Journal of the Atlantic Provinces Linguistic Association

vol. 1
1978

Revue de l'Association de Linguistique des Provinces Atlantiques

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This first issue of this journal has been published with financial help from the Faculty of Arts of the University of New Brunswick.

JOURNAL

OF THE

ATLANTIC PROVINCES LINGUISTIC ASSOCIATION

REVUE

DE L'ASSOCIATION DE LINGUISTIQUE DES PROVINCES ATLANTIQUES

Volume 1, 1978

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THE ATLANTIC PROVINCES LINGUISTIC ASSOCIATION

The Atlantic Provinces Linguistic Association was formed at a meeting held on October 28, 1978 at Mount Saint Vincent University. The Association was conceived as a forum in which linguists working throughout the Atlantic area could become acquainted with each other. It was felt that the exchange of interest, information and inspiration resulting from this contact would promote linguistic endeavors of all types in the region. The University hosted the association which was addressed in public lecture by Dr. Rex Wilson of the University of Western Ontario.

The following day, October 29, the Association held its first sessions of academic papers. Some of these papers appear in this first issue of the Journal of the APLA. We who have been working in establishing these modest ventures hope that they will thrive and carry out the purposes of the association.

The following members of the Association were elected as its first executive officers.

President: George Patterson, Mount Saint Vincent University

Vice-President: Moshe Starets, Université Sainte-Anne

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Irene Bernard, Mount Saint Vincent University

Asymmetric Syndetic Conjunction of Ukrainian Relative Clauses: Implications for the Theory of Coordination.

John A. Barnstead, Dalhousie University

Several Indo-European languages allow a relative clause to be conjoined with a second clause in which a personal pronoun is coreferential with the head of the relative clause.[1] In Ukrainian, however, this phenomenon, exemplified by the sentence

(1) "Ce, -- nu, pravdu skazaty, -- Antosyni čerevyky, z jakyx vona davno vyrosla j davno jix ne nosyt'."
(Dokija Humenna, Dity čumac'koho šljaxu)
"These, to tell the truth, are Antosja's shoes, which she outgrew long ago and which she hasn't worn for a long time." (Note that a more literal translation is ungrammatical: *"These, to tell the truth, are Antosja's shoes, which she outgrew long ago and hasn't worn them for a long time.")

has not been analyzed or indeed noticed, nor have the restrictions on such conjoinability ever been systematically described or motivated for any language.

The analogous constructions in English are often at best only marginally acceptable, as is evidenced in the translation of the Ukrainian, or by the following

examples:

(2) "There are things, however, Ø one can do and live on with the thought of them."

(Mary Renault, The Mask of Apollo)

(3) "The passages in between must be reduced to sutures of sense, logical bridges of the simplest design, brief expositions and explanations, which the reader will probably skip but must know they exist in order not to feel cheated (a mentality stemming from the routine of "true" fairy tales in childhood)."

(Vladimir Nabokov, "On a Book Entitled Lolita")

Jesperson 1928 terms these constructions "exhausted relative clauses" and characterizes them as follows: "Not infrequently a relative clause, which has been begun in the ordinary way, is continued irregularly as if the power of the relative were exhausted, a personal pronoun being substituted for it" (p. 107). This intuitive analysis of the second conjunct as a relative clause in which the relativizer has been replaced by a personal pronoun is, at least on the surface, a very attractive solution. It preserves the Coordinate Constituent Constraint proposed by Schachter 1977 ("The constituents of a coordinate construction must belong to the same syntactic category and have the same semantic function"), and it fits in with current analyses of the structure of relativizers. However, several syntactic phenomena in Ukrainian

cast doubt on this "replacement hypothesis", forcing its refinement.

In Ukrainian a relative clause may be introduced by the words jakyj, kotryj, or ščo. Jakyj and kotryj contain morphological markers of gender, number (identical with the gender and number of the head of the relative clause) and case (which is determined by the relativizer's syntactic role within the relative clause and may differ from that of the head):

(4) Ja baču ljudynu, jaka napysala cju knyžku.

(5) Ja baču ljudynu, kotra napysala cju knyžku.
"I see [the] person [f. sg. acc.] who [f. sg. nom.] wrote this book."

ščo does not contain such morphological markers, and is used by itself only in the nominative and prepositionless inanimate accusative. In other cases ščo must be combined with a third person pronoun which agrees in gender and number with the head and acquires its case from the role it plays in the subordinate clause:

(6) Ja baču ljudynu, ščo napysala cju knyžku.
"I see the person who wrote this book."

(7) Os' knyžka, ščo vin meni dav.
"Here [is the] book [f. sg. nom. inan.] which he to-me gave."

(8) Os' knyžka, šč̌o pro neji my hovorymo.
"Here [is the] book which about it [f. sg. acc.] we are-speaking."

All three relativizers are identical in morphological shape with question words: jakyj? "which? (out of an indefinite set)", kotryj? "which? (out of a limited set)" and šč̌o? "what?". In addition, šč̌o has the same shape as the šč̌o which introduces sentence-relatives (and which differs from the relativizer šč̌o in that it is declinable and may be preceded by a preposition) and the šč̌o complementizer introducing reported speech, while jakyj contains the morpheme jak, used in the question word jak? "how?" and as a complementizer introducing reported action after certain verbs of perception. The gender-number-case markers bear a strong resemblance to declined forms of the third person pronoun.

On the basis of analogous morphological similarities and of work on complementation done by Joan Bresnan (Bresnan 1972), Chvany 1973 suggests that in Russian K-words[2] are composed of the complementizing morpheme K (=WH) plus a pronominal element, and may be "spelled out" from a combination of K plus a bundle of pronominal features simultaneously with inflectional morphemes. If we adopt this scheme in Ukrainian, sentences like (1) may be derived from underlying structures containing conjoined relative clauses, with the complementizing morpheme in

the second conjunct deleted under indentity by an EQUI-type rule.

There are two factors which place the replacement hypothesis just outlined in doubt. The first is a difficulty arising from the position of the pronoun within the second adjunct: for example if the pronoun in (1) were derived from jakyx by the deletion of jak-, the underlying sentence would have the form

(9) *"Ce, -- nu, pravdu skazaty, -- Antosyni v̌erevyky, z jakyx vona davno vyrosla j davno jakyx ne nosyt'."

which would be ungrammatical due to the positioning of the adverb davno in front of the relativizer. Relativizers in Ukrainian may be preceded by prepositions, by noun phrases (if the relativizer is in the genitive) or by certain preposed infinitives (highly restricted), whereas limitations on the positioning of the pronoun are less severe. However, it may be that word order in Ukrainian is determined relatively late in the chain of derivation, after deletion of the complementizing element. It is quite likely that the presence of the complementizing element restricts positioning of the pronoun, as is evidenced by relative clauses introduced by s̆v̌co plus a form of the third person pronoun, in which movement of the pronoun from the position directly following s̆v̌co produces changes in the focus of the subordinate cluase.[3]

The second objection to the replacement analysis is due to a restriction on the placement of the conjuncts with respect to the main clause of the sentence. In Ukrainian the conjoined clauses must occur after the main clause in order to be acceptable; interpositioning renders the sentence ungrammatical. Thus, although the sentence

(10) Vin mov dytyna, jaka ščojno navčylasja xodyty j jij xočet'sja teper xodyty dosxoču.
"He is like a child who has just learned to walk and who now wants to walk to his heart's content."

is grammatical, the sentence

(11) *Dytyna, jaka ščojno navčylasja xodyty j jij xočet'sja teper xodyty dosxoču, snidaje v cij kimnati.
"The child who has just learned to walk and who now wants to walk to his heart's content has breakfast in this room."

is not. This restriction seems to hold true to some extent in English as well, where speakers who accept (2) will often reject

(12) The things one can do and live on with the thought of them paralyze the will.

No such restriction exists for conjoined clauses in which both

conjuncts contain a relativizer. This would suggest the presence of a boundary of some sort (perhaps the sentence boundary # ?) in sentences like (1), which boundary is not present in conjoined relatives. This, however, may be accounted for by making a slight modification in a proposal put forth in Chomsky 1965.

Chomsky suggests the generation of restrictive[4] relative clauses in the base by a phrase structure rule

$$NP_1 \rightarrow NP_2 \overset{\frown}{S}$$

This rule is blocked from generating sentences in which the embedded sentence does not contain an NP coreferential with NP_2 by a filter which eliminates from the output of the grammar all sentences containing an internal sentence boundary. Part of the relativization rule in this scheme is the erasure of sentence boundaries during relativization of the embedded S. Sentences in which the embedded S contains no NP coreferential with an NP in the matrix S do not undergo relativization; thus the internal sentence boundaries are not erased and such sentences are eliminated from the output by the filter.

If elimination of the sentence boundaries is contingent not on application of the relativization rule but upon the presence of an overt complementizing element within the embedded S, sentences like (1) and (10), and the ungrammaticality of (11) are predictable on the basis of the universal constraint against the presence of internal sentence boundaries.

Other restrictions on conjoining relative clauses with clauses containing a third person pronoun coreferential with the head of the relative clause suggest that Schachter's Coordinate Constituent Constraint, while it may be a necessary condition for conjoining, is not a sufficient one. Consider the following sentences:

(13) "Čy bula koly-nebud' potreba zaminyty slovo čužynec' [...] slovom inozemec', jake je kalkoju rosijs'koho slova inostranec, i joho vže vyključno vžyvaje Žluktenko v svojij hramatyci?"

(Jurij Perfec'kyj, "Movne vzajemozbahačennja čy rusyfikacija ukrajins'koji movy?")

"Was there ever a need to replace the word čužynec' [a native Ukrainian formation meaning "foreigner"] with the word inozemec', which is a calque on the Russian word inostranec and which Žluktenko already uses exclusively in his grammar?"

(14) *Treba zaminyty slovo čužynec' slovom inozemec', jake je kalkoju rosijs'koho slova inostranec i z nym Žluktenko ne xoče maty spravu.

"One must replace the word čužynec'with the word inozemec', which is a calque on the Russian word inostranec and which Žluktenko doesn't want anything to do with."

(15) *Treba zaminyty slovo čužynec' slovom inozemec', pro jake [or: ščo pro njoho] pyše Žluktenko v svojij hramatyci i vono je kalkoju rosijs'koho slova inostranec.
"One must replace the word cuzynec' with the word inozemec', about which Žluktenko writes in his grammar and which is a calque on the Russian word inostranec."

Sentences (14) and (15) can be made grammatical by substituting an appropriate relativizer for the third person pronoun in the second conjunct. Nothing in their form or content violates Schachter's Coordinate Constituent Constraint, and yet both of them are unacceptable as they stand.

There appear to be a number of factors involved in determining whether a given sentence containing a conjoined structure of the type under investigation will be grammatically acceptable. In (14) the main reason for unacceptability is the instrumental case of the pronoun in the second conjunct. Jakobson has shown that the instrumental case is the most peripheral case from a semantic point of view. It seems also to be the case least susceptible to deletion of the complementizing element. In (15) the nominative case of the pronoun seems to signal the beginning of a new sentence: although all my informants have rejected it as a unified sentence, several of them were willing to accept it if the second conjunct were given parenthetical intonation, or if a pause were made before beginning the second conjunct.

Native speakers tend to disagree more about the acceptability of sentences the further we descend in Jakobson's case hierarchy. Sentences like (15) suggest that perceptual strategies may also play a role in determining possible conjoinings. It is time to begin developing a theory of inter- (as opposed to intra-) sentence coordination.[5]

NOTES

1. Examples of the type of construction considered in this paper are provided: for Modern English, Jesperson 1928 (p. 107-8); for Modern German, Paul 1920 (p. 212-16) and Curme 1955 (p. 565); for Latin, Hofmann 1964 (§305c). Dr. Pierre Gérin has pointed out to me (personal communication) that it is found in Old French and in Greek as well.

2. K-words are the Russian equivalent of English WH-words. The term is less appropriate in Ukrainian, since the morpheme jak- (corresponding to Russian kak-) does not contain the K element, although šco and kotryj do.

3. For details see Barnstead (to appear). Similar focus phenomena are discussed in Chvany 1973.

4. Ukrainian does not distinguish restrictive versus non-restrictive relative clauses consistently. The distinction is discourse-conditioned, and different sources for the two types should not be posited. Details in Barnstead 1977 and (to appear).

5. I would like to thank Richard Brecht and Pierre Gérin for helpful information and suggestions in the preparation of this paper. Naturally I bear responsibility for the conclusions drawn. Thanks are also due my native informants, in particular Irina Belodedova and Martha Pryshlak, for service above and beyond the call of duty.

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THE SECRET LANGUAGE OF THE JAZZ MUSICIAN

Anthony B. House, University of New Brunswick

To the outsider, the language of the jazz musician is almost impossible to decipher. As a linguistic code, the jazz musician's argot is his defence against an unknowing and often hostile world. The nature of the music, often called 'the only original musical art form of North America' is of a complexity which requires a new lexicon other than classical European musical terminology. Thus neologisms have been created by necessity.

This article is an attempt to clarify the 'mystical' language of the jazz musician. It is limited to a brief history of the music; a new etymology of the noun/verb jazz; a short glossary of terms which were found either on records or through other more direct sources; a comparison of musical creation with linguistic creation in the Chomskyean sense; parallelism between 'spoken' and 'written' musical language and spoken and written human language; a conclusion which relates the music called jazz to its etymology.

A Brief History of the Music.

A good source of jazz's musical history is Feather (1960: 21-51).

Jazz is now in its eightieth year. It began as brass band marching music which evolved to a musical form known as jass. There is an interesting chronology, in that jazz can be dated in its major divisions by referring to social upheavals in American society.

The first period of jazz occurred between World War One to the Prohibition decade: Traditional Jazz, or Dixieland.

The second period, called swing, lasted until World War Two. The third period is called Modern Jazz, and it can be sub-divided into many categories from 1945 to the present. It is a fact that all types of jazz music are being played now, and that the musical tradition of jazz remains the same. That is: an emphasis on improvisation, based on human speech sounds, a strong sense of rhythm, which is the primary aspect of all music, and an open-ended assimilation of any musical source which the jazz musician can use. Jazz is the answer to twentieth-century music, of which it is a child. Jazz means: 'to speak'.

An Etymology.

The origin of the word jazz has been sought by many scholars, be they musicologists, or linguists. Unfortunately, the bias of each group has led to a fantasy world of

speculation. There is the question as to which form the term jazz took first, a verbal or a nominal form.

Feather, (op.cit.) seems to favour the verb form. This opinion is reinforced in Dearling and Dearling (1976: 21). It is stated that the first use in connection with any kind of dance music goes back to a song used in the Deep South during the 1880's, concerning a man called Johnson, jazzin' around. Jazz has been traced to the Latin rooted ego anus (Shirley 1977:36) by Don Shirley, a scholar and performing musician.

To follow his etymology would be a good game for a Romance Languages philologist.

There are other explanations of jazz found in Mencken (1974: 235). Names of performers are used to give an official name to the music. There is also the creole noun 'chasse' which seems probable, and fits with the following.

Here is a new etymology. Given the fact that jazz music came from early twentieth century creole and brass bands from the New Orleans area, it is more than probable that the etymon /ʒɑs/ can be related to the Acadian and Creole verb form jaser. There is a possible relationship to the noun, brass. Since jazz was spelled jass until circa 1920, (Feather 1960: 21 and 24) the well established rhyming game occurred, brass band becomes jass band. This type of word manipulation occurs very often among musicians,

and it is seen and heard even now. A striking example is the term bop, or Hey bop a re-bop; which was the name given to modern jazz by a New York City disk jockey.

Perhaps the most fascinating linguistic evidence is the verb jaser itself. The primary meaning is 'causer, babiller', with a secondary meaning of: 'prononcer des paroles humaines, en parlant du geai, de la pie, du perroquet, etc.' (Bélisle 1954: 671).

Thus to jaser is to speak as does a bird. Charles Parker the fountainhead of Modern Jazz otherwise known as 'Bird' or 'Yardbird' would appreciate such information.

The use of such a creole loan word would exclude the 'square' performers and listeners from the elitist jazz bands. Again, obscure terminology is still being used by modern jazz musicians. There is a standardizing tendency, but certain words have entered the lexicon and are used unknowingly, by people who have never heard or even seen a jazz musician.

A Short Glossary of Terms.

There is a great irony in such expressions as 'nitty-gritty' and 'having a ball', being mouthed by politicians, Shriners, and even the clergy. The expressions are clearly obscene, or at least vulgar. Verification of jazz argot terms may be found in Wentworth and Flexner 1960, and

Gold 1964.

In the original oral presentation of this article, ten words were examined, based on accompanying tapes. The words are: cool; re-lax; stevereeny; constituent; said on two separate occasions; expubident; worthy, as a pejorative; funky; ground glass and gunpowder; worser; and bop. It is impossible to present the phonostylistic and idiolectic effect of many of the above in writing. Thus the list has been cut to four words, some relatively familiar, others obscure and rare.

Cool denotes a particular school of jazz, which occurred in the early nineteen fifties.

'When "cool" came in with the early Fifties, this monosyllable assumed every grammatical function, operating as verb, adjective, noun.' (Goldman 1971: 292)

The first recording by Miles Davis was entitled Birth of the Cool, nominal function. 'Cool it', is often heard at jam-sessions with the meaning: stop playing, and cool used as an adjective still has a connotation of a smooth, aloof hipster of the Fifties.

Expubident, an adjective, has never to my knowledge been mentioned or analysed in any Jazz Dictionary. It was probably coined by 'Babs' Gonzales, a bop singer and educator. The term exists in a nominal form, expubidence, the name of Gonzales' own publishing company (Feather 1976: 154, 155).

It is possible, though this should be checked with Mr. Gonzales, that expubident has as a base form exuberant. It was the custom of bop singers to stretch syllables, change consonants and create new 'nonsense' words. In technical language, Gonzales did some very standard linguistic mutations, often seen in textbooks on diachronic phonetics. He performed a classic metathesis; devoicing, /b/→ /p/; and phonemic shifting, /r/→/d/; /ə/→/I/.

All jazz singers and musicians have an obsession with the spoken word. The saxophonist Lester Young memorized the lyrics to all tunes upon which he was to improvise.

The adjective worser was uttered by Erroll Garner on one of his records. It is simply a reinforced comparative adjective, used by a musical genius in a tense situation. Worser has met the same fate as the sub-standard ain't.

Bop, alluded to above, is an onomatopoeic noun and verb, referring to the new sounds of the revolutionary jazz of the Fifties. Its probable introduction into jazz argot is the style of playing by drummers such as Kenny Clark, who would pump out unusual 'bopping' sounds on the bass drum, which had before only been used as a metronome-like keeper of strict four-four time. The melodic instruments would follow his patterns, creating new melodies,

and changing the musical language.

Musical Creation and Linguistic Creation.

It is clear that a relationship exists between musical creation and linguistic creation.

Especially in jazz music, the act of listening and speaking musically relates to either the Saussure or Chomsky chain of communication. The correspondence between the act of speech, the reception of it, and the return to the speaker from the speaker/listener is remarkably similar to the actions of jazz musicians in performance. One can speculate about Langue and Parole, or Competence and Performance as it relates to the performing musician. His langue or competence is the stock-pile of the music which he has mastered and remembered; his parole or performance are what he can do with the items he has mastered. The changes he makes in musical performance equal creation.

There is one way out for the jazz musician, and for persons who (in music) like to speak. It is improvisation, and conversation for speakers of human language. Improvisation has for the last few hundred years been a lost art in European music. Conversation is almost non-existent among people in the western world. There is a strict correlation between conversation and musical

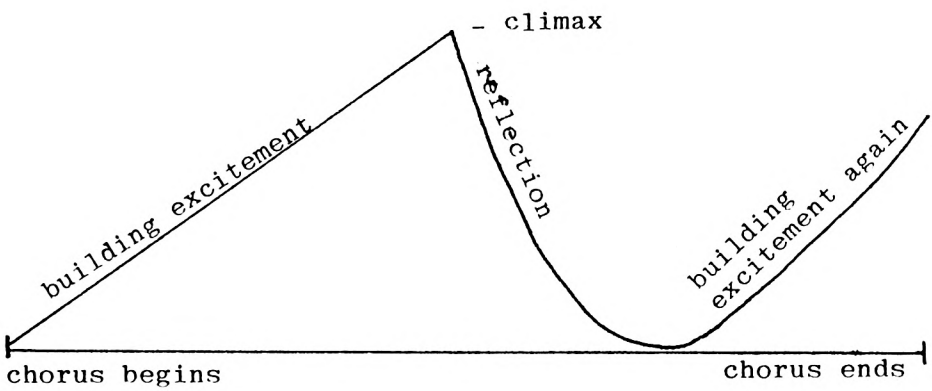
improvisation (Francis 1958: 188).

Jazz is parallel to spoken language, classical European symphonic music is more akin to written language; a novel is perhaps the best example. Each form of music has its own idiom, remarkably paralleled to the two linguistic/literary forms. The best analogy is to compare a conversation with written dialogue in any novel. The former is spontaneous, actual, innovative, ephemeral, and free. The latter is reproduced, potential, fixed, frozen in print, and at its worst, stultified. The human voice can never be duplicated by print. The musical voice of the jazz musician's performance has now been transcribed, but again, it is impossible to render by musical notation the exact phenomenon of a jazz musician's improvisation.

What is clear is that symphonic music and jazz music are in 'complementary distribution'. Each form is creative, but as of this moment in time, it is the jazz idiom which is a more open-ended form because it is based on human speech, as opposed to the constrictions of print or magnetic tape reproduction. Speech is primary. It is the main force behind linguistic change or diachrony as is jazz, it is hoped, the prime mover of twentieth century music.

Linguistics is often related to other fields (Hall 1964: 411-415). Prosodic musical features can be related to linguistic substrata of various composers' music.

In the minds of certain musical pedagogues, 'content' features are as well relevant to musical creation. (Kriss 1977: 54-55) How to improvise? One makes the analogy to spoken conversation. It is a question and answer situation. This is a standard jazz blues situation. Over a twelve bar chorus, one creates an interplay of at least three ideas. See below for an 'eargraph'; it approximates a sentence pattern in many languages.



The eargraph is a schematic of musical and linguistic conversation. It can be repeated formally until the 'thre ideas' have been exhausted. The length of the form depend upon the conceptual ability of the speaker/player. Anothe good example of musical and paralinguistic dialogue is found in the trading of 'fours', where four bar solos are exchanged, modified, answered, and convoluted by the performers. (Mencken 1974: 744)

Conclusion.

To play jazz and to listen to its sounds is an act of mutual creation. The secret language of the jazz musician is very open to anyone who wishes to consult the vast numb of books which concern themselves with the trade language of the practitioner.

'Jaser' means to speak in the manner of a bird. The 'secret' of the jazz performer's music and his argot is found in the etymology of the word itself. Jazz is musica speech.

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The Effect of Intonation on Listening Comprehension[1]

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Recently a number of psychologists have suggested that comprehension of discourse and single sentences is not simply a matter of applying linguistic knowledge to the information provided by the message itself. Rather, they have suggested, understanding a message involves applying the comprehender's knowledge of the world to the task of comprehending. Schallert (1976), for example, has shown that subjects given different perspectives of a text (in the form of titles for it) interpreted the text differently. She used passages which could be interpreted in two distinct ways and showed that a passage's title was a major predictor of performance on disambiguating multiple-choice questions about that passage. A second study (Anderson, Reynolds, Schallert, and Goetz, 1976) showed that people from different backgrounds who, therefore, have different systems of knowledge and belief about the world, interpret ambiguous discourse differently. Music education students and physical education students read a passage that could be interpreted as an evening of card playing or as a rehearsal of a woodwind quartet, and another passage that could be given either a prison break or a wrestling interpretation. Performance

[1] This study was supported by a grant from the Research Committee of Mount Saint Vincent University to the authors.

on disambiguating multiple choice tests was remarkably consistent with a subject's background. Apparently the knowledge structures and personal experiences an individual brings to a text provide an interpretive framework for comprehending that text, at least when the text is ambiguous.

The comprehension of internally consistent (unambiguous) discourse can also be influenced. Pichert and Anderson (1977) have shown that the importance, learnability, and memorability of idea units in a passage are strongly influenced by the perspective provided for a reader before he reads a passage. These data, as well as the results of the studies using ambiguous texts, have been discussed in terms of schema theory. Such data have been offered as examples of how schemata, or the knowledge structures a comprehender brings to a message, affect the understanding of the linguistic material explicitly given "in" the message.

An extensive discussion of schema theory has been presented by Rumelhart and Ortony (1977). For our purposes it is sufficient to say that schemata are memory structures that represent the generic concepts underlying objects, situations, events, sequences of events, actions, and sequences of action. A schema consists of a network of interrelations that generally hold among the constituents of the concept in question. Such schemata are abstract in the sense that they contain a "variable", "slot", or "place

holder" for each constituent element in the knowledge structure. Moreover, according to schema theory, schemata are the key units of the comprehension process. Understanding a message involves filling the slots in the appropriate schemata in such a way as to satisfy the constraints of the message and of the schemata.

The purpose of the experiment described in this paper was to determine whether characteristics of the presentatio of discourse would influence its comprehension. Chafe (197 has discussed the role of the packaging of a message in the comprehension of that message. He used the term packaging to refer to phenomena that "have to do primarily with how the message is sent and only secondarily with the message itself, just as the packaging of toothpaste can affect sale in partial independence of the quality of the toothpaste inside" (Chafe, 1976, p.28). One such form of packaging is the way a speaker chooses to place stress on particular words in a sentence. Chafe's paper indicates that stress patterns are used to convey two statuses of words--the stat of newness of information within the given-new distinction and the status of which one of a number of given alternativ within the contrastiveness distinction. These two roles of stress would appear to be closely allied to the task of filling the variables of schemata during the act of comprehending. Thus, in terms of schema theory, the question ask herein was whether the pattern of stress used when a messag

was presented could influence which details given in the message would be assimilated into schemata used to understand the message. The research involved an ambiguous message. We predicted that the stress pattern used to present this message would bias a subject's interpretation of it.

Methods

Subjects. Twenty students enrolled in experimental psychology at Mount Saint Vincent University participated in the study in order to fulfill a course requirement

Materials. The 152-word passage used (see Anderson, et al., 1976, pp. 10-11) usually is interpreted as a group of friends coming together to play cards; the alternative interpretation is a rehearsal of a woodwind quartet. Words in this passage that seemed to convey one or the other interpretation and that seemed to fit Chafe's descriptions for "newness" or "contrastiveness" were noted by the investigators. The passage then was read twice onto cassette tapes by a female experimenter. During the first reading those words which suggested a card game were stressed; during the second reading words suggesting a musical rehearsal were stressed.

Procedure. Subjects were assigned in an unbiased fashion to one of two groups and were tested in those groups. They heard one of the two tapes, completed an interpolated vocabulary task that required 6 minutes, were allotted 5 minutes to complete a free recall of the passage, and finally com-

pleted a short de-briefing questionnaire. The questionnaire asked subjects (1) to state the theme of the passage in one sentence and (2) to indicate if they had been aware of another interpretation of the passage.

Scoring. Wherever possible, subjects' protocols were categorized on the basis of the thematic sentences. In instances where the themes were unclear, the free recall protocols were examined.

Results and Discussion

In the Anderson et al. study (1976) when the card/music passage used here was read by undergraduate students the interpretations given to the passage could be predicted from the personal histories of the subjects (Anderson, et al., 1976). Moreover, 62% of those subjects did not report that a second interpretation of the passage was possible. In the present study, we predicted that the packaging of this ambiguous discourse would also play an important role in its interpretation.

Table 1 presents the number of subjects who heard either the quartet stress pattern or the card stress pattern and whose thematic sentences and free recall protocols reflected a quartet interpretation, a card interpretation, or some other interpretation. When the quartet stress pattern was used 7 subjects gave a musical rehearsal interpretation, two subjects gave a card interpretation, and 1 subject reported that the message described "a social evening". When the card

Table 1

Number of Subjects Who Gave a Quartet, Card, or Some Other Interpretation to the Message as a Function of the Stress Pattern Heard

	Primary Interpretation		
Stress Pattern	Quartet	Card	Other
Quartet	7	2	1
Card	3	7	0

stress pattern was played there were 7 card interpretations and 3 quartet interpretations. A chi square statistic computed for the quartet and card categories indicated that, as expected, the stress pattern used to present the message biased the subject's interpretation of that message, $X^2(1)=4.377$, $p<.05$.

The subjects were also asked if they were aware of a second interpretation of the passage. Five of the 7 subjects (71%) who interpreted the quartet tape as a musical rehearsal reported that a card interpretation was also possible. Anderson, et al. (1976) noted that the card interpretation predominates when this passage is read by a group of unselected students. In the present study stress patterns determined a subject's primary interpretation of the passage, but when a second interpretation was reported, that interpretation apparently reflected a subject's knowledge structures. Consistent with this interpretation a lower percentage

of subjects reported secondary interpretations when the message was presented using the card stress pattern, i.e., the stress pattern more consistent with the subjects' experiences. Only 3 of the 7 subjects (43%) who interpreted the card tape as an evening of card playing reported another interpretation. One of the subjects suggested that the passage could be viewed as an engagement celebration; the other two offered a "listening to music" interpretation. The latter two perspectives would seem to be more consistent with the personal experiences of an unselected sample of students than a quartet rehearsal would be.

Clearly, stress patterns supplement personal knowledge structures, and together they influence the comprehension of ambiguous discourse. Whether they influence the comprehension of all forms of discourse is an open issue. We have suggested that variations in stress patterns influence the evocation of interpretive schemata which in turn determines comprehension through the matching of information provided by discourse to slots in these abstract knowledge structures. This hypothesis seems to merit further investigation.

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THE ENGLISH LANGUAGE IN NEW BRUNSWICK AND PRINCE EDWARD ISLAND: RESEARCH PUBLISHED, IN PROGRESS, AND REQUIRED.

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Introduction[1]

Its geographical position and its history alike make New Brunswick a rich field for the dialect geographer. Its position makes it the natural trade route between Nova Scotia and upper Canada, and it would be interesting to know what, if any, features of New Brunswick dialect owe their being to Nova Scotia. A herring-choker is often defined as a bluenose who went broke on his way to Toronto: how much support will dialectology lend to this calumny?

On the one hand, New Brunswick's settlement history makes it quite distinct from the neighbouring province of Maine. On the other hand, there is at least one enclave in the province

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[1] This paper was read by A.M. Kinloch, on behalf of both authors, at the inaugural meeting of the Atlantic Provinces Linguistic Association/Association de linguistique des Provinces Atlantiques Mount Saint Vincent University, Halifax, N.S., 29th October, 1977

which housed settlers from Maine (MacNutt 1963:3-4), whose speech ought to provide an interesting contrast to the speech of the rest of the province. Do the descendants of the settlers who moved from Essex County, Me., to Maugerville, N.B., still show any recognizable traces in their speech of their New England origins? At all events, we ought to be trying to find out. Again, how far has there been a rapprochement between the speech of the communities on each side of the Maine/New Brunswick border? (The authors' impression is: Not much. Whatever else may drop off your car as you drive across the bridge from St. Stephen to Calais, it certainly loses its final /r/). The district of New Denmark, in northwestern New Brunswick, was settled a little over a hundred years ago by Danish speakers (New Denmark Women's Institute n.d.:9). How far does the English of the descendants of these settlers differ from that of their fellow New Brunswickers? Finally, there is the French fact in New Brunswick; about one third of the province's inhabitants are Francophone (Statistics Canada 1973:18-1). What effect has this had, what effect is it still having, on the English of those New Brunswickers who live in areas predominantly Francophone?

Prince Edward Island, too, is interesting both geographically and historically. How far has its comparative isolation preserved on the island a dialect more archaic than the English spoken elswhere in Canada? That Prince Edward Island

has a dialect of its own is almost certain; words like ice, nice, fine, and tide, which have /aI/ in the rest of Canada, appear to have /oI/ in Prince Edward Island. Likewise, its settlement pattern includes elements from Ireland and Scotland as well as from England (MacNutt 1965:113 and 236); and Cullen (1971) shows that this settlement pattern has affected the dialect of the island even to this day. In addition to this, Prince Edward Island has a Francophone element in its population (Statistics Canada 1973:18-1), and the relationship between the speech of the Francophone area and that of the rest of the island ought to be examined.

All of these questions ought to be asked, and some attempt should be made to answer them. The attempt should be made in terms of regional variation within the provinces, as well as in terms of differences between the speech of each province as a whole, on the one hand, and the speech of the rest of Canada, on the other.

Research Published

To date, most of the studies of the speech of New Brunswick deal with individual features of the dialect of the province, the use of specific words like pung, bogan, etc. this would matter little, had these articles addressed themselves to the research themes adumbrated above. For various reasons, they have not done so, and they leave our knowledge of the dialect

of New Brunswick still fragmented and unsystematized.[2]

Two major linguistic surveys have been made in New Brunswick. The first is the survey made for the Linguistic Atlas of the United States and Canada; the project is described and the results of the survey are recorded in Kurath, Hansen, Bloch, and Bloch (1939) and in Kurath, Hanley, Bloch, Lowman, and Hansen (1939-1943). These two works answer between 300 and 700 questions about the speech of each of eight communities in New Brunswick. First of all, of course, one should note that, with one exception, all the communities lie to the west of, or on the banks of, the Saint John river; the exception is Lower Southampton, which now lies some 300 feet or so below its surface. There is no record from the capital city of the province, and only one record, with a displaced informant, from the largest city in the province. Also, one should note that the fieldwork for this survey was done in the 30s, and is now over forty years old; a complete generation has had time to reach middle age since the original survey was made. Moreover, the questionnaire for this survey was drawn up on the basis of American English: it takes account of some but not all of the features mentioned in the works listed in footnote 2. Finally,

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[2] Avis and Kinloch (1978) list forty-two such articles, these being their items 004, 028, 040, 055, 056, 071, 075, 126, 129, 177, 178, 195, 196, 233, 270, 287, 288, 290, 291, 326, 335, 363, 386, 389, 398, 416, 424, 427, 445, 447, 454, 455, 456, 538, 561, 569, 583, 616, 635, 646, 654, and 672.

the questionnaire used for the Linguistic Atlas of the United States and Canada, excellent though it be, does not always produce results which are perfectly adapted to phonemicizing. Having tried to phonemicize the results of one interview, one author (Kinloch 1975) found himself dealing not in minimal but in quasi-minimal pairs, some of which were more quasi- than minimal.

The two works cited above, of course, simply publish the data from the Atlas survey. They do not interpret it in any way, save in so far as the use of any standard phonetic alphabet is in itself an interpretation.

The other major project which has been carried out in New Brunswick is the Survey of Canadian English, whose results are recorded in Scargill and Warkentyne (1972) and in Scargill (1974). In contrast to the work done for the Linguistic Atlas of the United States and Canada, the work done for this survey is relatively recent, and is province-wide. But it is not free from disadvanatges. Perhaps its major disadvantage is that by its very nature it took no account of regional variation within the province but concentrated instead upon age-related variations--the generation gap. A very successful attempt to derive intra-province variation from the Survey of Canadian English results was made for British Columbia by Rodman (1974/1975); so far, this had not been done for New Brunswick.

An offshoot of the Survey of Canadian English is the work of Mr. Stanley Bateman, whose M. Ed. thesis (Bateman 1975) compared the Survey of Canadian English results with those

gotten by applying the Survey questionnaire to the speech of 149 students entering the Faculty of Education at the University of New Brunswick. The findings of Bateman's survey differed in eighteen features from the findings of the original Survey of Canadian English, but all eighteen differences could be satisfactorily explained in terms of the extra schooling of the informants of the Bateman survey, and by their desire for "correctness."

To sum up, our knowledge of English in New Brunswick so far consists of coverage of a number of individual features; complete coverage, now forty years old, of the English of eight western communities; the gross provincial figures of the Survey of Canadian English; and Bateman's reapplication of the Survey to one generation of nineteen-year olds. If dialect research has four stages, namely data collection, data transcription, data publication, and data interpretation, then it is plain that only in eight New Brunswick communities has the original Linguistic Atlas of the United States and Canada taken us to stage three, and only with regard to the generation gap has the Survey of Canadian English taken us as far as stage four.

For Prince Edward Island, the picture is much the same, only more so. There are eleven studies each dealing with one or more individual features of the dialect of the island,[3] but

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[3] Avis and Kinloch (op. cit.) items 129, 178, 195, 218, 233, 290, 424, 427, 454, 561, and 646.

only two works (Scargill and Warkentyne 1972, and Scargill 1974) which seek to characterize the dialect of the province as a whole.

To sum up the state of our present knowledge of the dialect of the provinces of New Brunswick and Prince Edward Island, one cannot say that it is exhaustive. It is either sporadic in its coverage, out of date in its provenance, or both, or is not yet processed in enough detail to show regional variation within either province. The raw data collected for the Survey of Canadian English hold promise, but as yet that promise has not been fully exploited; indeed, it has hardly been exploited at all.

Research in Progress

We should start by noting five records made by earlier workers, which represent research in progress in the sense that the projects they were made for have never been published. The five are one from New Brunswick, made by Henry Alexander in the 40s, two made by Alexander in Prince Edward Island in the same period, and two made there by Raven I. McDavid, Jr. and H. Rex Wilson in the 60s. So far as the authors are aware, there are now only four researchers at work on the English of New Brunswick and Prince Edward Island; hopefully, someone will correct us if we are wrong. The four are A.M. Kinloch, S.S. Drew, Miss Debbie Mosher, and A.B. House.

Kinloch has amassed seventeen field records made in communities in the Saint John valley, over a questionnaire based on that of the Linguistic Atlas of the United States and Canada. The eight communities covered in the original Atlas survey have all been revisited but, because of the questionnaire used, some of these revisitings may present the phonemicizer with the kind of intractable data found in the records of the original survey. At the same time, Kinloch has made preparations for assessing the accuracy of the results of the Survey of Canadian English, by having a fieldworker visit each school which took part in the original survey and there do a face-to-face interview with a pupil from the school. This Survey of Canadian English follow-up has produced sixteen tapes, each accompanied by a copy of the questionnaire of the original Survey completed by the informant of the follow-up. So far, these are unanalyzed, and anyone who wishes to analyze them is welcome to use them if he will contact Kinloch at the University of New Brunswick.

S.S. Drew is working in Saint John County, and has made four field records over the Illinois Institute of Technology questionnaire (Davis and Davis 1969), supplemented by some additional questions designed to give even more thorough coverage of the vowel sounds. He has completed his fieldwork, and is now engaged in transcription. Miss Mosher is working on the speech of New Denmark, and has completed her fieldwork; she is planning to transcribe her records as soon as the commitments of her job allow.

A.B. House's work on the English of Francophone New Brunsiwck is in its third year of progress. The goal of the study is to record and transcribe the English spoken by Anglophones in areas of New Brunswick where there is a substantial number of Francophone speakers. The method of the study is to use a conflation of the Linguistic Atlas of the United States and Canada and the Illinois Institute of Technology questionnaires. The geographical area of this project is from the south-east to the north-west of the province of New Brunswick; it includes the towns of Moncton, Shediac, Rexton, Tabusintac, Bathurst, Campbellton, and Edmundston. The informants are drawn from three generations of speakers. So far, it appears that the youngest and the oldest are the easiest to tape. They are accessible. The "mid" informants, probably because they are hard at work, are hard to record. The work done in this study to date consists of one completed and one partially completed interview from Moncton, one partially completed interview from Shediac, one completed and three partially completed interviews from Tabusintac, one completed and one partially completed interview from Bathurst, and a completed interview from Campbellton.

It may be, and the authors hope it is, a sign of their ignorance, that they know of no fieldworker currently at work in Prince Edward Island. However, Professor Terrence Pratt of the University of Prince Edward Island may possibly make a start on the dialectology of the island in the summer of 1978.

Research Required

It seems to the authors that the most urgent tasks in New Brunswick are the completion of the projects now under way; this is all the more true in that Kinloch's first records were made over seven years ago, and the data from the original Survey of Canadian English are becoming steadily more out of date and hence more difficult to validate, although not less valuable, once validated. Further urgency is given to this project by the fact that its success might cast light on the validity of the Survey results elsewhere in Canada. In Prince Edward Island, the basic blueprint is, happily, now in preparation.

Good Queen Bess was no dialectologist. When she wrote "META INCOGNITA" across the map of Canada, she missed the Maritimes entirely. But perhaps, in principle, she had the right idea.

Concluding Note

If anyone is interested in helping with this work, the authors will be only too glad to assist him or her with copies of questionnaires, specimen tapes and (probably) far too much advice. Both authors may be contacted through the University of New Brunswick.

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The Man Gives an Apple to the Lobster: Rule Reordering in Acadian

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1. Introduction

One feature of Acadian French is the pronunciation of words like homme [um] "man", donne [dun] "gives' pomme [pum] "apple" and homard [humɒ:r] "lobster". Thes words all have a mid back rounded vowel in Standard French and a high back rounded vowel in Acadian:

(1)

orthography	Standard French	Acadian French	
homme	[ɔm]	[um]	"man
donne	[dɔn]	[dun]	"gives
pomme	[pɔm]	[pum]	"apple"
homard	[omɑ:r]	[humɒ:r]	"lobster"

Lucci (1972,41) suggests that this [u] pronunciation derives from a phonetic closing influence of a nasal consonant on a preceding vowel. He then concludes that derived forms like pommier [pumje] "apple tree" and donner [dune] "to give" are due to analogical extension of the [u]. This paper will attempt to show that there is no historical basis for Lucci's claim and that an

alternative explanation can account not only for the Acadian data but also for the data of another set of dialects in France. The framework for the argument is supplied by generative phonological theory.

The principal concept underlying generative diachronic studies is that language change is due to changes in the rule system which describes the organization of a language (Halle 1962, King 1969, Kiparsky 1968). Within this conception of language, rules can be added, lost, re-ordered or changed internally.

If the addition of rules to a grammar can account for historical change, and if two such rules are involved, there are five possible categories of results with respect to these rules. The simplest outcome is that neither rule applies and no change occurs. It is also possible that only one of the two rules is incorporated into the grammar. This would have two separate effects: Rule 1 applies but not Rule 2, or Rule 2 applies but not Rule 1. There are similarly two possibilities if both rules apply: either they are ordered so that Rule 1 precedes Rule 2 or so that Rule 2 precedes Rule 1. If the output of one of these rules is affected by the other, then ordering can be a significant factor and will be reflected in the succeeding stages of the language. Such

a theory would predict that there would be dialects reflecting each one of these possibilities. These possibilities are listed in (2).

(2) a) No application--no change

b) Application of Rule # 1 only

c) Application of Rule # 2 only

d) Application of Rule # 1
followed by Rule # 2

e) Application of Rule # 2
followed by Rule # 1

This paper will propose that two rules were added to the grammars of Standard French and Acadian French during the seventeenth century and that the differences shown in the stressed vowels in (1) reflect the two possible orders for these rules. It will also point out evidence illustrating all five possible outcomes listed in (2).

2. Historical Setting

The etymological sources for the words in (1) are shown in (3):

(3) C. L. hŏmĭnem > homme

C. L. dōnāre > donner

C. L. pōma > pomme

O. Scand. humarr > homard

The mid vowels of the modern Standard French examples in (3) have four separate historical sources, namely C. L. / $\breve{o}$, $\acute{o}$, $\bar{o}$/ and Old Scandinavian /u/.

Through a number of changes in Gallo-Romance and Old French the reflexes of C. L. $\acute{o}$ became [ø] and [u] (Pope 1934). This meant that there was no stressed [o] in late Old French. Scribal tradition continued to use "o" to represent [u] until the thirteenth century. At the end of the twelfth century there was a change in the situation when O. F. [ɔ] began to close to [o]. This change rendered orthographic "o" inadequate as a sufficient device to distinguish between [o] and [u]. A new custom of spelling [u] as "ou" was therefore begun early in the thirteenth century (Bourciez 1967, 290; Pope §§ 698). This convention is still followed today.

Apart from this general shift in phonemic structure there were a number of subsequent changes involving the mid back vowels, culminating in the sixteenth century with an additional raise of M. F. closed [o] to [u] in words like arroser "to water, sprinkle", gros "big, fat", chose "thing" and tôt "soon", and so on. There was a great deal of controversy over the social acceptability of these pronunciations during the late sixteenth and seventeenth centuries with the result that

the words lowered to [o]. During the controversy a verb chouser was formed which meant "to pronounce [u]". The verb was derived from the [u] pronunciation of chose "thing" (Poirier 1928,97).

Lucci (1972,41) makes reference to this controversy when he discusses chose and arroser in the Acadian of the Moncton area where they are pronounced [šuz] and [aruze]. He treats the [u] in these words as though it were related to the [u] which occurs before a nasal consonant in homme, pomme and so on. This view is historically inaccurate as the changes in the seventeenth century outlined below point out.

3. The Seventeenth Century Rule Additions

It is well established (Pope 1933 § 461) that [u] before a nasal consonant was nasalized during the sixteenth century. In this connection Palsgrave (1530) wrote:[1]

> If m or n folowe next after o in a frenche word both in one syllable, then shal the o be sounded almost lyke this diphthonge ou and something in the noose: as these words mon . . . shal be sownded moun . . . ; and in lyke wyse shall o be sownded though the next syllable followynge begynne with an other m or n, as in these wordes home, somme, bonne, tonnerre whiche they sound houme, boune, soumme, and tounner.[2] (Pope 1934 § 461)

Bovelles (1533) states,"Dans homme, somme, comme, sonne, tonne, les consonnes que suivent l'o diminuent de moitie le son qui lui est propre, c'est-a-dire lui donne le son nasal". These same ideas are presented by Meigret (1542), Behourt (1620), Wodroephe (1625), Martin (1632), Lonchamps (1637), Duez (1639) and Chifflet (1659). For the sake of convenience we will take Wodroephe (1625) as a fixed chronological point representing this pronunciation:

> O . . . changeth its sound being joynd to m, n or u then the french do sound it as we do double ao (oo) and that generally throughout the whole tongue: as homme, mon . . . comme, somme, vous.

The words in (4) present this pronunciation:

(4)	homme	donne	pomme	homard	pont	bon
1625	[ũmə]	[dũnə]	[pũmə]	[ũmɑr]	[pũ]	[bũ]

During the seventeenth century rules which had the diachronic effect of lowering all [u] to [ɔ̃] were added to the grammar of French. Although the post facto effect was of a single rule lowering [ũ] > [ɔ̃], there seem to have been two stages. The first stage lowered [ũ] before a nasal consonant. This would affect words like homme, donne, pomme, and homard but not pont [pũ] "bridge" and bon [bũ] "good". The first mention of this lowering is in Oudin (1633):

> L'o francais se prononce fort ouvert, contre l'opinion fort impertinente de ceux qui le veulent prononcer comme ou, quand il est devant m ou n; car ceux qui parlent bien ne disent iamais houme, coume, boune, etc. (Thurot II,521)

Oudin's use of the term "fort ouvert" indicates that the change was directly from [u] to [ɔ̃].

The second stage in the lowering applied to [u] not followed by a nasal consonant. D'Allais (1681) indicates that "o devant une m ou une n rendant un son mitoyen entre o et ou pourroit bien constituer une dixième voyelle, exemple: homme, ombre, honte, garçon" (Thurot II,513). It is clear from this that nasalized [u] had by this time also lowered.

For expository purposes we will treat this two stage lowering as a single process and call it Nasal Vowel Lowering. Nasal Vowel Lowering seems to have become fixed very rapidly, for only thirteen years later, in 1694, Dangeau wrote, "Il y a des provinces dans lesqueles on prononce un ou nasal et ou l'on dit boun au lieu de dire bon" (Thurot II,513), indicating that a lowered nasal vowel was already firmly established and that the absence of lowering was a social stigma.

(5) Nasal Vowel Lowering

	homme	donne	pomme	homard	pont	bon
A 1633	[ɔ̃mə]	[dɔ̃nə]	[pɔ̃mə]	*[ɔ̃mɑr]	--	--
B 1681	--	--	--	--	[pɔ̃]	[bɔ̃]

Shortly after the onset of nasal vowel lowering, a second major rule was introduced. This second rule denasalized all [ɔ̃] sounds followed by a nasal consonant. Hindret (1687)(Thurot II,522) provides the first clear statement of the results of this rule when he condemns provicials "who pronounce the first syllable of the words gomme, homme, pomme, bonne like the words pompe, bonté." Dumas (1733) and Antonini (1753)(Thurot II,513) both speak of an [u] pronunciation as being a provincialism. Antonini goes so far as to call it "cette prononciation vicieuse". Féraud (1761) writes: "Autrefois on prononcait en ou l'o devant l'm et l'n suivie d'un e muet; on disoit houme, Roume, liounne. . . . Plusieurs, parmi les vieux surtout, ont conservé cette mauvaise prononciation." (Thurot II,524). This second major rule we will call Denasalization.

(6) Denasalization

	homme	donne	pomme	homard	pont	bon
1687	[ɔmə]	[dɔnə]	[pɔmə]	*[ɔmɑr]	--	--

There are then, two diachronic rules which

changed the pronunciation of homme, pomme and donne from [ũməˌ], [pũmə] and [dũnə] in the beginning of the seventeenth century, to [ɔmə], [pɔmə], [dɔnə] by the end of the century, namely Nasal Vowel Lowering and Denasalization.

These two rules interacted as outlined in (7) to yield the present pronunciations:

(7) Seventeenth-century changes leading to Standard French

	homme	donne	pomme	pont	bon
1625	[ũmə]	[dũnə]	[pũmə]	[pũ]	[bũ]
Nasal Vowel Lowering					
A 1633 (Oudin)	[ɔ̃mə]	[dɔ̃nə]	[pɔ̃mə]	--	--
B 1681 (D'Allais)	--	--	--	[pɔ̃]	[bɔ̃]
Denasalization					
1687 (Hindret)	[ɔmə]	[dɔnə]	[pɔmə]	--	--

4. The Origins of Acadian [u + N]

In one variety of Acadian French the words pont and bon occur as [pa͡w̃] and [ba͡w̃]. Their relationship to sixteenth century [pũ] and [bũ] is not immediately apparent. A comparison of son "his, her" with son "sound" clarifies this relationship. Son "his, her" is not stressed as it always occurs in pre-nominal position and stress occurs only on phrase final words in Acadian (as in

S. F.). This word is always [sɔ̃], with a mid nasal monophthong. Son "sound" on the other hand is a noun and as such occurs in stress position. This dialect of Acadian then must have a rule which diphthongizes stressed [ɔ̃] to [ãw̃]. It is then clear that [paw] and [baw] can be derived diachronically from sixteenth century [pu] and [bu] by a lowering rule and a diphthongizing rule. The same process is possible for comté [kɔ̃te] "county", bonté [bɔ̃te] "goodness" and so on. That is the same nasal vowel lowering rule which applied to seventeenth century "standard" French also applied to Acadian French.

At the same time words like homme, donne, pomme have not participated in the lowering process, although they have oral vowels. It is therefore certain that denasalization applied. If we assume that both lowering and denasalization applied to historical Acadian as they did in Standard French then we cannot account for all the data. If, however, these two rules applied in the opposite order, then we can very nicely derive Acadian:

(8) Seventeenth-century changes leading to Acadian French

	homme	donne	pomme	pont	bon
1625	[ũmə]	[dũnə]	[pũmə]	[pũ]	[bũ]
Denasalization					
	[umə]	[dunə]	[pumə]	--	--

Nasal vowel lowering

-- -- -- [pɔ̃] [bɔ̃]

Diphthongization (date unknown)

-- -- -- [pa͡w̃] [ba͡w̃]

5. The Lobster Problem

This leaves us with Acadian homard [humɒ:r] "lobster" from the original set of words with [u] listed under (1). The first appearance in French texts of the word homard is in 1532, and it is spelled houmar. In 1614 it is spelled houmart by Marc Lescarbot in his Histoire de la Nouvelle France which he wrote after spending a year at Port Royal (today Annapolis Royal, Annapolis County, Nova Scotia). This spelling clearly indicated a high back rounded vowel. Given the facts con cerning nasalization during this time it is reasonable to assume that this vowel was nasalized [ũ].

There is no problem with explaining this word in Acadian; it simply derives from its sixteenth-century form by the usual ordering of denasalization and lowering. In Standard French, however, it has a closed [o] rather than the anticipated open [ɔ] produced by the nasal vowel lowering rule.

In modern Standard French there is a partial alternation between closed [o] and open [ɔ] such that

open [ɔ] never occurs in an open stressed syllable. Morphophonemic alternations like [ɔs] os "bone" ~ [o] os "bones" illustrate this. There is also a tendency for [ɔ] to occur only in closed syllables, although there are exceptions. It is only through appeal to this alternation that any explanation of the [o] of S. F. [oma:r] can be made.

On superficial examination words like zône "zone", aumone "alms", baume "balsam" which all contain [o] could provide evidence that they raised from [ɔ] because of a closing influence of the nasal consonant. However, this explanation would leave hôte "host", vôtre "yours", and rose [ro:z] "pink" unaccounted for. All of these words have etymologies different from those words which had become [u] during Old French. The hôte group closed from [ɔ] to [o] in the Middle French period and were involved in the ouiste controversy of the seventeenth century.

Lucci (1972,41), in a side comment, suggests that the closed [o] of French baume "balsam" is retained because of the influence of the orthography au. Since baume evolved its closed [o] in Middle French we can assume that it maintains this value for whatever reason that [o] is maintained in vôtre, hôte, rose and so on.

These words have historically had [o] since the sixteenth century and although it would be descriptively convenient for them to open to [ɔ], so that we could show a nice alternation of [o] in open syllables and [ɔ] in closed syllables, it seems that they have no intention of so changing. Furthermore it is not consistent on the part of Lucci to attribute the [u] in Acadian homme [um] to the phonetic closing influence of N and to say that the [o] of baume is closed in S. F. because of the orthography. This inconsistency is accented by the [o] of Acadian embaumer [ãbome] "to embalm", the only spontaneous form I was able to elicit, where the [o] occurs in an open syllable.

6. Conclusion

It is evident in all of the above discussion that seventeenth-century nasal vowel lowering applied only to nasalized [ũ] and that words like chose (chouse) with oral [u] were unaffected by it. The preservation of historical [u] in nous, vous, touche, louve, bouge and so on indicates that the ouiste controversy of the seventeenth century affected only words which were raised by a recent raising rule which Bèze (1584) indicates may have originated in Bourges or Lyon (Thurot I,240). If this is the case, then it is possible that the raising rule

may have been adopted into proto-Acadian, and that without a firm central literary influence subsequent to its adoption, it was retained. If this is so, then the fact that Acadian has both homme [um] and chose [šuz] is accidental: the result of two separate phonema and is not due to some common phonetic closing influence of [m] and [z]. In addition if we were to accept that Acadian [u + N] were the result of a phonetic closing influence of nasal consonants we would be very hard put to explain how seventeenth-century vowel lowering (opening) could happen when it would be in direct violation of the closing principle.

In addition, Lucci's conjecture that the high vowel of pommier [pumje] "apple tree", and donner [dune] "to give" is the result of analogical extension from [pum] and [dun] is unnecessary. A theory of language change which incorporates rules like those proposed above obviates the need for ad hoc conjecture of this sort.

In the introduction to this question of rule governed language change it was pointed out that the theory had the power to predict five possible outcomes with respect to any two rules. The following data are drawn from the Atlas Linguistique de la France and illustrate these five possibilities as they relate to Nasal

Vowel Lowering and Denasalization.

(9) Possible outcomes of Nasal Vowel Lowering and Denasalization

a) No application--no change

ALF Map #	Item	Location	Form
243	charogne	509	[šarũñ]
1056	pomme	533	[pũm]
1059	pondre	611	[pũnə]

b) Nasal lowering only (difficult to be certain)

147	bon/bonne	445	[bõ/bõn]

c) Denasalization only

147	bon/bonne	614,624	[bũ/bun]

d) Rules ordered # 1 - Nasal vowel lowering
2 - Denasalization } S. F.

[bɔ̃/bɔn]

e) Rules ordered # 2 - Denasalization
1 - Nasal vowel lowering } A. F.

[bə̃w̃/bun]

147	bon/bonne	504	[bõ/bun]
147	bon/bonne	409	[bõ/bun]

A descriptive device which can account for such a wide variety of data in such a straightforward fashion ought to be highly valued.

Footnotes

[1]References to sixteenth, seventeenth and eighteenth century works are taken either from Pope (1933) or Thurot (1881).

[2]For another interpretation of this quote see Rochet (1976:109).

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Neurophysiological instrumentation for studying speech and language performance

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Introduction

Many researchers and investigators interested in language have turned to linguistic theory in the hopes of finding a better theoretical basis for the study of normal and deviant language. In return, many of these researchers brought to the field of linguistic study different backgrounds and methodological expertise. In this article I will describe and discuss the potential usefulness of a relatively new technique for monitoring various waveforms of cortical activity that can be associated with specific aspects of speech and language performance. This technique has many names but essentially involves averaging a specific portion of the brain's EEG activity that occurs after the onset of a specified stimulus. The general name for this technique is Averaged Electroencephalic Response Technique or more universally known as the AER technique. This technique can utilize visual, somatosensory, or auditory signals as stimuli and the resulting AERs, while similar, display different wave forms. For my purpose in studying aspects of speech and language performance, auditory stimuli were best suited.

The AER Technique

Before discussing my particular use of the AER technique for studying speech and language performance I would like to briefly describe the technique itself. The

Averaged Electroencephalic Response (AER) to auditory stimuli is reflected in both latency and amplitude changes in the ongoing EEG activity that occurs in the brain's response to the stimuli. These changes in activity are normally too small to be seen in the on-going EEG, so to compensate for this low signal amplitude, a number of cortical brain wave samples, time locked to the stimuli are gathered and stored in a computer or a signal averager. These responses are all similar in that they are EEG activity triggered by the onset of the auditory stimuli. The resulting signal averaging allows one to observe if there was a specific neural response to the auditory signal or not. If the auditory signal is received by the brain, a particular kind of waveform will form. Averaging a number of these auditory stimulus presentations will clarify the response because the accompanying non-related cortical activity will be algebraically summed out. That is, these uninvolved portions of neural activity will be random relative to the specific auditory signal and thus cancel each other out.

Differences in AER Wave Components

There are actually four different sets of wave responses that can be generated to auditory stimuli. Each separate wave form reflects activity of different parts of the auditory pathway; each wave form has different latencies and amplitudes of response, each has different uses in studying auditory processing in general and language and speech

particular. (See Picton and Hink, 1974, for more information on evoked potentials).

The four separate wave components are as follows:

1. The early components - these responses occur between the first and tenth millisecond after the onset of the auditory signal. These waves actually reflect the transmission of the beginnings of the auditory stimuli up the brainstem portion of the auditory pathway. At present they have little demonstrated use in language or speech performance paradigms but have tremendous potential for the testing of hearing levels of hard to test subjects, particularly newborns and young infants.
2. The middle components - these waveforms occur between ten and sixty milliseconds after the stimulus onset and reflect neural activity around the level of the thalamus and initial arrival of the auditory stimuli at the level of the primary auditory cortex in the temporal lobe. These waveforms are useful in testing hearing in subjects who are otherwise hard to test by normal behavioral means, i.e., the very young, the infirm or aged, the mentally retarded. So far, no one has explored these waveforms in terms of language performance, but there does seem to be some potential for certain speech perception paradigms.

3. The late components - these waveforms occur between sixty and three hundred milliseconds after the onset of the auditory stimuli. They reflect activity generated at the level of the cortex and are thought to come from the association areas of the temporal and partial lobes of the cortex. It is this waveform that I will be talking about in more detail later in this paper.
4. The contingent negative variation or CNV waveform occurs sometime after 500 milleseconds after the stimulus onset and is very effective in demonstrating attention and emotional states of the brain.

All in all, there are some 15 to 17 different wave peaks that are available to use, some more stable than others; each reflecting different aspects of neural or cortical activity in response to the auditory stimuli. While much is not yet known about these waveforms, it is important to note that these waveforms do vary systematically with changes in:

1. the stimulus itself
2. the response requirements of the experimental paradigm
3. changes in intensity or interstimulus interval of the signals
4. the presence or absence of expected signals.

One might ask, at this point, why should one try to use such a technique in the study of language. I offer the following reasons for my choice of the method:

1. The AER technique can largely by-pass skeletal (voluntary) motor output and, in this sense, is "culture-fair" and not under conscious control of the subject.
2. AER technique can provide convergent data with respect to other more conventional measures such as reaction time, sentence repetition or word recognition tasks.
3. The AER itself is a more immediate response (within the first 500 msecs after the stimuli) and may better reflect the immediate substraits of performance than the actual behavioral responses can.
4. The AER appears reasonably sensitive to gross differences in lateralized cerebral functioning.
5. The AER does not require a motor response and thereby can be useful with patients who cannot or will not response behaviorly.
6. Precise measurement can be made with respect to latency and amplitude of specified portions of the waveform.
7. Most important of all - while being a bit uncomfortable, the AER technique does not involve

personal danger or a health hazard.

Review of Relative AER Research Relating to Cerebral Processing

In the last ten years the AER technique, utilizing the late components primarily, has been utilized as a means of assessing more complex aspects of cerebral processing. Greenberg and Graham (1970) found that the AER amplitude decreased in the left hemisphere during repeated presentations in a paired-associate consonant-vowel syllable learning paradigm, while the amplitude in the right hemisphere, initially relatively small, remained unchanged. Cohn (1971) compared AER's to clicks with AERs to monosyllabic words. He found distinctive wave forms in the right hemisphere in response to click stimuli that were not present after presentation of the monosyllabic words, as well as larger left hemisphere AERs to monosyllabic words. Morrell and Salamy (1971) noted that the N_1 peak of the left hemisphere AERs was greater than the same peak of the right hemisphere when nonsense syllables were the stimuli, while Wood, Goff and Day (1971) reported a significantly larger left-hemisphere AER for a phonetic judgement task but not for a pitch judgement task. As part of a larger study, Matsumiya et al (1971) found larger left hemisphere AERs when their subjects used verbal mediation to accomplish the experimental task. Ruhm (1971), like Cohn (1971), found larger right-hemisphere AERs when clicks were used as acoustic stimuli.

In summary then, those studies that used verbal stimuli to elicit AERs found greater left hemisphere activity while those studies that used nonverbal stimuli found larger right hemisphere AERs. Thus, the AER technique was found to be responsive to verbal stimuli and potentially useful as a tool for the study of speech and language processing.

As was stated earlier, the AER wave forms that I have been using are the late components, primarily the N_1-P_2 portion. I have used these particular wave forms for the following reasons: The N_1-P_2 complex

1. is one of the larger and more easily describable portions of the AER with a long history of past research utilizing this wave form (see studies reviewed above).
2. is known to arise from the cortex proper and not from lower portions of the auditory pathway such as the brainstem.
3. has already been found to reveal differences in hemispheric response patterns and is capable of revealing differences in stimuli or response requirements used.
4. is not under voluntary control of subjects that is quick enough to give excellent indications of response patterns in subjects prior to any motor response accompanying the tasks.
5. is a more stable, less variable, waveform between subjects in any experiment.

AER Use In Speech And Language Performance Paradigms

My initial research in this area began back in 1968. In those first studies (Seitz 1972, Seitz and Weber 1972) I used the AER technique as a monitor of the EEG activity of 24 subjects whose task it was to locate a click superimposed on sentences (Fodor and Bever, 1965) but using two different response methods: (i) writing out the complete sentence first and then marking the location of the perceived click, (ii) marking the location of the perceived click on typed scripts of the stimulus sentences. The clicks themselves were located either before the major costituent break (MCB) in the MCB or after the MCB in all the sentences. All subjects heard the same stimulus tapes and only the response requirements differed.

In the initial studies, equipment limitations permitted the monitoring of only one hemisphere, so the hemisphere contralateral to the ear receiving the click was monitored on the theory that the contralateral pathways were primary in man. Separate AERs were obtained for each click location i.e., 1 AER for before break clicks, 1 AER for in break clicks, and 1 AER for after break clicks.

I hypothesized that if the clicks were treated as part of the overall linguistic process in the write-out group, then the latency to N_1 would be shorter and the amplitude larger in the left hemisphere than in the right hemisphere. The results confirmed this hypothesis. The left hemisphere AERs as a group were significantly shorter in latency and

larger in amplitude than the right hemisphere response. Thus this study confirmed systematically different hemispheric activity in syntactic processing.

However, this initial study had one weakness. Owing to limitations of equipment available, only responses in the hemisphere contralateral to the click were monitored since this hemisphere is believed to be the primary projection area of the auditory cortex (Kimura, 1967). To correct this obvious weakness a new study was designed to replicate the initial results (Seitz, 1976), this time monitoring both hemispheres and adding a control condition in which the click was presented in isolation as well as in the linguistic paradigm.

The equipment for this experiment was similar to the first but now two EEG channels were recorded and all analysis was done off line.

The results of the second experiment confirmed the initial finding that linguistic constraints can be reflected in differences in AERs. However in the second experiment, a more controlled and better equipped one, the significant left hemisphere response to clicks occurred only for the write-out group and not the marking group. In addition analysis of hemispheric response patterns to the clicks revealed a significant advantage for the contralateral

pathways over the ipsilateral pathways in terms of latency of response but not amplitude (Mononen and Seitz, 1977). These two studies thus help confirm that AERs can reflect changes in response requirements and can be used to measure different language processing activity occurring under different psychological response requirements.

The next experiment utilizing the AER technique that I wish to discuss is one that I did with a number of colleagues and concerns the question of language processing activity in bilinguals (Genesee et al, 1978).

As I have indicated earlier, a wide variety of evidence indicates that the left hemisphere in man is "dominant" for language. This evidence, however, is based on persons possessing one language. The Genesee et al (1978) research project investigated the language processing of bilinguals by studying their patterns of neural activity when processing verbal material presented in each of their two languages, French and English.

Eighteen adults, equally fluent in English and French, participated in this language recognition experiment. Subjects were placed in subgroups on the basis of when they had acquired their second language. One group (infant bilinguals) learned both languages from infancy, a second group (childhood bilinguals) acquired skill in the second language at approximately 5 years of age, and a third group

(adolescent bilinguals) became bilingual at the high school age level.

The AER equipment set up was basically the same as in the previously discussed studies except that a reaction time (RT) condition was added as a behavioural measurement along with the AERs. Thus, both a neurophysiological measurement (the AER) and a behavioural measurement (the RT condition) were utilized in this study.

Subjects were required to press a RT key to indicate whether each word, presented through earphones, was English or French. While performing that task, their left and right hemisphere EEG activity was monitored and recorded via surface electrodes to provide AER (average electroencephalic response) comparisons of the language processing activity of the two hemispheres when French and English words were presented.

The results indicated that bilinguals, as a group, demonstrated the expected characteristic pattern of neural organization for language: the left hemisphere AERs were significantly faster than those of the right hemisphere for both French and English words. This left hemisphere advantage in N_1 latency, however, was limited to those who had been infant or childhood bilinguals. Adolescent bilinguals demonstrated a faster <u>right</u> hemisphere response to both French and English words under the same test conditions. Furthermore, the adolescent bilinguals had generally faster cortical response to N_2 than the other two

groups.

Since all Ss were required to meet strict criteria for equivalence of fluency in the two languages, these results could not be explained in terms of differential language skill. Implications of the results for language processing in bilinguals are discussed in our paper which is published in Brain and Lanugage (1978).

Thus far, I have demonstrated how the AER technique can be used to study various aspects of speech and language performance. With minor modifications the technique can be adapted to measure motor speech activity itself.

A Ph.D. student of mine, Ms. Rosalee Shenker, and I are doing just that with groups of normal speakers and stutterers. In this paridigm we have the subjects read single words beginning with the same phonemes (the stop-plosive set) and record their utterances and concurrent EEG activity. Later we go back and average all words beginning with /p/, /b/, /t/, etc., by looking at a time base and one second prior to speech onset and one second after speech onset.

While the data analysis for Ms. Shenker's study is not yet complete, I can tell you that AER technique did work and provided a method for viewing cortical activity prior to speech activity as well as during speaking itself.

At present, a group of us at Dalhousie University have begun to explore other wave component response as well as the late components. We have a number of studies under way

in our lab; the most noteworthy is the multiple use of various AER wave forms in the study of auditory processing in a group of dyslexic children. Past experience has indicated the appropriateness of the AER technique for such studies. However, future data analysis will determine its usefulness in such studies.

Conclusion and Limitations of the AER Technique

I hope these example uses of the AER technique have demonstrated the potential of the technique in future speech and language studies. However, I feel that I would be remiss in my discussion if I did not also list some of the drawbacks of the technique as well:

1. The basic drawback is that the AER reflects most stably activity occurring around 100 to 300 msecs. after the onset of the stimulus. Thus this technique really is not able to respond to complete individual words within sentences because it is too quick a response.
2. The technique requires that a sufficient number of trials of a very similar nature be available in the experiment to provide the necessary sample size needed for the averaging aspect to work effectively. This would mean one would need around ten to thirty repetitions to obtain good signal averaging benefits. Often this restriction limits the type

of stimuli to be used.

3. The cost of such equipment runs from $16,000. to the $20,000. plus price range. Either one must have a very rich uncle, understanding university or department, or a very well written grant to provide this equipment.

In closing, I would like to emphasize that the major limitation of the technique lies not in the instrumentation itself, but rather in the knowledge, ability, and creativity of its users. Therein lies the limitation of my own research.

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