE AND THERE HE WAS REALLY 00202 FRUITY YOU KNOW THEY SPENT NEARLY A 00203 MILLION DOLLARS WORTH OF JUST FOR 00204 THE SEATING IN THE PLACE YEAH THEYRE NEW SEATS VERY ELABORATE SEATING 00205 OF COURSE WHEN HE DIED UH BEGINNING OF THE YEAR 00206 00207 THE ATTORNEYS TO YOU KNOW 00208 THE ATTORNEYS TO THE STATE THEY DECIDED TO 00209 OPEN UP THE THING YOU KNOW

SPEAKER DJ, CONVERSATION, SPELLING TRANSCRIPTION

00001 THEN OF COURSE UH ITS NOT 00002 ONLY HIM BUT ITS THE 00003 CONGRESS THAT UH ALSO THAT 00004 THATS UH PROLONGING THE THING THINGS WE SHOULD BE YOU KNOW WORKING ON THEY YOU KNOW SAY 00005 00006 THE HELL WITH I THINK THEY SHOULD 00007 TAKE THE PUT MORE MONEY IN THE SPACE PROGRAM 80000 AND 00009 YOU KNOW GO TOWARDS SPACE AND UH 00010 YOU KNOW AND THAN THE WAR BUSINSS 00011 BUT HOW LONG AS WERE OVER THERE LETS GET THE 00012 THING OVER WITH 00013 OH ITS BENEFITTED MANKIND ALREADY 00014 OH 00015 THATD BE KIND NEAT NOW I JUST UH 00016 THINK THE 00017 YOU KNOW JUST INTERESTING TO VISIT UH 00018 UH YOU KNOW ANOTHER UH WORLD YOU KNOW 00019 AND UH IM NOT LIKE MANY SCIENTISTS I 00020 I VERY STRONGLY BELIEVE THAT THERE ARE THERE IS 00021 UH DEFINITELY LIFE ON OTHER PLANETS 00022 AND UH IN FACT UH IF YOU READ 00023 THE PAPER LAST WEEK THAT THE SCIENTISTS HAVE 00024 COMPLETELY TAKEN ANOTHER LOOK AT MARS THEYVE CHANGED THEIR 00025 WHOLE OUTLOOK ON THE THING YOU KNOW 00026 I THINK ONCE THEY ONCE THEY GET EVEN 00027 CLOSER THEYRE GOING TO CHANGE IT EVEN MORE UH 00028 CAUSE I VERY STRONGLY BELIEVE THAT UH 00029 MARS DOES HAVE INTELLIGENT LIFE ON IT UH 00030 AND IS INHABITED 00031 OH NO I JUST STRONGLY BELIEVE IT I JUST KINDA 00032 WELL IVE YOU KNOW READ ABOUT IT AND YEAH YEAH ITD BE REALLY FAR OUT 00033 00034 AND I THINK THAT UH THEYRE NOT TELLING US ALL THAT THEY KNOW ABOUT THE MOON YOU KNOW THAT'S THE THING WITH 00035 00036 OUR GOVERNMENT THEY KEEP SO MANY THINGS UH YOU KNOW UH YOU KNOW HUSH HUSH THAT YOU KNOW ITS 00037 00038 SO RIDICULOUS 00039 YEAH YEAH YOU KNOW LIKE THEYVE PROVEN YOU GET OUT 00040 OF THIS PLANET HERE SO MANY YOU KNOW 00041 THOUSAND MILES AND YOU LOOK OUT AND 00042 HELL YOU CANT TELL THIS PLACE IS POPULATED 00043 I MEAN UH THERES NO WAY OF TELLING

0 0044	YOU LOOK AT THAT YOU KNOW AND SO THEY SEND		
00045	ONE OF THESE CAPSULES LIKE TO VENUS AND THEY SAY		
00046	WELL HELL ITS UH ITS FIVE HUNDRED DEGREES	•	
00047	YOU KNOW NOB NOTHING COULD EVER LIVE THERE		
00048	WHAT THE HELL YOU LA YOU KNOW IF YOU LAND A		
00049	CERTAIN PLACE IN THIS PLANET HER YOUVE GOT UH EXTREME		
00050	COLD OR EXTREME HEAT UH		
00051	YOU COULD SAY WELL HELL THERES NOTHING THERE	۰.	
00052	BECAUSE YOU KNOW YOU GOT SAND OR YOU GOT ICEBERGS		
00053	NOW WHAT THE HELL COULD LIVE THERE UP I MEAN	•	•
00054	THATS SO NARROW MINDED		
00055	YEAH HES PROMISING A LOT LOT OF PHONEY	· .	
00056	BALONEY THAT JUST YOU KNOW THERES JUST NO WAY		
00057	WHAT YOU KNOW LIKE HE WANTS TO INCREASE UH		
00058	THE UH THE UH GOOD	T- 1 AL 4	
00059	WILL WHAT DU YOU CALL IT THE UNEMPLOYMENT NOT THE UNEMPLOYMENT	IUH	
00060			
00061	NU NUT SUCIAL SECURITY THE		
00062	WELFARE TYPE OF THING YOU KNOW PEUPLE NUT	• .	
00063	WURKING ARE GETTING MUNET AND HELL		
00065	AAVING CEVEN FIGUR THOUGAND DOLLARG A YEAD FOD CITTING HOME ON		м
00000	NO DEALLY I MEAN YOU CTADE DOING COMETUING LIVE THE AND HELD	THLIN OA	1.1
00000	THE HEREST OF THE AMERICAN PEOPLE ARE HIST COING TO		
00007	REBEL AND SAY THE HELL WITH IT AND LETS ALL SIT HOME		
00008	HAVE A RIG PARTY		
00000	WELL HELL THERE'S A LOT OF PEOPLE THAT'S DOING IT NOW I MEAN		
00070	YEAH I USED TO DO A LOT OF DOOR TO DOOR SELLING AND ITS		
00072	SURPRISING YOU KNOW THE THINGS YOU SEE		
00073	YOU GET THESE BIG HEALTHY DUDES THAT THEYRE TOO DAMN LATY		
00074	TO WORK AND JUST YOU KNOW GO AND GET THEIR WELFARE		•
· 00075	CHECK EVERY WEEK		
00076	AND THESE UH YOU KNOW LITTLE BROADS THAT		
00077	UH HAVE ALL EIGHT OR		
00078	NINE KIDS AND POPPA NOT HOME NOT MARRIED YOU KNOW		
00079	OH HELL YEAH I WENT TO THIS ONE THAT SHE PULLED OUT A WAD		
00080	OF BILLS THAT WOULD CHOKE A HORSE		
00081	WELL THEY GOT THIS THING NOW THAT UH		
00 082	IF YOU YOURE YOU KNOW LOW INCOME YOU MAKE FOUR TO		
00083	SIX THOUSAND DOLLARS A YEAR OR SOMETHING OF THIS NATURE		
00084	WELL HELL THEY CAN BUY A PLACE JUST AS NICE AS I HAVE TO LIVE IN		
00085	AND UH YOU KNOW THE GOVERNMENT PAYS FOR SIXTY PER CENT OF IT		
00086	AND ITS NON REPAYABLE YOU DONT HAVE TO PAY IT BACK OR ANYTHING		
00087	SO YOU KNOW UH AFTER A WHILE		
00088	YOU KIND OF START ADDING UP TWO AND TWO AND GETTING		
		•	

00089 FOUR AND YOU SAY WHAT THE THELL WHY SHOULD I YOU KNOW GO OUT THERE AND 00090 BUST MY HEAD WORKING AND THESE OTHER 00091 GUYS ARE JUST SITTING BACK AND 00092 YOU KNOW MEXI THATS THE ONE THING I UH REALLY 00093 RESPECT THE MEXICAN PEOPLE FOR THEY DONT HAVE ANY 00094 WELFARE OR ANYTHING OF THIS NATURE EVERYBODY 00095 GETS OUT AND DOES THEIR FAIR SHARE EVEN GRANDMA 00096 AND THATS ALSO ONE REASON WHY THEY HAVE SUCH LARGE 00097 FAMILIES 00098 BECAUSE THE YOUNG TAKE CARE OF THE OLD 00099 NO I CANT REALLY SAY THAT SO MUCH BUT 00100 ON THE AVERAGE THEY USUALLY HAVE FIFTEEN SIXTEEN KIDS 00101 A FAMILY 00102 EITHER THEY DONT HAVE ANY T V OR ANY BOOKS TO READ OR SOMETHING WE WENT IN A RESTAURANT YOU KNOW AND A CAT COMES OUT 00103 00104 YOU KNOW AND HE SAYS 00105 UNO WHERES WHERES THE REST OF THEM AT 00106 AND I SAYS REST OF WHAT YOU KNOW 00107 WHERES THE OTHER FOURTEEN, FIFTEEN 00108 WELL THEY START PRETTY EARLY OVER THERE 00109 THEY GET THE SHOW ON THE ROAD 00110 OH TWELVE ELEVEN TWELVE 00111 HEY THEY DONT MESS AROUND 00112 YEAH ITS A WHOLE PLACE IS INCREDIBLE 00113 I THINK ROBERT KENNEDY SHOULD BE PRESIDENT BUT HES ALREADY DEAD I THINK HE WAS I THINK HE WOULD HAVE GOT THE SHOW ON THE ROAD 00114 00115 I THINK IF UH U F K WAS ALIVE WE 00116 WOULDNT HAVE VIET NAM 00117 WELL YES THERE IS BUT HES IN THE HOSPITAL RIGHT NOW 00118 HES A LITTLE BIT DOWN ON THE ON THE YOU KNOW NEGRO PEOPLE 00119 WHICH UH OF COURSE THERES GOOD AND BAD IN ALL RACES IM NOT YOU KNOW DOWN ON ANYBODY 00120 00121 BUT UH YOU KNOW THE THING I LIKE ABOUT HIM 00122 HE DOESNT BEAT AROUND THE BUSH YOU KNOW HE COMES RIGHT OUT AND 00123 SAYS WHAT HE WHATS ON HIS MIND 00124 AND THATS WHAT WE DONT HAVE NOW WELL THAT VERY TRUE ITS JUST LIKE THIS YOU KNOW 00125 00126 TOWN HERE I DONT LIKE THAT MUCH BECAUSE 00127 ITS GOT A LOT OF YOU KNOW JUST PETTY THINGS THAT 00128 YOU KNOW THAT JUST KIND OF MAKE YOU UNHAPPY LIKE THOSE GESTAPO POLICE FORCE WE HAVE 00129 LIKE YOU KNOW IF YOURE IN A YOU KNOW TRAFFIC ACCIDENT 00130 OR IF YOU GET A TICKET OR ANYTHING 00131 00132 OR THE OFFICERS GIVE YOU A TICKET YOU CANT YOU KNOW SAY YOU KNOW 00133 CANT VOICE YOUR OPINION OR ANYTHING OR YOURE YOU KNOW

00134 HIT YOU ON THE HEAD WITH SOMETHING 00135 YEAH IF YOU GO TO COURT YOU MIGHT AS WELL JUST STAY HOME AND FORGET ABOUT IT 00136 CAUSE YOURE FOUND GUILTY REGARDLESS UNLESS YOU 00137 INVEST SOME FANTASTIC AMOUNT OF MONEY IN A CROOKED LAWYER 00138 BUT ON THE OTHER HAND UH EVEN THOUGH I DONT LIKE IT I CANT THINK OF ANY 00139 PLACE ELSE ID LIKE TO LIVE ANY MORE SO JUST 00140 I WAS SO HOT UH ON GOING OUT TO YOU KNOW L A 00141 I SAID BOY THAT A YOU KNOW REALLY FINE PLACE OUT THERE 00142 FROM WHAT I READ ABOUT IT AND HEARD ABOUT IT AND COULDNT WAIT TO GET 00143 NO HELL THE SMOG DIDNT BOTHER ME AT ALL 00144 ITS JUST THE FAST PACE OF LIFE YOU KNOW 00145 NOBODY KNOWS ANYTHING YOU KNOW WHATS GOING ON OUT THERE 00146 CAUSE AND UH IT JUST UH 00147 HELL THEYRE JUST GOING TWENTY FOUR HOURS A DAY 00148 SOMETHING LIKE NEW YORK BUT ITS MORE SPASTIC OUT THERE 00149 IT A NICE PLACE TO VISIT BUT I WOULDNT WANT TO LIVE THERE 00150 YEAH ITS YOU KNOW ITS GOT A LOT OF IRRITATING 00151 THINGS ABOUT THIS CITY BUT 00152 UH I REALLY DONT KNOW ANY PLACE I LIKE ANY BETTER 00153 I MEAN YOU CANT HAVE EVERYTHING THE WAY YOU WANT IT ALL THE TIME SO 00154 OH ITS NICE ITS GOT A LOT OF NEW 00155 EOUIPMENT ITS OUITE A CHALLENGE UH 00156 THEATER BUSINESS HAS WENT UH 00157 COMPUTER ITS COMPUTERIZED RIGHT NOW 00158 YEAH ITS AUTOMATED YEAH 00159 AND OF COURSE THE WHOLE THEORY OF OPERATIONS HAS COMPLETELY CHANGED WE HAVE A DIFFERENT LIGHTING 00160 00161 SOURCE NOW WE DONT HAVE CARBON ARCS ANY MORE 00162 WE HAVE A LIGHTING THATS CALLED XEON **XEON LIGHTING** 00163 00164 THREE DIFFERENT ROOMS AND SIX WELL TWO 00165 MACHINES PER ROOM KIND OF KIND OF KEEPS YOU RUNNING 00166 00167 SOME TIMES WE HAVE THEM ALL START AT THE SAME TIME YOU GOT TO BE OUICK 00168 00169 NOT REALLY NO WEVE GOT A 00170 CONTROL BOX WHERE WE CAN START TWO OF THE AUDITORIUMS AT ONE TIME THEN YOU HAVE TO RUN AND GET THE 00171 00172 YOU KNOW THE THIRD ONE BUT UH 00173 ITS IT KEEPS YOU MOVING ANY WAY YOU LOOK AT IT 00174 WELL IT WAS SMALL BUT UH IN PROPORTION TO THE 00175 UH SIZE OF THE AUDITORIUM I DONT THINK IT WAS THAT SMALL 00176 00177 WELL IT WAS BUILT SEVERAL YEARS AGO BUT UH 00178 JUST OPENED ABOUT TWO MONTHS AGO

1'82

WELL YEAH THE GUY THAT HAD IT HE WAS A LITTLE BIT UH 00179 00180 YEAH HE WAS A LITTLE BIT UNDER THE WEATHER 00181 NO HE BUILT THIS BUILDING AND AS HE CLOSED DOWN HE WAS A YOU KNOW A MULTIMILLIONNAIRE 00182 00183 BUT HE DIDNT LIKE TO SPEND MONEY 00184 NO REALLY AND AS HED TEAR DOWN HIS OLDER THEATRES 00185 HED TAKE YOU KNOW SEATS SOME OF THE 00186 SEATS SOME OF THE BETTER SEATS OUT OF THE THEATER YOU KNOW 00187 AND PUT THEM IN THIS PLACE AND LIKE HED HAVE 00188 A BLUE SEAT AND A YELLOW SEAT AND A RED 00189 SEAT YOU KNOW RIGHT NEX NEXT TO EACH OTHER 00190 AND THE SAME WITH THE CARPET YOU KNOW THESE LITTLE 00191 SOUARES OF CARPET HERE AND THERE YOU KNOW 00192 HE WAS REALLY FRUITY NO NO NO THEY SPENT PRETTY NEARLY A 00193 00194 MILLION DOLLARS WORTH OF SEA FOR THE SEA SEATING IN THE 00195 PLACE YEAH THEYRE NEW SEATS 00196 VERY ELABORATE SEATING 00197 OF COURSE UH WHEN HE DIED UH 00198 BEGINNING OF THE YEAR WELL THE 00199 ATTORNEYS TO THE YOU THE ATTORNEYS FOR 00200 THE YOU KNOW THE ATTORNEYS FOR THE ESTATE

00201 THEY DECIDED TO OPEN UP THE THING YOU KNOW

SPEAKER BN, CONVERSATION, SPELLING TRANSCRIPTION

00001 WE HAVE A LIST OF PRIORITIES RIGHT 00002 OF THINGS TO 00003 BUY IN THE NEAR FUTURE 00004 SOME OF THEM I AGREE WITH AND SOME OF THEM I 00005 DONT YOU REMEMBER THE SIZE OF OUR 00006 PLACE WHE WANTS TO BUY WHAT SHE 00007 CALLS A MONSTER CHAIR FOR ABOUT YOU KNOW 00008 HOW MUCH I FORGOT EXACTLY HOW 00009 MUCH IT COSTS AND ITS OVER AT 00010 SCHOTTENSTEINS ITS UH SHE CALLS IT A MONSTER 00011 CHAIR ITS ABOUT SO YOU KNOW TWO YARDS 00012 WIDE UH 00013 THREE YARDS YEAH TWO PEOPLE CAN FIT ON IT 00014 ITS ABOUT MAYBE THAT HIGH OFF THE FLOOR AND IT HAS THIS BIG SOUARE THING YOU KNOW THAT YOU CAN PUT YOUR 00015 FEET ON BUT ITS COVERED WITH FUR 00016 00017 RIGHT 00018 UH ITS SEXY VERY SEXY 00019 ANYWAY SHE FELL IN LOVE WITH THE THING 00020 AND UH SHE WANTS TO BUY IT AND I KEPT ON 00021 ARGUING WITH HER ABOUT IT SHE WANTED 00022 I ARGUED THE PLACE WAS TOO SMALL WHICH 00023 OF COURSE IT IS 00024 ANYWAY SHE WAS QUITE ADAMANT 00025 ABOUT IT AND FINALLY ONE 00026 WEEKEND SHE COMPLETELY 00027 REARRANGED THE HOUSE AND MOVED EVERYTHING LIKE 00028 ALL THE BOOKS ARE IN THE BEDROOM NOW OF ALL 00029 PLACES RIGHT AND UH 00030 UH LIKE WE HAVE SHELVES PILED ALL THE WAY HALF 00031 UP TO THE CEILINGS ON MOST OF THE WALLS 00032 EXCEPT THIS ONE AND 00033 UH WELL SHE CONVINCED ME THERES ENOUGH 00034 ROOM IN THERE FOR A MONSTER CHAIR 00035 AND ANYWAY OF COURSE NOW THERE WOULDNT BE ANY ROOM FOR 00036 BICYCLES 00037 WELL I WOULD IF WE GOT NEW BICYCLES RIGHT FOR THE TIME BEING WEVE GOT OLD 00038 00039 OLD RUSTY 00040 USED 00041 SLOW DIFFICULT TO PEDAL 00042 UH UNSTEALABLE

00043 WELL TO ME THE MONSTER CHAIR ISNT UH EVEN ISNT

185 00044 EVEN ON THE LIST 00045 BUT YOU KNOW SHES GOTTEN IT SO MUCH INTO HER HEAD THAT 00046 YESTERDAY SHE WISTFULLY SAID BARRY WOULD YOU 00047 YOU LIKE TO GO SEE THE MONSTER CHAIR SHE WANTS TO GO 00048 LOOK AT IT YOU KNOW SHES ALREADY SEEN THE THING TWICE NOW SHE WANTS TO GO LOOK 00049 00050 AT IT AGAIN ANYWAY WE JUST FOUND OUT THAT THAT THAT 00051 00052 THAT THE CAR NEEDS A AN EXPENSIVE REPAIR 00053 THEY HAVE TO PULL THE ENGINE OUT 00054 AND FIX THE UH GASKETS OR SOMETHING 00055 ITS FIFTY SIX ON IT 00056 FIFTY SIX THOU THOUSAND MILES 00057 ITS GONE THE ALASKA HIGHWAY YOU KNOW 00058 YOU DIDNT KNOW THAT 00059 YEAH THAT THAT WAS THE UH THE FIRST 00060 SUMMER THAT WE WERE ACTUALLY MARRIED 00061 THE ALASKA HIGHWAY OH WELL ITS 00062 FINE EXCEPT THAT UH 00063 TRUCKS COMING THE OTHER WAY TEND TO GO REAL 00064 FAST AND KICK UP GRAVEL 00065 AND THE GRAVEL TENDS TO YOU KNOW LODGE 00066 **ITSELF IN YOUR WINDSHIELD** 00067 **OR IN YOUR HEADLIGHTS** 00068 ANY ANYWAY YOUR CAR CAN GET PRETTY 00069 BEAT UP FROM ALL THE GRAVEL 00070 BASICALLY AND OF COURSE WE WENT THROUGH A SET OF TIRES 00071 IM NOT SURE EXACTLY BUT YOU YOU 00072 FIGURE UH ITS FOUR DAYS EACH WAY 00073 FROM DAWSON CREEK TO FAIRBANKS 00074 WELL NO THEYRE NOT 00075 PAVED THEYRE UH NI THEYRE 00076 THEYRE GRAVEL ROADS YOU KNOW GRADED 00077 THEYRE THEYRE WELL MAINTAINED 00078 LIKE THEY THEY THEY ALWAYS HAVE THESE MAINTENANCE 00079 UH THEY HAVE MAINTENANCE SHEDS YOU KNOW EVERY 08000 FIFTY MILES OR SOMETHING YOU KNOW THEYRE ALWAYS OUT THERE YOURE ALWAYS PASSING GRADERS 00081 AND YOU KNOW PEOPLE WORKING IN THE ROAD 00082 OH ITS FANTASTIC EDMONTONS A REALLY BEAUTIFUL CITY 00083 AND THE UNIVERSITYS REALLY REALLY NICE 00084 AND YOU KNOW THE CAMPUS IS REALLY REALLY BEAUTIFUL 00085 00086 CLEANER THAN HERE THIS PLACE IS INCREDIBLY CLEAN 00087 I CAME FROM PHILADELPHIA 88000 PHILADELPHIAS VERY DIRTY

00089 YES THE WIND BLOWS THE WRONG WAY YOU CAN SMELL IT 00090 OH THERE ARE A LOT LOT OF UH CHEMICALS AND 00091 **OIL REFINERIES AND** 00092 YOU KNOW PETRO CHEMICAL STU UH 00093 PLANTS WHICH ARE 00094 YOU KNOW YOU CAN SEE THEM ACTUALLY FROM 00095 THE UNIVERSITY AREA AND IF THE WIND BLOWS THE WRONG WAY 00096 YOU KNOW IT 00097 I MEAN ITS A NICE CAMPUS UNIVERSITY OF PENNSYLVANIA 00098 I MEAN ITS A BIG CITY IT FEELS LIKE A 00099 BIG CITY ITS DIRTY AS HELL 00100 COMPARED WITH HERE RIGHT OH SURE WELL THERES THE ACADEMY OF MUSIC 00101 00102 WHICH IS FANTASTIC LIKE THERES NO PLACE ON EARTH LIKE 00103 THE ACADEMY OF MUSIC IN PHILADELPHIA 00104 LIKE WE WOULD SIT IN THE 00105 HIGHEST BALCONY 00106 THE LAST ROW BACK RIGHT IN THE MIDDLE 00107 ITS THE BEST SEAT IN THE HOUSE 00108 WELL I WENT TO SLEEP AT NINE THIRTY YOU KNOW SO WHEN YOU GO TO SLEEP THAT EARLY YOU EXPECT ALMOST 00109 00110 HALF EXPECT THAT SOMEBODYS GOING TO CALL YOU 00111 ISNT THAT SO 00112 NO I DIDNT TRIP OVER THE WEEKEND KELLEYS ISLAND YEAH WE WERE THERE 00113 00114 UH THE WEEKEND BEFORE THAT 00115 UH YOU GO ACROSS ON A FERRY 00116 ITS A LITTLE FERRY THAT CARRIES YOU KNOW 00117 MAYBE TWENTY CARS 00118 FEWER THAN THAT MAYBE FIFTEEN CARS 00119 AND PASSENGERS AND BICYCLES 00120 AND THE ISLAND IS REALLY SMALL YOU 00121 COULD PROBABLY WALK AROUND IT IN AN HOUR 00122 YOU CAN SWIM AND CAMP THERE ITS A STATE PARK 00123 YOU CAMP RIGHT BY THE BEACH 00124 AND THE WATERS CLEAR ITS VERY NICE FOR THAT 00125 FUNNILY ENOUGH I MEAN ITS LAKE ERIE RIGHT BUT THE WATERS CLEAR 00126 00127 HUH UH THATS BECAUSE THE BEACH IS ON THE 00128 THE CANADIAN SIDE RIGHT 00129 WHERE IN KELLEYS ISLAND 00130 YEAH THERE ARE GOOD PARTS OF THE LAKE AND BAD PARTS YOU KNOW ON KELLEYS 00131 ISLAND THERES OUITE A DIFFERENCE BETWEEN THE SOUTH SIDE OF THE 00132 ISLAND AND THE NORTH SIDE OF THE ISLAND THE FERRY ARRIVES ON THE SOUTH SIDE AND THE WATER LOOKS AWFUL 00133

00134 ACTUALLY IT LOOKS LIKE UH 00135 I DONT KNOW JUST KIND OF GREEN CRAP 00136 YOU KNOW 00137 ITS REALLY DISGUSTNG YOU KNOW 00138 IT LOOKS LIKE SEAWEED SOUP 00139 OR I DONT KNOW 00140 ANYWAY THE NORTH SIDE OF THE ISLAND IS YOU KNOW OUITE DIFFERENT ITS VERY STRANGE 00141 00142 BUT YOU KNOW LIKE THERE ARE PARTS OF THE LAKE THAT ARE NICE 00143 AND PARTS OF THE LAKE THAT ARENT THE WAY 00144 IT STANDS NOW OF COURSE THEY SAY THAT THE WHOLE LAKE IS DEAD OUOTE DEAD 00145 I DONT KNOW WHAT THAT MEANS BUT YOU KNOW THE THERE ARE 00146 00147 STILL FISH I MEAN YOU KNOW PEOPLE FISH AND THEY 00148 CATCH FISH THERE 00149 UH I SUPPOSE THEYRE SMALLER THAN THE FISH USED TO BE 00150 BUT THE WATERS CLEAR ON THE NORTH SIDE LIKE YOU KNOW IF 00151 YOU OPEN YOUR EYES UNDER WATER AND SEE YOUR HAND 00152 ITS HARD TO IMAGINE FOR AN OHIOAN RIGHT 00153 LIKE NOWHERE IN OHIO CAN YOU FIND THAT KIND OF WATER 00154 YEAH WHERE YOU WOULDNT OPEN YOUR EYES ANYWAY 00155 CAUSE THE CHLORINE WOULD KILL YOU 00156 I ONCE BROKE MY NECK ALMOST 00157 I THOUGHT I DID 00158 SO DID THE GYM TEACHER 00159 LIKE HE PANICKED AND SORT OF SAID YOU KNOW RUN FOR THE NURSE RUN FOR THE 00160 00161 DOCTOR, RUN FOR THE AMBULANCE 00162 HE WAS REALLY NERVOUS 00163 I LANDED ON MY HEAD ON THE TRAMPOLINE I LANDED ON MY 00164 00165 HEAD AND UH I KIND OF 00166 LIKE MY HEAD WENT THE WRONG WAY 00167 INSTEAD OF GOING THIS WAY IT WENT THAT WAY 00168 I GUESS IT WAS LIKE WHIPLASH 00169 I SUPPOSE ANYWAY I DIDNT NEED ANYTHING FROM IT IT WAS JUST IT WAS SORT OF 00170 SEMI PARALYZED FOR A FEW MINUTES 00171 YOU KNOW LIKE YOU KNOW FOR A GOOD FEW MINUTES I COULDNT MOVE 00172 00173 YOU KNOW THATS WHY THE GYM TEACHER WAS SO PANICKED 00174 OH I FELT REALLY HORRIBLE BUT YOU KNOW 00175 WHEN I CAME OUT OF IT I CAME OUT OF IT YOU KNOW ID 00176 REALIZED THAT I WAS OKAY 00177 WELL WHAT DO YOU SAY 00178 ABOUT THREE DAYS WE WENT TO A

00182 UH WE KNEW THIS GUY WHO UH

00183 TOOK US TO THIS YOU KNOW THIS

PARTY AND IT TURNED OUT TO BE LIKE THAT YOU KNOW 00184

00185 WE HUNG AROUND AND THERE WERE THESE PEOPLE ALL SPACED

00186 OUT LOUNGING AROUND IT WAS REALLY

00187 KIND OF STRANGE

REALLY NUTS

00179 00180

00181

00188 SO WE SAW THEM DOING IT IN THE BACK ROOM

00189 YOU KNOW AND THEY HAD A POT BOILING ON THE KITCHEN STOVE

00190 IT WAS REALLY PRETTY PRETTY DISGUSTING I KIND OF

00191 FELT VERY BAD ABOUT IT

00192 ANYWAY I HAVE HAPPIER MEMORIES OF LONDON

00193 TOO LIKE IT BEING VERY COOL

00194 IN THE SUMMERTIME BUT IT WAS LIKE MAYBE SIXTY

00195 SIXTY TWO DEGREES VERY HUMID KIND OF

00196 MISTY AND LIKE

00197 WALKING ALONG AND ITS A YOU KNOW SUBURBAN

00198 LONDON SORT OF

00199 YUGOSLAVIA I SAW THROUGH A JUN A JAUNDICED

00200 EYE AS THEY SAY

BECAUSE I HAD UH HEPATITIS 00201

00202 WHEN I WAS THERE

00203 I STARTED GETTING SICK ON THE UH ON THE TRAIN

00204 FROM TRIESTE TO LJUBLANA

00205 I DIDNT KNOW I HAD JAUNDICE UNTIL I WAS ALMOST

00206 THROUGH WITH IT LIKE I

00207 HAD A FAIRLY MILD CASE THEY ONLY FOUND

80200 OUT IN UH WHEN I GOT TO ISREAL

00209 YOU KNOW MAYBE THREE WEEKS AFTER THE WHOLE

00210 THING STARTED THEY UH

OH YEAH YEAH IT WAS UH A KIBBUTZ DOCTOR 00211

00212 RIGHT I HAD SEEN

00213 UH TWO

00214 YUGOSLAV DOCTORS AN AMERICAN DOCTOR IN

00215 YUGOSLAVIA AND A GREEK DOCTOR IN

00216 ATHENS AND IT TOOK UH

00217 THIS HICK DOCTOR IN

00218 THIS KIBBUTZ IN ISREAL TO

00219 FINALLY DIAGNOSE IT AND HE DID IT BY LOOKING AT THE

WHITES OF MY EYES HE SAW YELLOW IN THE WHITES OF THE EYES 00220

00221 IT MUST HAVE BEEN A MILD CASE

00222 BECAUSE THERE WASNT A DAY THAT I DIDNT UH GET

UP AND WALK AROUND YOU KNOW WHAT I MEAN 00223

SPEAKER BN, READING, SPELLING TRANSCRIPTION

00001 WE HAVE A LIST OF PRIORITIES RIGHT 00002 OF THINGS TO BUY IN THE NEAR FUTURE 00003 SOME OF THEM I AGREE WITH AND SOME OF THEM I DONT 00004 YOU REMEMBER THE SIZE OF OUR PLACE 00005 SHE WANTS TO BUY WHAT SHE CALLS A MONSTER CHAIR 00006 FOR ABOUT YOU KNOW HOW MUCH I FORGOT 00007 EXACTLY HOW MUCH IT COSTS AND ITS 80000 OVER AT SCHOTTENSTEINS ITS SHE 00009 CALLS ITS A MONSTER CHAIR ITS ABOUT SO YOU KNOW 00010 TWO YARDS WIDE THREE YARDS YEAH 00011 TWO PEOPLE CAN FIT ON IT ITS ABOUT 00012 MAYBE THAT HIGH OFF THE FLOOR AND IT HAS THIS BIG 00013 SOUARE THING THAT YOU CAN PUT 00014 YOUR FEET ON ITS COVERED WITH FUR RIGHT 00015 ITS SEXY VERY SEXY 00016 AND ANYWAY SHE FELL IN LOVE WITH THE THING 00017 AND SHE WANTS TO BUY IT AND I KEEP ON 00018 I I KEPT ON ARGUING WITH HER ABOUT IT 00019 SHE WANTED I ARGUED THE PLACE WAS TOO 00020 SMALL WHICH OF COURSE IT IS ANYWAY SHE 00021 SHE WAS QUITE ADAMANT ABOUT IT AND FINALLY 00022 ONE WEEKEND SHE COMPLETELY 00023 REARRANGED THE HOUSE AND MOVED EVERYTHING LIKE ALL OF THE 00024 THE BOOKS ARE IN THE BEDROOM NOW OF ALL PLACES 00025 RIGHT AND UH LIKE WE HAVE 00026 SHELVES PILED ALL THE WAY UP TO HA 00027 UH ALL THE WAY HALF UP TO THE CEILINGS 00028 ON MOST OF THE WALLS EXCEPT THIS ONE 00029 WELL SHE CONVINCED ME THERES ENOUGH ROOM 00030 IN THERE FOR A MONSTER CHAIR ANYWAY OF COURSE NOW THERE WOULDNT BE ANY ROOM FOR BICYCLES 00031 00032 WELL I WOULD IF WE GOT NEW BICYCLES FOR THE TIME BEING WEVE GOT OLD OLD RUSTY 00033 00034 USED SLOW DIFFICULT TO PEDAL 00035 UNSTEALABLE WELL TO ME ME THE MONSTER CHAIR ISNT EVEN ON THE LIST 00036 00037 BUT YOU KNOW SHES GOTTEN IT SO MUCH INTO HER 00038 HEAD THAT YESTERDAY SHE WISTFULLY SAID BARRY WOULD YOU LIKE TO GO SEE THE MONSTER 00039 00040 CHAIR SHE WANTS TO GO LOOK AT IT YOU KNOW SHES ALREADY SEEN THE THING TWICE AND NOW SHE 00041 00042 WANTS TO GO LOOK AT IT AGAIN 00043 WE JUST FOUND OUT THE CAR NEEDS AN EXPENSIVE

00044 REPAIR THEY HAVE TO PULL THE ENGINE OUT 00045 AND FIX THE GASKETS OR SOMETHING ITS FIFTY SIX ON IT FIFTY SIX THOUSAND 00046 MILES ITS GONE THE ALASKA HIGHWAY 00047 00048 YOU KNOW DIDNT YOU KNOW THAT YEAH IT WAS THE FIRST SUMMER THAT WE WERE ACTUALLY 00049 00050 MARRIED IS IT HARD TO DRIVE THE ALASKA 00051 HIGHWAY WELL IT WAS FINE EXCEPT THAT TRUCKS GOING THE OTHER WAY TEND TO GO REAL 00052 00053 FAST AND KICK UP GRAVEL 00054 AND THE GRAVEL TENDS TO LODGE ITSELF IN YOUR WINDSHIELD OR IN YOUR HEADLIGHTS 00055 00056 ANYWAY YOU KNOW YOUR CAR CAN GET PRETTY BEAT UP FROM ALL THE GRAVEL 00057 00058 BASICALLY AND OF COURSE WE WENT THROUGH A SET OF 00059 TIRES IM NOT SURE EXACTLY BUT YOU FIGURE IT'S FOUR 00060 00061 DAYS EACH WAY FROM DAWSON CREEK TO FAIRBANKS 00062 WELL NO THEYRE NOT PAVED THEYRE 00063 GRAVEL ROADS YOU KNOW GRADED 00064 THEYRE WELL MAINTAINED LIKE THEY ALWAYS HAVE THESE 00065 MAINTENANCE THEY HAVE MAINTENANCE SHEDS YOU KNOW EVERY 00066 FIFTY MILES OR SOMETHING YOU KNOW THEYRE ALWAYS OUT THERE YOURE ALWAYS PASSING 00067 80000 GRADERS YOU KNOW PEOPLE WORKING ON THE ROAD OH ITS FANTASTIC EDMONTONS A REALLY 00069 00070 BEAUTIFUL CITY AND THE UNIVERSITYS 00071 REALLY REALLY NICE AND YOU KNOW THE CAMPUS IS 00072 REALLY REALLY BEAUTIFUL CLEANER THAN HERE THIS PLACE IS INCREDIBLY 00073 CLEAN I CAME FROM PHILADELPHIA PHILADELPHIAS 00074 00075 VERY DIRTY YES THE WIND BLOWS THE WRONG WAY YOU CAN SMELL IT 00076 00077 THERE ARE A LOT OF CHEMICALS AND OIL 00078 REFINERIES AND YOU KNOW PETRO CHEMICAL PLANTS WHICH ARE YOU KNOW YOU CAN SEE THEM 00079 ACTUALLY FROM THE UNIVERSITY AREA IF THE WIND 08000 00081 BLOWS THE WRONG WAY YOU KNOW I MEAN ITS A NICE CAMPUS UNIVERSITY OF 00082 00083 PENNSYLVANIA ITS A BIG CITY IT FEELS LIKE A BIG CITY ITS DIRTY AS HELL 00084 00085 COMPARED WITH HERE RIGHT OH SURE WELL THERES THE ACADEMY OF 00086 00087 MUSIC WHICH IS FANTASTIC THERES NO PLACE ON EARTH 00088 · LIKE THE ACADEMY OF MUSIC IN PHILADELPHIA

LIKE WE WOULD SIT IN THE HIGHEST BALCONY THE LAST 00089 00090 ROW RIGHT IN THE MIDDLE IS THE BEST SEAT IN THE HOUSE 00091 WELL I WENT TO SLEEP AT NINE THIRTY SO WHEN YOU 00092 GO TO SLEEP THAT EARLY YOU EXPECT ALMOST HALF 00093 EXPECT THAT SOMEBODY GOING TO CALL YOU ISNT 00094 THAT SO KELLEYS ISLAND YEAH WE 00095 WERE THERE THE WEEKEND BEFORE THAT YOU GO ACROSS ON A FERRY ITS A LITTLE FERRY THAT 00096 00097 CARRIES YO'J KNOW MAYBE TWENTY CARS FEWER THAN 00098 THAT MAYBE FIFTEEN CARS AND 00099 PASSENGERS AND BICYCLES AND THE ISLAND IS REALLY SMALL YOU CAN PROBABLY WALK AROUND IT 00100 00101 IN AN HOUR YOU CAN SWIM AND 00102 CAMP THERE THERES A STATE PARK YOU CAMP RIGHT BY THE BEACH ITS VERY NICE FOR THAT AND THE WATERS 00103 00104 CLEAR FUNNILY ENOUGH I MEAN ITS LAKE ERIE **RIGHT BUT THE WATERS CLEAR** 00105 00106 UH HUH THATS CAUSE THE BEACH IS ON THE CANADIAN SIDE THERE ARE GOOD PARTS OF THE LAKE AND 00107 00108 BAD PARTS YOU KNOW ON KELLEYS ISLAND ITS QUITE A 00109 DIFFERENCE BETWEEN THE SOUTH SIDE OF THE ISLAND AND THE 00110 NORTH SIDE OF THE ISLAND. THE FERRY ARRIVES ON THE SOUTH 00111 SIDE THE THE WATER LOOKS AWFUL 00112 ACTUALLY IT LOOKS LIKE I DONT KNOW JUST LIKE A 00113 A KIND OF GREEN CRAP YOU KNOW ITS REALLY DISGUSTING 00114 IT LOOKS LIKE SEAWEED SOUP ANYWAY THE NORTH SIDE OF THE ISLAND IS YOU KNOW QUITE DIFFERENT 00115 ITS VERY STRANGE BUT YOU KNOW LIKE THERE ARE PARTS 00116 00117 OF THE LAKE THAT ARE NICE AND PARTS OF THE LAKE THAT 00118 ARENT THE WAY IT STANDS NOW OF COURSE 00119 THEY SAY THAT THE WHOLE LAKE IS DEAD OUOTE 00120 DEAD I DONT KNOW WHAT THAT MEANS 00121 YOU KNOW THERE ARE STILL FISH 00122 I MEAN YOU KNOW PEOPLE FISH AND THEY CATCH FISH THERE 00123 I SUPPOSE THEYRE SMALLER THAN THE FISH 00124 USED TO BE BUT THE WATERS CLEAR ON THE NORTH 00125 SIDE LIKE YOU KNOW YOU CAN OPEN YOUR EYES UNDER 00126 WATER AND SEE YOUR HAND THATS 00127 HARD TO IMAGINE FOR AN OHIOAN RIGHT 00128 LIKE NOWHERE IN OHIO CAN YOU FIND THAT KIND OF WATER EXCEPT IN A POOL YEAH WHERE YOU 00129 00130 WOULDNT OPEN YOUR EYES ANYWAY BECAUSE THE 00131 CHLORINED KILL YOU I ONCE BROKE MY NECK ALMOST I THOUGHT 00132 00133 I DID SO DID THE GYM TEACHER LIKE HE

00134 PANICKED AND SAID YOU KNOW RUN FOR THE NURSE, RUN FOR THE 00135 DOCTOR HE WAS REALLY NERVOUS 00136 I LANDED ON MY HEAD ON THE TRAMPOLINE I LANDED 00137 ON MY HEAD AND UH I KIND OF LIKE MY 00138 HEAD WENT THE WRONG WAY INSTEAD OF GOING THIS WAY I WENT THAT WAY IT WENT 00139 00.140 THAT WAY I GUESS IT WAS LIKE WHIPLASH 00141 I SUPPOSE ANYWAY I DIDNT NEED 00142 ANYTHING FROM IT I WAS JUST SORT OF 00143 SEMI PARALYZED FOR A FEW MINUTES LIKE YOU KNOW 00144 FOR A GOOD FEW MINUTES I COULDNT MOVE THATS WHY 00145 THE GYM TEACHER WAS SO PANICKED 00146 I FELT REALLY HORRIBLE AND YOU KNOW WHEN I CAME OUT 00147 OF IT YOU KNOW I REALIZED I WAS 00148 OKAY ABOUT THREE DAYS WE WENT 00149 TO A HOMOSEXUAL PARTY WHERE THEY WERE SHOOTING 00150 HEROIN IM ABSOLUTELY SERIOUS AND IT WAS NUTS I KNEW THIS GUY WHO TOOK US 00151 TO THIS YOU KNOW THIS PARTY AND IT TURNED OUT TO BE 00152 00153 THAT YOU KNOW WE HUNG AROUND AND THERE WERE THESE 00154 PEOPLE ALL SPACED OUT LOUNGING AROUND 00155 IT WAS REALLY KIND OF STRANGE SO WE SAW THEM 00156 DOING IT IN THE BACK ROOM YOU KNOW AND THEY HAD A POT 00157 BOILING ON THE KITCHEN STOVE IT WAS REALLY PRETTY 00158 DISGUSTING I KIND OF FELT VERY BAD ABOUT IT AND 00159 ANYWAY I HAVE A HAPPIER I HAVE HAPPIER MEMORIES 00160 OF LONDON TOO LIKE BEING VERY 00161 COOL IN THE SUMMERTIME BUT 00162 IT WAS LIKE MAYBE SIXTY SIXTY TWO DEGREES 00163 VERY HUMID KIND OF MISTY AND KIND OF WALKING ALONG 00164 IN SUBURBAN LONDON SORT OF YUGOSLAVIA 00165 I SAW THROUGH A JAUNDICED EYE AS THEY 00166 SAY BECAUSE I HAD HEPATITIS WHEN I WAS THERE 00167 I STARTED GETTING SICK ON THE TRAIN FROM TRIESTE TO LJUBLANA I DIDNT KNOW I 00168 00169 HAD JAUNDICE UNTIL I WAS ALMOST THROUGH WITH IT 00170 I HAD A FAIRLY MILD CASE THE I ONLY FOUND OUT WHEN 00171 I GOT TO ISREAL YOU KNOW MAYBE THREE WEEKS 00172 AFTER THE WHOLE THING STARTED THEY OH YEAH IT WAS A 00173 KIBBUTZ DOCTOR I HAD SEEN TWO YUGOSLAV DOCTORS 00174 AN AMERICAN DOCTOR IN YUGOSLAVIA 00175 AND A GREEK DOCTOR IN ATHENS 00176 AND IT TOOK THIS HICK DOCTOR IN THIS KIBBUTZ IN ISREAL 00177 TO FINALLY DIAGNOSE IT AND HE DID IT BY 00178 LOOKING AT THE WHITES OF MY EYES HE SAW YELLOW IN THE

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00180 WASNT A DAY I DIDNT GET UP AND WALK AROUND YOU KNOW WHAT I MEAN

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