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LISTENING : A REPORT

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by

Adrian Brian Benson

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ABSTRACT

The concept of listening has been examined and the reasons for an emergence of interest have been reported.

Commentaries and relevant research have been presented in relation to listening tests, relationships to listening, listening skills, processing auditory information, and teaching listening. Implications from these discussions were considered in relation to teaching practices and further research.

Particular attention has been drawn to the lack of integration within the field and weak theoretical base for much of the research.

Discussion has highlighted an over concern of researchers in relating listening and reading to the neglect of establishing relationships between listening and speaking.

The narrow perspective reflected in tests of listening has been criticised. Suggestions have been offered to widen the perspective of listening to incorporate common communication events and their personal, contextual and linguistic features.

It was considered that there has been insufficient proof of the long term effects of instruction in listening, and that the learning conditions and consequent programmes were not sufficiently well specified and developed to offer clear guidelines to practising teachers.

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TABLE OF CONTENTS

INTRODUCTION.....	1
PERSPECTIVE.....	2
LISTENING AS A CONSTRUCT	7
Differentiating Characteristics	8
An Integrative Framework	10
TOWARDS A DEFINITION OF LISTENING	13
TESTING LISTENING ABILITY	14
Test Selection	18
Using Listening Tests	20
RELATIONSHIPS TO LISTENING	21
Intelligence	21
Reading	23
Speaking	26
Personality	26
Characteristics of the Speaker	28
Rate of Speech	30
Age	32
Sex	33
Socio-economic/Cultural Status	33
Foreign Language Learning	34
Vocabulary	35
Scholastic Achievements	35
Music	35
PROCESSING AUDITORY INFORMATION	37
Introduction	37
A Conceptual Framework	37
Attention	39
Attention and Language Impairment	45
Modality Studies	46
LISTENING SKILLS	50
TEACHING LISTENING	58
Identification of Listening Difficulties in New Zealand	59
Teaching Practices.....	62
Selected References for Listening Programmes	65
FUTURE RESEARCH	66
CONCLUDING STATEMENT	68
REFERENCES	70
ADDITIONAL REFERENCES	80

INTRODUCTION:

Teachers in New Zealand have been somewhat surprised, in recent years, at the suggestion that listening was one of the language arts and could be taught. The issuing of a listening comprehension test by the N.Z.C.E.R. in 1970 increased the momentum and confusion amongst teachers and has led to some re-thinking of language programmes in classrooms and Teachers' Colleges. To date there has been very little guidance given to teachers in assisting them to develop listening programmes or identify listening weaknesses. It is perhaps difficult to relate identifying the rustle of paper under a desk with the format of listening comprehension tests and a television performance by a well known politician; yet these are all listening situations. In an environment conscious world both noise pollution and communication have become major themes, yet teaching practices do not yet reflect a major concern with listening.

This assumed confusion observed among teachers is a reasonable reflection of the activities of researchers in the field. It is the purpose of this report to draw attention to research difficulties in this growing field and to this end there has been a comprehensive survey of related literature. Some directions for future research are given together with a few practical suggestions that emerge from the content of the report.

PERSPECTIVE:

The initial interest in listening occurred when Rankin (1926) presented his findings of the amount of 'communication time' spent in listening. He found that his adult sample divided their time as 30 per cent speaking, 16 per cent reading, 9 per cent writing and 45 per cent listening. Bird (1953) surveyed college students and reported time spent as 25 per cent speaking, 15 per cent reading, 18 per cent writing and 42 per cent listening. How listening and taking notes were separated is not clear. Wilt (1950) examined classroom time of primary children of all grades and estimated that they were listening for 57 per cent of the time. Markgraf (1957) estimated high school students' listening time to be 46 per cent, and of this time 66 per cent was spent listening to teachers. These somewhat gross observations have been sufficient to confirm the intuitive guess that people listen more than they speak, and do both more than read or write.

A somewhat different approach was employed by Flanders (1965)* in comparing Standard 4 New Zealand pupils with Minnesota children in elementary and high schools. He found that of the time allocated to talking a New Zealand teacher used 83 per cent, a Minnesota elementary teacher 59 per cent, and a Minnesota high school teacher 62 per cent.

Another approach aimed at establishing the importance of listening has been for investigators to comment on the efficiency of listeners in terms of the total comprehension of a spoken passage.

"Students listening to lectures have been found to comprehend half or less than half the basic matter" (Wilkinson & Stratta, 1972, p.3).

In discussing some explanations for this lack of comprehension Wilkinson & Stratta raise several key concepts involved in listening - attention, background experience, the nature of the material to be listened to, the active participation of the listener, the listening context, and retention of the material. These points are included in the following discussion.

*Figures first published National Education, 1 June, 1960.

"Of course some lectures are so long, so indescribably boring, so unrelated to the listener's frame of reference, that it is necessary in sheer self defence to turn away into daydreams of money, sex or power. But the passive role required of the listener is also to blame. It seems that one of the situations in which we listen best is when we have to do something immediately with the information we receive. For instance we may have to remember it and act upon it, as in following out sheer directions. Or we may have to reply to it, as in a conversation. To keep saying 'You what' or 'I didn't er quite er understand' on such an occasion smacks of idiocy. Our attention is limited, it comes in bursts, not continually: in conversation it is constantly stimulated. In listening to longer utterances the attention holds longer for say narrative than exposition. This has implications for teaching by lecture. Certainly one should be able to follow a continuous exposition for a reasonable period from a lecturer or teacher immediately present, or on radio or television. We are not arguing for the abolition of all lectures; only for the abolition of long, bad lectures." (ibid, p.3).

A major factorial study usually quoted in the literature that identifies listening as a separate factor was undertaken in a thorough investigation by Spearritt (1962).

"A battery of 34 tests was prepared comprising nine experimental tests of listening comprehension, all of which were either specially constructed or modified for the investigation. They included a number of reading comprehension tests presented in listening form, a modified version of the S.T.B.P. Listening Comprehension test, a test designed to measure comprehension of the poorly organized spontaneous speech which is characteristic of many conversational situations, and three tests based on short talks of about six or seven minutes." (Spearritt, 1962, pp.89-91).

Other tests were given together with an assessment of attainments. A definite listening comprehension factor, was identified in the first order domain, but there was some relationship on test performances to tests of inductive reasoning, verbal comprehension and certain types of memory tests.

With this information as background it is productive to look at teachers and language textbooks to see if the time taken up by listening is matched in importance by authors.

Wilt (1950) found that only 16 per cent of teachers ranked listening as the most important language art, while many registered surprise at the mention of listening and the possibility of teaching listening. An examination of 54 language textbooks from grades 3 to 6 was undertaken by Brown, K.L. (1967). He found that speech and listening had the least amount of space, and that of the content of listening sections, teaching listening directly ranked highest in allotted space.

The call to elevate the status of listening has been repeated with growing impetus in the last 20 years, Brown, J.I. (1949), Dixon, (1964), Duker, (1969), Wilkinson, (1970), Devine, (1967), Taylor, (1964), Landry, (1969), Burns, (1961). In general the writers quote studies of the time spent listening and take the view that (a) there is a separate ability named listening, (b) people listen inefficiently, (c) listening ability can be improved by teaching, (d) listening ability can be tested, and (e) there are a set of listening skills comparable to those of reading.

Language textbooks write of four areas of concern - speaking and writing as expressive language areas, and reading and listening as receptive language areas. Of the four, listening has had the least attention, probably because the other three areas more easily produce measurable behaviour. Listening has not been entirely forgotten, but in research it tends to be strongly linked with reading. While one accepts a degree of relationship among the language areas, linking listening to reading has often confused the examination of listening as a separate area with its own characteristics. In addition listening is the only language area where confirmation that listening has occurred depends on a written, spoken, or reading response, or a combination of these. Non-verbal responses can also confirm listening, but this area has not been a particular concern of researchers to date. Because listening has been checked predominantly by reference to the other language areas, a separate identity for the construct listening may be called into question.

Reviewers and educators concerned about listening are continually optimistic that measurement tools and teaching practices will be refined sufficiently to counter this argument.

The increasing emphasis on listening in the last twenty-five years has produced a mass of research articles, reviews on the literature, and tests of listening, but little organisation of the information available into theory. It is not the function of this report to develop a theory of listening, but to comment on the field as it presently stands. The emergence of a theory of listening is in part dependent on the development of a general theory of language. Herriot (1970) states that "there is no systematised formulation of a theory of verbal behaviour as a whole. On the contrary, theory has grown around areas of research which each generate their particular problems. As a result, separate bodies of theory have grown up which try to accommodate to and assimilate new findings within particular areas. These efforts at accommodation and assimilation appear to be in the main unsuccessful." (ibid, p.158).

Russell (1964) lists as implications of past research findings: (1) A theory of listening is needed. Research is required to explore further the nature and development of listening abilities and to apply these findings to structure and sequence in the language arts; (2) Analytical studies should be made of listening situations and ingenious tests should be devised to improve current scattered measures; (3) Teaching methods and materials should be developed; (4) The problem of interrelationships between listening and other verbal skills should be investigated further; (5) Early attention should be given to listening ability in the school; and (6) The findings of a number of research studies should be analyzed and collated in order to assemble useful ways of teaching and testing listening.

In reviewing research Devine (1967) similarly comments that "research in listening has been extensive, though generally atomistic, unco-ordinated, and repetitive", (ibid p.152).

He re-affirms many points made by Russell that more studies are needed of (a) critical listening, (b) the relationship between specific listening and reading abilities, (c) ways of exploiting possible relationships for teaching purposes, (d) teaching techniques and materials, (e) personality factors which may influence listening, (f) ways in which listening instruction affects behaviour, and (g) measuring devices in listening. Furthermore he sees a productive area emerging by examining listening research in relation to linguistic research in terms of regional dialects, cultural-social levels, syntax, and transformational grammar. Devine concludes his review with the comment that "recent studies have contributed much toward an evolving theory of listening, but many questions remain unanswered. Indeed, certain significant questions about listening may still remain to be asked." (ibid p.157). With the general lack of precision of listening research a closer assimilation towards psycholinguistics may produce a set of questions for which answers may be forthcoming.

LISTENING AS A CONSTRUCT:

If the term "reading" did not exist the literature would refer to "comprehending seen words", "looking with understanding at written language", and the like. Similar unprecise locutions for listening are likely to be "comprehending heard words" and "inclining the ears cognitively."

A distinction is drawn by some authorities between listening to linguistic material and to other sounds. The term "auding" was proposed for the former process, (D.Brown, 1954), but this suggestion has not been widely accepted.

Taylor (1964) presented a model which separated listening from auding and hearing even though the total act of receiving auditory communication is referred to as listening. For Taylor hearing is the process by which speech sounds in the form of sound waves are received and modified by the ear. Listening refers to the process of becoming aware of sound sequences through auditory analysis, mental reorganisation, and/or association of meaning. Auding refers to the process by which the continuous flow of words is translated into meaning by indexing, making comparisons, noting sequence, forming sensory impressions, and appreciating. Discreteness is not intended by the model as he suggests that these factors act in combination for any listening act (ibid. p.6). The lack of precision in terminology continues as the ideas are developed. There is a heavy reliance on what it is suggested occurs in reading. In addition there is the assumption of an isomorphic relationship between what needs to occur logically from the stimulus input and what occurs internally with the processing of information. This model, apart from minor variations, tends to be the one employed by American researchers.

Workers at the Oracy Research Unit at Birmingham University work from a situational model which includes the behaviour and intentions of the Addressor and Addressee together with linguistic and non-linguistic features of how communication occurs. They attempt to answer the questions: who, what, whom, how, why, and on what occasion, in order to identify various aspects of communication.

There is a close link with oral expression rather than reading in this approach. A general plea is made for less literary testing and teaching and more analysis of 'live' listening or communication situations, (Wilkinson, 1971). This approach is further elaborated throughout this report.

The usual semantic argument, from which there is no great increase in the clarification of terms used, is typified as follows:

"An important distinction must be drawn between hearing and listening. Just as seeing is essential to, but not the same as reading, so hearing is a pre-requisite of listening but not an equivalent. Listening and reading both involve comprehension, interpretation and evaluation, which hearing and seeing do not. A generally accepted factor in reading readiness is auditory discrimination. This is skill in hearing, not in listening. Studies of auditory discrimination, important as they are, must not, therefore, be confused with studies of listening." (Duker, 1965, p.321).

The general agreement that does exist about listening presents the gaining of meaning from spoken verbal material as the central issue. Consequently the term listening comprehension is usually preferred because it is easily understood and parallels reading comprehension. With the close similarity of reading and listening tests this emphasis on the cognitive levels of functioning is understandable, but it may be questioned for its validity. If one accepts that the processing of spoken verbal stimuli begins when the ear transmits impulses, then more factors that affect listening may need to be taken into account than those nominally labelled cognitive. Indeed there is a mass of research under the guise of listening that is predominantly concerned with auditory perception suggesting confusion of definition among the researchers. The standardised listening tests available certainly reflect a cognitive emphasis yet the research has demonstrated a greater diversity of interest.

Differentiating Characteristics:

Listening appears to have characteristics that differentiate it from the other language areas.

It has already been mentioned that listening as a part of language reception can at present be checked only by reference to the other language abilities.

On most listening occasions the message is only presented once although there can be opportunities to check understanding. The listener has little control over the speed at which the oral message is being delivered. The listening context provides variable additional stimulation, both of a visual and auditory nature, only some of which may be pertinent to the message.

Educational Psychologists have ample behaviour in speaking and writing to be reasonably objective in their research. Increasingly reading behaviours are being systematically measured. Listening behaviours are but poorly represented in objective research except in general terms. With listening, the concern has usually been with describing the internal mediating processing with psychological constructs and matching these with a logical analysis of the characteristics of language.

A further differentiating feature of listening revolves around the learning increments that occur, maturational characteristics and teaching in the language areas. It seems reasonable to suggest that reading, a receptive language ability, and writing, an expressive language ability, do not occur without teaching. Vocalisations and some communication occurs early in life and without teaching, but a common spoken language requires both consistent modelling opportunities and teaching. The maturational requirements for emerging competence in reading and writing are well documented, as they are to a lesser extent for speaking. The maturational characteristics of listening are less clear and the development of listening ability is poorly documented.

While the mere exposure to many and varied sounds does not ensure adequate listening development, unless a person is deaf, listening seems unavoidable (Oakland, 1971). Although the level of understanding involved will of course vary considerably. Auditory information will be received and internally processed, and, without teaching, learning increments will occur.

If researchers adopted a developmental approach, the shift of emphasis towards identifying obstacles to listening development and performance may be profitable.

A further feature of receptive language emerges in relation to spoken language. Although children can initiate spoken language, there are times that they appear to say things with little understanding. In general children are able to understand what is said to them much better than they can express what they understand to others.

These differentiating characteristics emerge as a consequence of various approaches to listening. These approaches are reported elsewhere (Lundsteen, 1971). Some clarity and integration is lost when writers develop ideas in one direction. For example, classifying listening with reading as a receptive language ability neglects the relationships between listening, speaking and general motor activity. While the isolation of differentiating characteristics supports the idea of a separate listening construct, research designs and teaching practices are more integrative. Attempts at separating and isolating behaviours and processes have often failed to account for the functional autonomy of the whole organism.

An Integrative Framework:

To some extent the difficulties of conceptualizing listening can be overcome by offering sequential levels of listening as explanation which require increasingly complex abilities. Wilt (1964) presents the following sequence:

1. auditory perception of non-language sounds
2. auditory perception and discrimination of isolated single language sounds
3. understanding of words and concepts, and building of a listening vocabulary
4. understanding sentences and other linguistic elements of language
5. auditory memory
6. auditing or listening comprehension:
 - (a) following directions
 - (b) understanding a sequence of events through listening
 - (c) recalling details
 - (d) getting the main idea
 - (e) making inferences and drawing conclusions
 - (f) critical listening

The above sequence, apart from showing some resemblance to developmental aspects of language and intelligence, appears to be the usual basis on which teaching suggestions by American researchers are made.

Lundsteen (1971) in an effort to classify the ambiguity attached to the label listening, presents the concept in the light of the usual approaches to definition: (1) comparative, (2) ostensive, (3) classificational, (4) structural, (5) operational.

- (1) The comparative approach discusses what listening is like. This approach highlights the relationships of listening to the other language areas - reading, speaking and writing.
- (2) The ostensive approach discusses and lists the attributes of listening and their interaction.
- (3) The approach by classification combines the comparative and attribute approaches to place listening within a classification scheme, thus further highlighting the relationships of listening to other subclasses of communication.
- (4) A structural approach attempts to identify the parts of listening:
 - (a) previous knowledge (antecedent conditions), (b) material to be listened to (stimulus), (c) physiological activity of the listener, (d) attention or concentration, (e) highly conscious intellectual activity at the time of listening and beyond listening.

This approach usually concludes that there appear to be levels of intellectual activity and levels of purposes while listening. These levels go beyond listening for simple sounds, syntax, and semantics of a phrase, sentence, or paragraph to complete units of discourse.
- (5) The operational approach attempts to describe what happens when listeners listen. Lundsteen presents a flow chart as a tentative framework to describe what a listener does as he moves from verbal sound to meaning to intellectual activity, leading hopefully and ultimately to creative ...

problem solving. There are three main parts to her model: responding and organizing, getting meaning, and thinking beyond listening.

The ten suggested steps are labelled: (1) hear, (2) hold in memory, (3) attend, (4) form images, (5) search store, (6) compare, (7) test cues, (8) recode, (9) get meaning, and (10) intellectualize. The parts and steps overlap in many cases.

This final approach closely follows the neuro-physiological activity described elsewhere in this report by Berry (1969).

TOWARDS A DEFINITION OF LISTENING:

It appears from the above discussion that agreement on a suitable definition is far from assured. The dismissal of the perceptual basis of listening is not credible when the initial stages of processing and gaining meaning are usually considered pre-requisites for activating higher mental processes.

Concentrating on higher mental processes often confuses listening with other constructs of general intelligence and general verbal ability.

If listening has value as a construct it must be able to accommodate to and provide procedures for the specific identification of a listener's weaknesses as well as indicate a sequence of learning that follows from such an identification.

The value of the listening construct to education will improve when it is incorporated into a general theory of language, and when the current descriptive approaches incorporate greater explanation and prediction. At the present time there is only agreement on a general process definition which refers to the gaining of meaning from spoken language.

TESTING LISTENING ABILITY:

The activities used in testing listening in general appear to vary with the age of the subject. When spoken language has been achieved children tend to be tested for ability to discriminate auditory input, re-call number series, and follow verbal directions. When reading and writing skills have been achieved children tend to be tested on their ability to indicate a level of competence in skills similar to those of reading, based on a distinction between receptive and reflective listening:

receptive skills: skills primarily associated with accuracy in listening:

- "(a) ability to keep related details in mind
- (b) ability to observe a single detail
- (c) ability to remember a series of details
- (d) ability to follow oral directions

reflective skills:

- (a) ability to use contextual clues
 - (b) ability to recognize organizational elements
 - (c) ability to select main ideas as opposed to subordinate ideas and details
 - (d) ability to recognize the relationship between main ideas and subordinate ideas that support them
 - (e) ability to draw justifiable inferences."
- (Wilkinson, 1970, p.141).

With adolescents these reading type skills are included along with other skills involving critical appraisal, such as separating fact from opinion, evaluating arguments and propoganda, and detecting a speaker's purpose.

It should be noted that no research on young children has been found in the literature under the title of listening. Some information could be extrapolated from learning theorists, but researchers on listening have yet to grapple with the receptive abilities of normal children who have not reached a competent level of expressive language development.

Researchers in listening have paid little attention to developing systematic relationships of listening with other areas of development - intellectual, physical, social, emotional. Although there often appear to be underlying ...

assumptions in the research, reflecting a particular viewpoint on intellectual development for instance, there is little explicit research on a developmental basis that relates listening to intellectual development and theory. Correlational studies of intelligence and listening tend to be the general level of operation.

There are two widely used tests of Listening Comprehension in the United States, the Brown-Carlson Test (1953) for college students and the Sequential Tests of Educational Progress Listening Test (Educational Testing Service, 1959). Apart from recent work in England subsequent tests of general listening comprehension have tended to be based on similar lines, i.e. written material read aloud and multiple choice responses involving some reading of possible answers. The P.A.T. Listening Comprehension Test published by the N.Z.C.E.R. (1971) is an example of this pattern of test construction. The P.A.T. Listeners Comprehension manual acknowledges that the tests are based on the receptive reflective distinction reported earlier.

The Brown-Carlson Test was designed in conjunction with the National Council for the Teaching of English and after analysing diagnostic tests of silent reading a battery of five sub-tests was produced:

- (1) immediate recall
- (2) following directions
- (3) recognizing transitions
- (4) recognizing word meanings
- (5) lecture comprehension (the ability to deduce meanings from context, understand the central idea, draw inferences, understand organization, and note the degree of relevance).

Furthermore, it was determined that the Brown-Carlson test was not one of either reading or intelligence. As one author points out the validation of a previously unmeasured skill is difficult, but goes on to say somewhat surprisingly that:

"While the wide and continued use of a test, even over a long period of time, certainly is not a technical way of establishing validity, it may well be that under the circumstances, it is at least somewhat persuasive evidence in favour of validity." (Duker, 1969, p.750).

The Brown-Carlson and the STEP listening comprehension tests have been subjected to criticism from time to time both in terms of basic assumptions and in terms of correlational studies. In a general discussion on listening tests Wilkinson (1970) makes the following points:

"The taxonomy of listening skills drawn up by Brown and Carlson has produced the most useful test. Haberland (1959) contrasts it favourably with two other tests. Many other workers seem to have drawn up listening tests on quite arbitrary criteria, which possibly explains the disparate correlations with other measures. But even the Brown-Carlson test has its critics. Lindquist (1959) draws attention to the fact that there is no convincing evidence that either it, or the STEP listening comprehension test, measures anything different from a silent reading test. Again, the Brown-Carlson taxonomy might seem to introduce a spurious accuracy into the test; the factors which seem to be measured might not be measured at all. And yet again it can be argued that the validity and reliability of the test could be improved," (ibid, p.142).

A study by Anderson and Baldauf (1963) analysed the STEP Listening Test and concluded that estimates for reliability fall below minimal acceptable levels for tests used for individual evaluation. He also suggested that the heavy loadings on verbal comprehension indicated that achievement on the test may be a matter of verbal comprehension and not listening as a distinct ability, and that the test had no general utility in an overall standardized achievement battery.

Devine (1967) makes the point that listening tests appear to be measuring something else than, or in addition to, listening ability. Duff (1967) also questions the validity of listening tests available. He suggests there is a need to gain knowledge of the exact nature of the relationship between listening comprehension, reading comprehension and intelligence so that "it will become easier to eliminate from listening tests items which do little more than reflect skill at reading comprehension, or intelligence," (ibid, p.61).

Haberland (1959) commented that the listening tests in use did not agree closely with one another. Similarly Kelly (1965) investigated the Brown-Carlson and STEP tests of listening...

comprehension and concluded that the construct validity of each was questionable because the two tests failed to correlate significantly higher between themselves than with reading and intelligence tests.

A different approach to assessing listening ability is being developed at the Oracy Research Unit at Birmingham University. Researchers in England have shown little interest in developing studies along the lines of those conducted in the United States. Wilkinson (1970) offers the comment that test batteries in the past have laid great stress on information content, and on difficult verbal problems which in fact have low occurrence in living speech because of its high redundancy levels. One test has been developed by the Oracy Research Unit along linguistic rather than psychological lines (Atkinson and Wilkinson, 1968). It takes as the basis of its material the spoken language -- for instance, spontaneous recorded conversation make up one test, and includes linguistic concepts. The sub-tests are claimed to be measuring different aspects of listening and include tests of content, detail, transitions, word meanings, listening for meaning, register and style. The test material and questions were recorded on tape and subjects had multiple choice answer sheets before them.

Another test currently being developed at the Oracy Research Unit consists of a battery of sub-tests including content, phonology, register, relationship and prediction. All the tests are in the form of real or simulated conversation. Wilkinson (1970) particularly highlights the sub-tests of prediction and relationship. The former is concerned with assessing a person's ability to supply a speaker's utterance from the evidence of what the other person in the conversation says before and after it. The latter test of relationship attempts to discover how far there was understanding of the way language is used to establish relationship and reciprocity between people.

The framework from which Wilkinson works is discussed in another section of this report. For the present discussion it is worth noting that basing testing on less literary grounds...

appears more likely to have relevance for children and to develop skills that are both situationally specific and of general use. Also Wilkinson's discussion technique in teaching sequences demonstrates an additional bonus in providing opportunities for personal evaluation of prejudices. The acceptance of the affective use of language by Wilkinson can be contrasted with the rather sterile 'intellectualising' of American researchers.

Lundsteen (1971) comments that the paper and pencil type evaluations of listening ability give little or no opportunity for a child to see the genuine consequences of how he listens. "Children need to see direct cause-effect relations that are the products of the quality of listening they do" (ibid. p.81). The real-life situations, Lundsteen feels, are difficult to simulate in paper-pencil tests. Similarly the difficulty of controlling the variables in an interpersonal communication situation are a cause for concern. While Lundsteen accepts important variables exist in the surrounding conditions of an encounter, she questions the suitability of attempting to apply scientific methods to some questions about listening. It should be noted that Wilkinson's work, elaborated elsewhere, goes some way to accommodating real-life situations and the cause and effect relationships involved.

Of particular relevance in relation to assessing children's language are the comments by Stern (1968). She emphasises that the affective variables of impulsivity, motivation and attention are often neglected in the evaluation of children's language.

"At present the state-of-the art in the measurement of listening seems to be best described by these terms: relatively scarce, reasonably reliable, but often confused; lacking in imagination, but becoming more widespread, with a greater range; and attracting increasing interest," (Lundsteen, 1971, p.83).

Test Selection: Summary

Compared to tests in reading there are relatively few tests in listening available. Apart from the N.Z.C.E.R. Progressive and Achievement Test of Listening Comprehension...

previously referred to, the following have been widely used in the United States. New tests being developed in the United Kingdom are also included:

Ammons Full-Range Picture Vocabulary Test. Psychological Specialists. Forms A and B. Preschool to Adult. An individually administered test of receptive language vocabulary.

Brown-Carlson Listening Comprehension Test. Harcourt, Brace & World. Grades 9-13. A test designed for group use to determine ability to understand spoken English. A receptive language test.

Durrell Reading-Listening Series. Harcourt, Brace & World. Primary (grades 1-3.5); intermediate (grades 3.5-6); advanced (grades 7-9). Group tests of listening and reading ability. Permits a comparison of these two language skills.

Illinois Test of Psycholinguistic Abilities, Revised. University of Illinois Press. Individually administered test containing twelve subtests of dimensions of mental processes. Scores obtained on subtests can be used for diagnostic purposes, (auditory reception, auditory memory and auditory association subtests).

Northwestern Syntax Screening Test. Northwestern University Press. Ages 3-7. Individually administered test of receptive and expressive syntactic linguistic abilities, (receptive language section).

Peabody Picture Vocabulary Test. American Guidance Services. Ages 2-8. In individually administered test of receptive language vocabulary.

Van Wageningen Listening Vocabulary Scales. Van Wageningen Psycho-educational Research Laboratories. Grades 2-6. A listening or receptive language test of words, (a portion of the Sequential Tests of Educational Progress).

New tests in England produced under the Schools Council in association with the Oracy Research Unit, University of Birmingham have not been well documented from present resources. They would appear to assess language in an integrative manner. (Wilkinson, 1970).

Using Listening Tests:

A useful summary of the uses to which standardized listening tests are put has been simply stated by Lundsteen (1971, pp.67-68):

1. To assess the range and distribution of listening ability in a particular group so that difficulty of oral material can be adjusted.
2. To assess and predict the listening ability of individual children with respect to language features.
3. To direct placement, instruction and improvement of instruction.
4. To see if the child has learned what he is being taught or needs more of various kinds of instruction.
5. To measure the improvement of listening skill over a period of time.
6. To estimate reading potential.
7. To compare reading and listening skills in order to make the most of the best mode of reception.
8. To give children feedback on the results of their efforts and to give evidence for advising next steps.
9. To test assumptions, proposals and models about listening.

RELATIONSHIPS TO LISTENING:

The increased interest in listening as a research topic has encouraged researchers to cast around for significant relationships of listening with other psychometric findings. Such relationships reinforce the complexity of listening while at the same time confirm the importance of listening as an identifiable separate construct. Listening is generally defined operationally in terms of the extent to which spoken words are comprehended. In examining factors affecting this comprehension researchers, by the use of correlation measures mainly, have attempted to develop systematic relationships. The danger of drawing inferences from correlational data is often noted in passing by some researchers. One writer makes the plea that "correlational studies offer no guidelines for planning intervention procedures and may be harmful in that they provide a spurious statistical basis for a popular mythology." (Stern 1968, p.49).

Intelligence:

A cursory examination of the experimental evidence reveals a wide range of correlations between listening comprehension and intelligence tests, usually varying between .4 and .8. The varying degrees of correlation appear to be due to different selection procedures, types of listening tests used, and variations in test administration and procedure. In addition intelligence tests vary in the relative emphasis given to verbal and non-verbal types of item. Correlations between listening comprehension and non-verbal sections of intelligence tests tend to be in the range .2 to .3. (Russell 1964), (Caffrey 1955), (Duker 1964, 1969).

A recent New Zealand study re-affirms a very large general ability component in the P.A.T. listening tests and reports correlations with the Otis of .6 for Form II and .7 for Standard 4, slightly better correlations than those achieved during the construction of the test. In particular this factorial study suggests that the listening test is saturated with the verbal reasoning factor and that the test measures related but different aspects of verbal ability (Reid & Hughes, 1974).

A criticism by most reviewers in the field is that the similarity of items between tests of intelligence and listening creates spurious correlational data.

One of the confusing aspects of research in listening has been the discreteness of the particular listening tasks and the relationship of the underlying skills to intelligence. Evidence seems to suggest that ability in certain specific listening skills is more related to experiential background than to intelligence per se and thus more amenable to training. In a study by Ross and Ross (1972) educable mentally retarded children scored higher after training than a group of average children in a task involving filling in missing words, and equalled the average group's performance on sub-tests of digit span, repeating sentences and rhyming. This is further emphasized in a study by H.S. Taylor (1972) who suggests that lower and middle achievement groups seemed to profit most from planned listening lessons. Such evidence also supports the claim that listening can be separated from other areas of functioning.

Reading:

Since reading and listening are assumed to be related as both are classified as receptive abilities, much interest has been shown by investigations into relationships existing between these two abilities.

The correlations reported between listening comprehension and reading comprehension tests are about the same magnitude as those found between listening comprehension and intelligence tests. Duker (1969) reports in his view that a meaningful relationship still exists between reading and listening, even when such factors as intelligence and school achievement are held constant. A verbal reasoning factor is usually suggested as accounting for this relationship and this has been confirmed in the recent New Zealand study of the Progressive Achievement Tests (Reid & Hughes, 1974). In this study it is suggested that the tests of Vocabulary, Reading Comprehension and Listening Comprehension are measuring to a large extent the same underlying abilities, albeit through different modes.

The support for a relationship between reading and listening is not equivocal and the variations reflect differences in approach and content of tests.

"Reported correlation coefficients between listening and reading were positive and high. Ross (1964) found a coefficient of 0.74; Brown (1965) found coefficients of 0.82 at fourth grade level, of 0.76 at fifth grade level, and 0.77 at sixth grade level; both Condon (1963) and Fawcett (1963) found 'high' correlations; Duker (1965) reported an average coefficient of 0.57. Other recent studies of tests used to establish such correlations suggested that the tests may be measuring something else, or in addition to, listening ability. It may be advisable to delay further correlational studies between listening and reading until instruments for measuring pure listening ability are available. It may also be wise to interpret coefficients of relationships between listening and reading with the limitations of listening tests in mind," (Devine, 1967, p.154-5).

Notwithstanding such reservations by Devine (1967) investigations have continued to explore the relationships between listening and reading. An important study prior to Devine's statement was made by Holmes and Singer (1961) who ...

used factor analysis to determine the factors involved in reading. They found "that listening accounted for 14 per cent of the variance in speed of reading; this was 25 per cent of that portion of the variance for which the factor analysis accounted. Of the variance in power of reading, listening accounted for 16 per cent; this was 21 per cent of the portion of variance explained," (Duker, 1964, p.158).

The suggested relationship between listening and reading has led to studies involving using listening scores as a way of assessing reading expectancy. This point is fully developed on the manual of the Listening Comprehension Test of the P.A.T. series (N.Z.C.E.R., 1971) and confirmed in a factor analysis of the Progressive Achievement Tests (Reid & Hughes, 1974). Evidence for the use of listening tests as a tool in predicting reading potential is presented by Duker (1965). In particular, a study by Toussaint (1961) has been used by investigators to demonstrate that listening tests in combination with intelligence and arithmetic tests were the most effective in estimating reading potential.

A multi-disciplinary study showed that although low achievers in reading had significantly lower listening comprehension than high achieving listeners and therefore poorly developed listening skills, the group's average listening ability was at least one year above grade placement. This was taken to indicate high possibility for reading improvement. (Larsen et al, 1973).

A further area of inquiry resulting from the exploration of listening and reading has been the measurement of the effect of teaching listening skills on reading and vice versa. The evidence is by no means equivocal in this regard. Devine (1967) reports three studies in which instruction in listening had no significant effect on reading performance. Duker (1965) is able to report several studies which support an improvement in reading as a consequence of instruction in listening, but admits that results are not entirely consistent. The assumption of automatic transfer can be questioned when emphasizing reciprocal benefits between listening and reading.

Thorn (1968) investigated the effect of direct instruction in listening on the listening and reading comprehension of first grade children. The conclusions were that: (1) the listening comprehension of the experimental group improved; (2) instruction used in basal reading programmes improved listening comprehension when adapted for use with aurally presented material; and (3) listening instruction had a strong positive effect on reading achievement although it did not produce highly significant improvement in reading comprehension.

The relationship of listening to poor reading has also been given some attention in research. The auditory and visual decoding sub-tests of the Illinois Test of Psycholinguistic Abilities indicated that poor readers were lacking primarily in auditory functions rather than visual, (Golden and Steiner, 1969). There has been substantial confirmation that poor readers have deficits in auditory sequential memory. A re-grouping of the WISC sub-tests suggests that auditory sequencing is weak in such readers and that this can be accounted for in terms of short-term memory processes and attentional processes, (Rugel, 1974). The implication that in general a poor reader is also a poor listener is also drawn by Duker (1965).

A study to identify the auditory perceptual skills that differentiate good and poor readers in primary grades identified the following skills: (1) memory; (2) constancy; (3) figure ground; (4) temporal discrimination; (5) synthesis. The conclusions were that discrimination was not significant past second grade and that poor readers failed more than one subtest. (Lyness, 1968).

It is generally accepted that auditory-visual integration is related to reading achievement. (Jones and Aaron, 1971).

It is perhaps significant in the research quoted above that the listening deficits identified for poor readers tends to be at the initial processing stages. This weakness is unlikely to be exposed, except in a general way, by the more literary tests of listening that are in common use.

Speaking:

"The relationship between listening and speaking is likely to be complex but has been little explored. Blake (1964) asserts 'It has been proved empirically that listening and speaking are directly related' but he cites only Strickland (1962) who found in her work 'The structure of children's oral language as measured by the fluency of use of the common structural patterns was more closely related to listening comprehension than to any other variable.' Her work was with primary school children.

Stark (1957) used the Brown-Carlson test and found that 175 college students rated as good speakers performed better on it than those rated as poor speakers. Recent British work on the other hand with what is probably the largest sample ever used with a listening test (960 subjects) found a correlation of only 0.22 with the CSE Spoken English examinations of three Boards. The teachers' estimates of these children's spoken abilities only correlated slightly higher at a 0.25 (Atkinson and Wilkinson, 1968)." (Wilkinson, 1970, p.142).

The manner in which a speech is organized, or the manner in which it is delivered does not appear to have a material effect on the comprehension of that speech, but as expected an easy speech is better comprehended than a difficult one. (Duker, 1969).

Devine (1967) comments on the lack of research in this area and suggests that correlations between listening and speaking may be negative.

Personality:

Investigations of the relationship between personality and listening ability have been inconclusive. Many researchers have included personality dimensions in their research design mainly on an intuitive assumption that such a relationship should exist.

Barker (1971) reports the most important finding in this area has been that ego involvement tends to reduce listening comprehension, whereas objectivity tends to increase listening ability. In addition Barker suggests that listeners who have personal worries or feelings of insecurity, or feel they are "doomed to failure", also tend to be poorer listeners than ...

those who are optimistic and free from momentary worries.

Haberland (1959) reports slight correlations of listening with personality, vigorous and reflective characteristics had the highest correlations.

Wilkinson and Stratta (1972) reports that measures of introversion and extroversion did not show any significant relationship to listening with a large sample of high school students.

Higgins (1964) analyzed scores made by the same group of subject on two listening tests and two anxiety scales and found that (a) listening was influenced neither negatively nor positively by anxiety and (b) no substantial relationship existed between listening ability and anxiety.

Ross (1964) compared listening test scores of good and poor listeners, who were identified as the upper and lower extremes of his test population, with other variables, e.g. reading, arithmetic, personal and social adjustment, socio-economic factors, and hearing. He found a high positive relationship between listening and all factors studied except hearing and personality (correlations between listening and personality test scores ranged from - 0.28 to 0.18).

Lundsteen (1965) compared scores on a personality test and scores on her experimental test of critical listening and found no significant relationship.

Pflaumer (1972) suggests four personality types in relation to patterns of listening, which she suggests offers the opportunity to tailor a listening programme to an individual's personal needs. Listening as both emotional and intellectual is a basic premise and the operational balance between the two is a measure of the listener's effectiveness in using and synthesizing information. Thus "attitudes and desires, degrees of involvement, abstract and organizational ability, reality, alertness and logicity versus emotional passivity, perceptivity and introspectiveness, standards of toleration and satisfaction are considered integrally in the process of listening," (Pflaumer, in S. Duker, 1971, p.31).

An additional premise involves types of listening which depend on the given needs and situation at a particular time. The basic assumptions show a distinct similarity to those utilized by Wilkinson and his co-workers in England.

The personality types are suggested in dichotomies - indirect versus direct; unfocussed versus focussed, distant versus intimate; and no feel versus feel.

Pflaumer describes the personality types in both positive and negative details and suggests that the profile gained from measuring these characteristics will assist in designing a programme to move the listener towards the 'ideal type' described as follows:

"The ideal listener primarily keeps an open, curious mind. He listens for new ideas everywhere, integrating what he hears with what he already knows. He is also self-perceptive and thus listens to others with his total being or self. Thus he becomes personally involved with what he hears. Being this aware he is not willing to blindly follow the listening crowd. He maintains conscious perspectives in what is going on instead. He looks for ideas, organization and arguments but always listens to the essence of things. Knowing that no two people listen the same, he stays mentally alert by outlining, objecting, approving, adding illustrations of his own. He is introspective but he has the capacity and desire to critically examine, understand and attempt to transform some of his values, attitudes, and relationships within himself and with others. He focuses his mind on the listening and listens to the speaker's ideas, but he also listens with feeling and intuition," (Pflaumer, in S. Duker, 1971, pp.46-47).

Any attempts at more integrative approaches will probably effectively neutralize the more discrete approach which emphasizes the identification and training in a particular skill. There is room for both as long as practitioners have an integrative framework from which to work.

Characteristics of the Speaker:

There is some evidence to suggest that characteristics of the speaker are related to the comprehension of his speech by listeners.

There are two types of information communicated - cognitive and affective. "Cognitively the Addressor may be presenting fact or other knowledge, he may be arguing, instructing, demonstrating. Affectively he will probably be indicating his own attitudes towards the cognitive content of his utterance; and his relationship to the Addressee," (Wilkinson & Stratta, 1972, p.7). It is from the cognitive and affective information content that the speaker's implicit and explicit intentions are assessed.

In an early review of the literature Caffrey reported research concerning the way speech is evaluated and carries information about the speaker. Furthermore he reports that high and low prestige identifications of the speaker markedly affect listening. Of particular interest has been research attempting to identify listeners who can perceive bias in the speaker (Caffrey, 1955). This latter area has been developed by American researchers into a special area of study involving critical listening and in particular the evaluation of propaganda.

It would appear from the research reported by Caffrey that listeners may be influenced by either ascribing for themselves or having prescribed for them certain expectations of the speaker. Intuitively it would be anticipated that personality characteristics of the speaker influences comprehension and this has been given some credence in research (Brooks and Wulftange, 1964; Wilkinson, 1971).

Barker (1971) reports that the use of gesture by the speaker can significantly increase comprehension for the listener. While it is obvious that adequate comprehension of verbal material can be achieved through radio and tape recordings, the use of non-verbal information by a speaker appears likely to influence the listener. As yet this area is poorly researched in relation to listening, yet actors of mime clearly demonstrate the possibility of communicating without words.

Rate of Speech:

Although the rate at which speech is delivered to the listener should nominally be within the discussion about the characteristics of the speaker, this area has a substantial body of research and will be treated separately.

Technical advances have enabled researchers to speed up speech without affecting intelligibility. The value of rapid reading programmes has no doubt given impetus to develop programmes in rapid listening. "Research on the possibilities of rapid listening to compressed speech is barely at the threshold. The possibilities inherent in the use of increased rates are tremendous, and the implications for the usefulness of listening are intriguing" (Duker, 1969, p.751).

Reviewers of literature have been able to include increasing numbers of research findings on rate controlled speech over the last ten years. Duker (1964) is able to report one study with braille readers in which the average rate of 175 words per minute was speeded up. There was no appreciable decline in comprehension up to 275 wpm. Thereafter the decline in performance was rapid, but even at 375 wpm there was some indication of comprehension.

Devine (1967) in his review reports that speaking presentations of 210 wpm yielded better results for mentally retarded students and for students with limited sight. A further study indicates that 175 wpm yielded significantly better results for cerebral palsied students. Rates of 125 wpm and 175 wpm yielded better results for both mentally retarded and intellectually normal students in another study. Finally Devine confirms the assumption that speaking rates can be increased (even up to 475 wpm) without significant loss in comprehension.

In a later review by Duker (1969) he reports that comprehensibility begins to decrease rapidly beyond 300 wpm.

Mullaly (1972) investigated the comprehension of a narrative passage by primary school children as a function of listening rate and reading comprehension level.

He reported a gradual decline in listening comprehension as speech is compressed from 138 wpm to 345 wpm. This decline was also matched by the ages of the children with younger children (grade 1) responding quicker with lack of comprehension to the rate increase than older children (grades 2 and 3).

Duff (1967) reports that the speaking rate of the teacher affects comprehension by children. He suggests a need to speed up the speaking rate to limit the loss of concentration in a listening situation. The tentative generalizations from research in speech rate are reported to be: (1) human subjects are able to listen, with varying degrees of profit, to speech at widely differing rates; (2) there is a tendency for more effective listening when speech rates are at the lower end of the frequency scales; (3) rates of between 120-150 wpm appear to be optimal in most experiments.

Increasing the rate of speech presentation raises the question of what to do with the time saved. It has been used to repeat the same message and claims for greater comprehension have been made. Alternatively it can be used to present new information. Sticht (1971) found that learning of new material did occur in the time saved, but overall learning did not surpass that obtained by listening to the uncompressed, unelaborated material. There appeared to be some loss of comprehension in both content sources. Sticht claims that it remains to be demonstrated that more information can be learned in a given time unit with moderate time compression of materials.

The expansion of speech to a slower rate has received little attention apart from the suggestion that a slower rate may be of benefit to mentally retarded children and to certain types of the auditorially handicapped. One study by McCroskey and Thompson (1973) goes some way to fill this gap. In their study with learning disabled children, the younger children in the study (aged 5-1 to 10-3) benefitted most from the slowest rate of presentation - 6.8 syllables per second. Lettick (1974) suggests that 'stripped down' speech presented slowly...

and with sufficient time lag before response is essential to successful communication with learning disability children.

A cautionary note is made by McCroskey and Thompson (1973) regarding the ability of an individual to receive and interpret acoustic events more rapidly than his neural system seems to dictate.

Comprehension of speech requires more than the simple detection of the presence of acoustic events. This has been illustrated by several investigators. Warren and Warren (1970) looked at the problem of identifying the sequence of order of events in a seemingly simple listening task with adults having normal hearing and normal language skills. Their work shows that extremely brief (50 millisecc) pauses, plus controlled rise-fall times are critical to the accurate perception of the order of incoming events of speech. Gerber and Scott (1971) looked at time compressed speech and suggested that adverse effects of compression may be due to an individual's inability to process speech at the higher rate. Overmann (1971) speaks of the deleterious effects upon comprehension of increasing word rate, thereby decreasing processing time. Green (1971) has also made reference to the fact that temporal order of acoustic elements is vital to the appreciation of the information content of speech.

In the light of these later findings, the enthusiasm of Duker (1969) can be questioned. It is likely that speeding or expanding speech will have specific rather than general application to teaching practices and therefore require accurate assessment.

Age:

Barker (1971) reports two important age-related variables, attention span and preference for listening over reading. Younger children characteristically have a short attention span, although some adults and those approaching senility may similarly demonstrate short spans of attention. Younger children listen more rapidly than they can read, but older children approaching adolescence and competent in reading, are...

likely to prefer their own pace and read rather than be restricted by the speed of the speaker.

Gaffrey (1955) reports a step-wise increase in measured listening skill at each age level. This is confirmed in a later review by Devine (1967). It would appear then that listening continues to be an important contributing factor in language competence and that highlighting an increasing superiority for reading is a somewhat misleading approach.

Sex:

Gaffrey (1955) reports several studies in which males showed a consistent though slight superiority in listening. These findings and others are questioned by Barker (1971) in terms of methodology employed in investigations. Taylor (1972) found sex of the listener was not an influence in the benefits to be gained from a listening programme. Similarly Legge (in S. Duker, 1971) found no significant difference in listening performance in a wide ranging sample of males and females.

Socio-economic/Cultural Status:

The inclusion of a section on listening and the disadvantaged by Duker (1971) is perhaps significant of a growing concern in an area poorly researched to date. It is generally concluded that disadvantaged children have a general language deficiency although they may also be inefficient listeners. Other commentators reflect that such children have a 'rich' language, but that it is inappropriate to the testing situation and achievement expectations of schools.

Disadvantaged children in second grade were measurably poorer in visual and aural learning compared to advantaged children. Of the two areas a particular weakness was demonstrated in aural learning tasks compared to visual learning tasks (Williams, 1970).

A study involving the use of standard English indicates no significant difference in the ability of black and white children to comprehend standard English (Mathewson, 1973). Similarly the use of negro dialect or standard English did not significantly affect the ability of negro children to ...

comprehend (Ramsay, 1972). On the other hand, Levy (1972) found that grade two negro boys performed better on standard English presentations than an equivalent group presented with the same stories in black non-standard English.

The use of the Wepman test of auditory discrimination has been questioned elsewhere, but Clark and Richards (1966) found that there was a significant deficiency shown in auditory discrimination by the disadvantaged group test by them.

In an attempt to motivate disadvantaged pre-school children to improve their listening a tangible reward system proved effective in a study by Feltman (in S. Duker, 1971, pp.251-255). The culturally deprived children in the Head Start programme were weaker in listening skills than their middle-class counterparts. The skills selected for teaching were sound discrimination, auditory memory span for nonsense words, synthetic analysis of sounds into words and delayed memory and comprehension.

Orr and Graham (in Duker, 1971, pp.256-267) have gone further than most in developing a listening test specifically designed to contain content of interest to disadvantaged children and to identify potential. They comment that the effect of disadvantage may typically be more associated with the development of reading proficiency rather than verbal proficiency in general.

The emergence of interest in this area is commendable, but research is somewhat atomistic and inconclusive at present.

Foreign Language Learning:

This area has not been exhaustively examined in this report. A cursory glance of the literature demonstrates inconclusive evidence of the value of listening training in learning a foreign language. It could be expected that listening training would assist if the experiences provided opportunities to anticipate the sequential probabilities of the language. Learning a foreign language highlights the rate of speech concept mentioned elsewhere, in that the foreign language student or tourist often fails to understand unless...

the speaker speaks slowly. In addition it is not unusual to have the auditory vocabulary and therefore understand what has been said, but be unable to speak the language proficiently. On the other hand proficiency may be measured in terms of attending to all the words spoken or attending to peak cues in the message. This appears a profitable area which highlights many concepts basic to the processing of auditory information.

Vocabulary:

A teacher often intuitively reads a story to a class which is pitched in terms of difficulty at the more capable children in the class. This reflects a belief that in addition to providing gesture and suitable expression the listeners also have a larger listening than reading vocabulary. It appears from research that the auditory vocabulary remains larger than the visual although the discrepancy diminishes in proportion to increased competence in reading (Duker, 1969). This highlights the use of listening scores as a measure of reading expectancy.

Scholastic Achievements:

Legge (in S. Duker, 1971, pp.121-134) establishes that listening skill is an influential factor in scholastic achievement. He found high achievers better at listening and that listening was more highly related to scholastic achievement than it was to intelligence.

Duker (1969) in his review reports a generally strong positive relationship between listening ability and scholastic achievement. As achievement tests contain items similar to those of intelligence tests the relationship is not particularly productive at this stage. Many of the criticisms of the relationship between listening and reading and intelligence are equally applicable here.

Music:

The relationship between listening and music will not be elaborated fully in this report. This area has a substantial body of research in its own right and would need to be incorporated in an exhaustive study of listening.

Zimmerman (in S. Duker, 1971) claims that listening to music and listening to the spoken word require exactly the same mental processes. "Music is a time art. It presents no unusual symbol, no objects to grasp, touch, or feel, no chart to guide the memory. Whatever we listen to we must immediately associate, compare, discern, evaluate, and retain for recall in either its exact or modified form." (ibid, p.138). Thus from hearing to perception to cognition the processes involved appear similar. The initiation into a conceptual framework in order to listen to music bears some similarity to Wilkinson's (1971) approach to the study of spoken language. The similarities if further explored may well clarify some of the issues presently associated with listening to spoken language.

PROCESSING AUDITORY INFORMATION:Introduction:

It seems evident that many children are unable to receive and comprehend the spoken word in quantity. It is possible that this inability is due to a delayed reaction to sound, or possibly slow processing. If a child has listening problems he may have difficulty with foreground/background of sound; he may not be able to separate that to which he should listen from that which he should ignore. Attention may be a factor. There may be difficulties in concentrating on what someone is saying even though there are no obvious distractions. Even though he may be able to hear that which he should hear, he may find it difficult to interpret the words and transfer them into the required response or to store away functional information. Subsequently he may have trouble associating verbal stimuli with previous events or associations.

A Conceptual Framework:

Berry (1969) underlines the interdependence of the sensory modalities and their influence directly and indirectly in the comprehension and use of language. Berry links neurological background and psychological parameters in her discussions of language. She sees a strong link between proprioception of speech and auditory perception of speech.

The detailed discussion in her book is beyond the boundaries of this report but a selection of key ideas, supplemented from other sources where appropriate, provides a suitable framework for this section:

"Auditory perception of speech per se deals mainly with the temporal management of information from the input. It is a process by which one explains how a child's nervous system learns to comprehend and make use of auditory information. We do not know all the processes operative in auditory circuits, but presumably the following should be included:

- (1) analysis at the initial stage of rapidly successive bits of information
- (2) primary patterning through activating and inhibitory feedback processes until new patterns are joined with wave patterns from other modalities

- (3) further modification of wave patterns effected, in part, by earlier patterns activated in cortical and sub-cortical areas.

That these three phases are not discrete divisions is immediately apparent.

We do not perceive the elements of speech in a stepwise function of time. If perception is a continuous process, all phases probably are represented throughout coding The motor theory of speech perception presupposes that auditory discrimination of speech rests upon kinesthetic discrimination. Words assume sharp profiles, 'faces', in auditory comprehension because motor speech and its motor feedback help to provide them. It is a process of analysis by synthesis in which the child makes use of his knowledge of the articulatory gestures that are involved in the production of speech Auditory perception of speech also hinges on memory, the retention of auditory patterns that have previously been laid down in the nervous system. Presumably the matching of current auditory patterns with past patterns is a major function of the continuous process of analysis by synthesis," (ibid, pp.59-60).

Berry has an essentially transactional viewpoint of information processing in which:

"The message undergoes constant modification and elaboration from receptor to response The transaction begins in the peripheral receptive systems where the code may first be altered, and it continues in classical sensory-motor routes, in multi-sensory convergences upon polyvalent neurones of reticular, limbic, subcortical, and cortical bidirectional systems, through specific and non-specific sensory-motor and motor-sensory fields in cortex and sub-cortex. The transaction is completed in the response, i.e. in the act of perception, inner language, or explicit expression," (ibid, p.110).

The complexity of the listening process as outlined by Berry creates something of a credibility gap in some research designs, tests and teaching of listening.

The importance of proprioception in mediating language has been emphasised by Berry (1969) and argument usually takes the following form: (1) since motor patterns are the earliest events in the comprehension of speech, proprioceptive feedback must mediate between the acoustic stimulus and its perception; ..

(2) proprioceptive feedback signals from articulatory movements apparently are more distinctive than acoustic signals; (3) phonemic sequences are truly motor command patterns, i.e. they are temporal-spatial, neural patterns that activate entire muscle groups responsible for articulation of syllables, words or phrases. These concepts, well supported in research, suggest that the clinical practice of teaching the sound in isolation is completely unsound.

According to Liberman (1963) the interaction of proprioceptive feedback and the auditory impulses provides the distinguishing cues for differentiating the auditory information. If a child's perception of language is predicated on sound sequences rather than on sounds in isolation, it seems productive to accept the postulation that the perceptual cues of auditory information are posited in neural equivalents of the movements involved in going from consonant to the next phoneme. These cues become highly redundant over time and only peak cues are selected so only partially perceived patterns are interpreted and integrated into meaningful wholes.

Further to the importance of motor activity in relation to language development is the suggestion by Wilton (1971), who maintains that hypermotoricity interferes with reflectiveness in young children, delaying language development. This further highlights the importance of adequate integration of all aspects of functioning in an organism and that one aspect, listening, is dependent on adequate functioning in other areas.

It is suggested that the language handicapped child selects single sounds on a beads on string fashion and fails to utilize the important cue contained in the transitional phases of sounds so important for sequencing the auditory events. Such a child may try to receive too many bits of information, much of which will be redundant, or he may not be able to order sequences of information at the usual rate of reception.

Attention:

This is a frequently and often loosely used concept in listening research and requires further elaboration, particularly as there are increasing efforts by investigators...

to operationalize the mechanisms and process involved in the construct. The rise of behaviourism led to the neglect of attention as a useful construct, but this trend has now been reversed. Attention has become a major research topic in its own right. This report can only offer elaboration in a general way with regard to the relationships between listening and attention.

For many teachers the phrases "please listen" and "please pay attention" are synonymous. Moray (1969) suggests that the different uses of the word attention each have a valid claim, but that it is unlikely that they share a common mechanism. Of the major uses of the word Moray (1969) suggests the following:

1. Selective attention - the ability to process part of the information and to ignore the rest.
2. Arousal - in which states of arousal are seen in relation to degrees of attention.
3. Mental Concentration - which refers to the ability to sustain attention.
4. Vigilance or watch-keeping tasks - in which the subject is listening for something that has signal value.
5. Set - which usually refers to a predisposition to perceive certain signals or make certain responses. (Moray, 1969, pp.83-84).

In relation to listening the use of selective attention is common in discussions, although the terms arousal and set can often be included in a rather imprecise fashion.

Relevant research has largely concentrated on the ability of the individual to pay attention and comprehend two messages presented simultaneously, and to listen to two competing messages but pay attention to only one. In addition the time lag between rate of speech and the faster rate of thinking has led to investigations of increasing speech rate to avoid loss of attention to the tasks in hand. Thus the basis on which impulses are inhibited as well as facilitated is a major background consideration. The basis on which selection of information takes place has led to considerable research and ...

the development of theoretical models. The models of Broadbent (1958), Treisman (1960) and Deutsch and Deutsch (1963) are based on the concept of a limited capacity channel and concentrate on the selection of one from two or more inputs. Moray (1969) questions this basis on the grounds that attention may be shared, or competed for, between input and output, or between outputs, just as it is among inputs. This continual modification of information reaching the cortex appears consistent with the descriptive framework outlined elsewhere by Berry (1969). In this light Moray may well be somewhat uncharitable in dismissing the analysis by synthesis model as outlined by Neisser (1967).

Hamilton (et.al. 1972) comment that the usual investigation has been for the mechanisms of attention. They suggest that little is known about the dynamics of attention - those functions which determine the stimulus mode, the stimulus and the parts of that stimulus to be selected at any given moment. They investigated noise induced arousal on a visual paired-associate task and concluded that there was increased processing of input under high arousal, i.e. induced by extra noise. In addition they found that high arousal items were poorly recalled immediately after learning, but well registered in long-term memory.

The experiments in the area of selective listening have featured short competing stimuli, including messages, usually with instructions to track one message and ignore the other. The theoretical models are not under discussion, but some of the research findings are useful to report as background considerations for teaching practice.

A number of experiments have demonstrated conditions that make comprehension easier. Some of these conditions are:

- (1) having the two voices very different in physical characteristics, as in a man's and a woman's voice;
- (2) spatial separation of the two voices;
- (3) if one message has no importance for the listener and does not have to be answered;
- (4) if each message is drawn from a small range of

possibilities (Witkin, in S. Duker, 1971).

Maccoby and Konrad (1967) conducted a series of studies on selective listening. They showed that skill in selective listening does increase with age from Kindergarten to fourth grade. Performance on mono-syllabic words tended to level off, between grades two and four, while performance on multi-syllabic words continued to increase through to grade four. The authors suggest that the older children's superior performance lies in part with their greater familiarity with the redundancies and sequential probabilities in the material to be selected.

The distracting influence of background noise has concerned many investigators and is often a point of discussion among teachers. The ability to perceive speech in the presence of noise, usually measured as the signal-to-noise ratio, is important to the normal development of auditory functioning in children, and bears a close relationship to classroom conditions. Nober (1973) criticises experiments using the Wepman test of auditory discrimination which is standardized and administered under quiet conditions and maintains that such a test is not a valid index of the ability to discriminate under conditions of noise and other distractions. Nober concludes that auditory perception is adversely affected by noise. A similar criticism can be levelled at most testing procedures, particularly of listening, in that there are significant differences among the conditions in which listening takes place. For example the introduction of the word 'test' into a listening situation has its own unpredictable consequences. A classification of conditions and variables involved would be a productive if exhausting undertaking.

Siegenthaler and Barr (1967) tested 100 children aged between 4 years and 11 years for the degree to which speech perception was shifted by the presence of 40d.b. sensation level noise composed of a jumble of voices. The girls had essentially stable test scores to age 9, with significant improvement to age 11. The boys consistently had better test scores (less threshold shift due to noise), than the girls, ...

with increasing better scores from age 6 to 11. There is a need for further refinement and replication of studies such as this.

Developmental aspects of attention have been well documented by Russian researchers who report that during the pre-school years attention becomes more stable, wider in scope, and more effective, and increasingly voluntary (Zaporozhets and Elkonin, 1971).

Russian researchers distinguish between involuntary and voluntary attention. The former is seen as influenced by the characteristics of the stimulus; while the latter is influenced by internal mediation, particularly by the use of language (Zaporozhets and Elkonin, 1971). Moray (1969) confirms "that evidence warrants the conclusion that voluntary attention is a psychological and biological reality," (ibid, p.92). The Russian researchers see the cultivation of voluntary premeditated attention as "one of the important problems of pre-school pedagogy and one of the important conditions in the child's preparation for training in school," (Zaporozhets and Elkonin, pp. 86-87). The possibility of systematic management of attention through verbal mediation is both sobering and encouraging and will require the rigorous research currently engaged in by Russian investigators.

Research on stimulus characteristics in relation to motivation also have some bearing of possible practices that may influence attention. Auditory information that is novel, complex, incongruous, familiar, or personally important is likely to assist in motivating a child to attend. Not all the characteristics thus need to be present at the same time. (Berlyne, in Harper, et.al; 1964; Westinger, in Harper et.al; 1964; Hunt, 1961).

Anderson (1970) confirms that students tend to follow the law of least effort which implies that there is just enough selection of peak cues to gain meaning from the situation. His speculation on the mediating processes required for verbal associative learning is probably the basis from which most teachers view learning. They include: (1) noticing the ...

stimulus; (2) encoding the stimulus in a meaningful manner; (3) conceiving linkages between the aspects of the stimulus, including especially, the aspects that will later serve as the cue and the response. He sees attention as involving at least two processes: (1) orientation of the receptors towards the stimuli, which may be observable behaviour, and (2) encoding of the stimuli, which involves responding to one or more aspects of the stimuli; an activity that is inferred rather than observed.

A background note on the contribution of neurophysiology in relation to psychological constructs seems appropriate at this stage. Apart from the traditional sensory route by which highly specific information can reach the cortex in the shortest possible time, the majority of information appears to be routed through the reticular system. This system appears to be intimately connected to other major systems and is given a major co-ordinating function in the literature. A sample of the inter-relatedness amongst various systems is demonstrated when "certain neural tracts in conjunction with endocrine activity also influence the set-to-attend mechanism either directly or indirectly. The limbic-hypothalamus are instrumental in emotional reinforcement of attention," (Berry, 1969, p.90). The complexity of the total activity can be briefly and descriptively stated as:

"the reticular system assists discrimination (perception) and motor responses in this way: It has alerted the cortex, sensitizing certain 'fields of influence' and decreasing the potential of adjacent areas. By determining the rate (frequency code) and patterning of nerve impulses, it brings those of a kind into a space relation and shunts to particular areas certain 'packets' of information. In order to effect this organization and direction, it must shut out extraneous impulses, increase the potential of faint but significant impulses, modulate slightly the form of some temporal patterns, and thus bring the whole complex of sensory-motor circuits into a meaningful whole. It assists, in short, in the coding of all varieties of integration, including perception, learning, and motor response." (Berry, 1969, p.79).

In brief the reticular system is given (1) an alerting function, perhaps the neurological correlate of attention; (2) a gating function involving selection, modification and organization through facilitation and inhibition; (3) a regulatory function involving phasic movement, muscle tone and righting reactions; and (4) a further regulatory function involving the efficient projection of voluntary motor impulses.

This brief framework gives some credence to the constructs usually used by educationists when they refer to focussing, awareness and selection in relation to attending to auditory stimulation.

Attention and Language Impairment:

One of the significant and often reported features of children who have difficulty comprehending the spoken word is that such children demonstrate an attention deficit, (see Rugel, 1974 for further references). This is usually interpreted as meaning the child is either not selecting relevant information and thus unable to restrict the information that is reaching higher cortical structures; or that some selection is occurring from the sensory modes but that internal processing is out of phase and therefore not sufficiently meaningful to activate the required response. Such a child can be expected to respond to irrelevant information or remain in a position of inactivity.

Learning disabled children spent significantly less time engaged in attending behaviour for a variety of school subjects and in addition had different interpersonal relationships with teachers and peers than did comparison children (Bryan, 1974).

McGhie (1969) tentatively suggests that one of the few common features among schizophrenics was that they demonstrated disturbances of attention. These attentional disturbances are manifest in different forms and for both physical and emotional reasons.

The necessity to reduce the amount of stimulation for children with learning disabilities is documented in research and suggested as a practice in treatment situations. For example, children with learning disorders were more influenced..

by stimulus change than normal children, but performed equally well under a constant stimulus condition. (Atkinson and Seunath, 1973). Research is by no means equivocal in this area. Carter and Diaz (1971) reported that although normal children performed better than brain injured children overall in tasks involving distracting visual and auditory background, any increase in distraction did not significantly lower the scores for either group.

Berry (1969) offers a breakdown of auditory deficits which assist in a general way in identifying a weakness in processing auditory information: (1) deficits in peripheral coding; (2) deficits in central coding; (3) ineffective gating, and (4) deficits in terminal coding. She also offers the sobering comment that "when we have the proper means of measurement, and when we know what we should be measuring, we will (probably) find that in some groups of linguistically handicapped children interruptions and distortions of auditory perception of the speech continuum are caused mainly by impairment of the set-to-attend mechanism" (ibid, p.69).

Modality Studies:

The mode by which information enters the Central Nervous System and its subsequent processing has concerned many investigators. In particular researchers have shown interest in dominant modes, selective attention, co-ordination of stimulus input, relationships to teaching practices, presentation of information, and learning increments.

In an attempt to conceptualize the discrepancy in the experimental findings Duker (1965) suggests the following as explanation:

- "1. A combination of visual and auditory presentation of material leads to more efficient comprehension than either an auditory or a visual presentation of materials.
2. Meaningful, familiar material is more efficiently presented aurally; meaningless, unfamiliar material is more efficiently presented visually.
3. The greater the intelligence of the receiver, the greater the relative advantage of a visual presentation.

4. The greater the reading ability of the receiver, the relatively more effective a visual presentation.
5. The relative efficiency of a visual presentation increases with age. At the age of six visual presentation is less effective than aural presentation. At the age of sixteen a visual presentation may be more effective than an aural presentation.
6. Unusually difficult material is more effectively received with a visual presentation; particularly easy material is better understood with an auditory presentation. The relative effectiveness of the visual presentation increases with increasing difficulty of the material.
7. When comprehension is tested by an immediate recall of the material, a visual presentation is favored. If a test of comprehension is made after a considerable delay, an auditory presentation is favored.
8. The relative efficiency of a visual presentation diminishes as the interval of delayed recall increases.
9. One of the most significant advantages of a visual presentation is the relatively greater referability, or opportunity for reviewing the material, that it affords. The less the referability afforded by a visual presentation system, the less its advantage over an auditory presentation.
10. Material that is organized and related - such as prose or factual information - is better understood with an auditory presentation; material that is comparatively discrete and unrelated - such as a code - is more effectively received with a visual presentation.
11. The comprehension of material can be tested either by the ease with which material is learned or by the amount that is retained after a period of time. As a rule, measures of learning tend to favor a visual presentation, while measures of retention are higher after an auditory presentation." (ibid, pp.326-327).

Casambre (1962) reported on a comparison of listener's levels of comprehension in live and taped presentations. He found no significant difference. However, the addition of visual clues to oral speech was found to aid comprehension both on immediate and on delayed recall. Casambre further compared the results of administering the test of comprehension orally to those results associated with the usual visual administration. On immediate recall there was no significant...

difference; on delayed recall there was a significant difference in favour of the visual presentation.

Further confirmation that learning disabled children demonstrate a weakness for auditory tasks has been presented by Estes and Huizinga (1974). These children performed better on visual presentations. A shift from the visual to auditory presentation of the same material produced an initial interference effect which was not exhibited in a shift from the auditory to visual presentation.

Jensen (1971) investigated digital re-call and short term memory and confirmed the suggestion that visual stimulation is transformed to auditory, providing a rehearsal opportunity which strengthens the memory trace and delayed re-call. These interrelationships among sensory inputs are developed elsewhere in relation to feedback from the speech musculature during listening.

Linder and Fillmer (1970) comment that the sampling methods of modality studies are usually poor. In discussing differences of slow readers in auditory and visual performance they confirmed that the children had a preferred channel mode. They found the auditory channel to be a better predictor of reading achievement than the visual channel. They concluded that the auditory channel was inferior to the visual channel and the auditory-visual channels combined, except with familiar objects. Some attempt was also made in this investigation to relate poor reading to home background and in particular noise distractions responsible for 'tuning out' behaviours by the children. This latter point appears to be directed at pointing out the lack of appropriate reinforcement in listening situations and suggests that the learning conditions for listening are often inappropriate.

The point concerning preferred channel modes offers some explanation for variations in investigations where this variable has not been accounted for. In addition the conclusion from most research that simultaneous auditory and visual presentations is superior in terms of comprehension ...

can be questioned because each subject selects a preferred channel and the total group comprehension would therefore be higher.

"Most clear is the fact that the results of research seeking the 'best mode' of presentation for verbal materials or the relationship between intermodal matching and reading can be explained away for a number of reasons. First, discrepancies in the findings of most studies are due, in part, to procedural problems such as equating stimuli to be presented in two modalities or employing tasks more relevant for one modality than another. Stimulus dimensions vary from being equally relevant for several modalities to being specifically relevant to one modality.

Second, investigators have not adequately defined and/or controlled variables shown to influence results: type of material (subject matter, form, length, meaningfulness, difficulty), presentation procedures (sequential, simultaneous, single or repeated duration), measures employed (reliability, validity, immediate recall, delayed recall, recognition, trials to learn), and demographic characteristics of subjects (age, intelligence, educational level, socio-economic status).

Third, investigations exploring the relationship between reading and intermodal matching may be unclear because the experimental tasks designed to study the intermodal processes relevant to reading are not isomorphic to the reading task itself. Indeed, the task of responding to tones and lights is unlike most aspects of reading.

Fourth, in addition to the fact that it is virtually impossible to isolate any aspect of reading behaviour where the auditory and visual modalities are not involved to some degree, there are a number of studies suggesting that mode of presentation does not determine the modality by which material is learned. Rather, the mental image is determined by the ideational type of the individual. In other words, the visual learner may still visualize material to be learned despite the fact that it is presented auditorially.

Fifth, few studies have employed appropriate aptitude-treatment-inter-action designs (Bracht, 1970) to shed light on the hypothesis that there is a significant interaction between preferred perceptual modality and the modality through which verbal materials are presented." (Blanton, 1971, p.211).

LISTENING SKILLS:

Educationists have been particularly interested in identifying the skills involved in listening, testing these skills and devising programmes to improve efficiency in these skills. Leaving aside for the moment some assumptions of researchers regarding such skills and in particular the imprecise terminology and isomorphism assumed in research, it is probably useful to offer some comment of the skills suggested to be involved.

Taylor (1964) has drawn up a typical list of certain listening skills. The list has an implied hierarchy ranging from listening at the perceptual level to listening at the cognitive level. He also considers that the importance of a particular listening skill is situationally specific. He does not sufficiently underline his point that many of the skills, while depicted separately, act in combination. His approach is to identify processes which then become SKILLS which then become translated into TEACHING-LEARNING experiences. The following skills Taylor views as important:

1. directing and maintaining attention
2. following directions
3. listening to the sounds of our language
4. using auditory analysis
5. using mental re-organisation
6. using context in listening
7. distinguishing relevant and irrelevant information
8. listening with a purpose
9. finding main ideas and important details
10. indexing an aural message
11. making comparisons in an aural message
12. finding sequence in an aural message
13. making inferences and drawing conclusions
14. forming sensory images from oral description
15. sensing emotions and moods through words used and through manner of delivery
16. critical listening
17. appreciative listening

It should be noted that a conceptual confusion appears to have occurred in Taylor's list in that some skills are based on the content material and others on the internal processing of the material.

Eleven basic skills were believed to underlie an effective understanding of oral and written communications in a study ...

by Penfold and Marascuilo (1972). These skills were seen as therefore being involved in listening and reading. It should be noted that the emphasis here is that skills are derived from the content material. They are arranged in sequence from the simple to complex and a brief descriptive note accompanies each skill:

1. Inferring connotative word meaning - having listened to a passage containing unfamiliar words (easily pronounceable nonsense words), children derive suggested meaning from the passage.
2. Identifying mood - having listened children choose mood represented by the passage.
3. Providing examples by details - children choose detailed examples when given main idea.
4. Reinstating a sequence of ideas - children to reproduce an item in sequence.
5. Identifying the stated main idea - children choose principal thought communicated.
6. Predicting sequence of thought - from sequence without conclusion children choose idea most likely to happen next.
7. Inferring speaker's purpose - children to derive speaker's purpose expressed.
8. Applying standards to judge persuasions - children identify class or device used by speaker - card stacking, band-wagon, testimonial, name calling, repetition, logical argument.
9. Inferring main idea from specifics - children to summarize specific ideas leading to inference of main idea that was not presented.
10. Judging logical validity - children to judge correct and incorrect deductive logic exhibited in the passage.
11. Identifying sequence ambiguities - children to recognize the irrelevant idea.

Oakland (1971) is more inclusive of the auditory abilities involved and suggests that these abilities are subsumed into the next ability and not discrete entities. He includes in his list:

1. Acuity - detection of sound at levels of frequency and intensity and transmission to the brain.
2. Attention - selection of relevant stimuli and continued attention.
3. Memory - recall of auditory patterns.

4. Discrimination - detection of similarities and differences.
5. Integration (synthesis) - collation of sounds to form aural units.
6. Comprehension - uses attention, memory, integration, discrimination.
7. Auditory - visual integration.

In general the standardized listening tests with an emphasis on cognitive functioning would tend to be concerned with (6) and (7), yet it seems reasonable to suggest that any difficulties with listening comprehension might reflect malfunctioning in the other process abilities.

At the perceptual level of listening, Day (1971) suggests that it is possible to teach pre-listening skills that contribute to the more difficult listening experiences. The six areas of pre-listening development which then become skills to be taught are:

1. perceiving the position of a stimulus in space and time
2. perceiving figure - ground relationships
3. perceiving stimulus constancy
4. perceiving spatial and temporal relationships
5. auditory motor co-ordination
6. perceiving nature (structure) of the subject matter (sound)

Day sees these auditory perceptual abilities as applicable in both linguistic and non-linguistic situations.

Rosner (1974) criticises the Wepman (1958) test for not going far enough in terms of discriminating sounds. In addition to such gross discrimination of sounds by use of the Wepman Test Rosner suggested that auditory analysis skills can be taught to 4 year olds and that this will facilitate reading by developing familiarity with phonemic elements of the reading-spelling code. Consequently the auditory-analysis training suggested by Rosner is to teach a process for identifying the acoustic elements of the reading-spelling code as heard in the context of spoken language.

As a result of the training two concepts are accessible to the child: (1) certain phonemes differ when they are heard as isolated sounds in contrast to when they are heard in a spoken word; (2) the phonemic elements in a word have a specific temporal organization, i.e. the blended sounds of a spoken word occur in a precise sequence from first phoneme to last. Rosner's study reflects a concern both with developing learner strategies in processing information and with directing attention.

Lundsteen (1971) reports on a classification of listening skills at three levels from acuity to discrimination to comprehension. The comprehension or cognitive level is based on Bloom's taxonomy. Lundsteen suggests a split of the six cognitive levels of the taxonomy into general listening and critical listening. Thus knowledge of specifics, comprehension, application, analysis, and synthesis would be developed into general listening skills, while evaluation would be developed into critical listening skills. The following compendium of skills or goals is then produced for the comprehension level of listening. These skills are phrased to suggest behavioural objectives and are therefore likely to appeal to teachers.

A. General Listening Skills or Goals:

1. To remember significant details accurately.
2. To remember simple sequences of words and ideas.
3. To follow oral directions.
4. To understand denotative meanings of words.
5. To understand meanings of words from spoken context.
6. To listen, to answer, and to formulate simple questions.
7. To paraphrase a spoken message.
8. To understand connotative meanings of words.
9. To identify main ideas and to summarize (the who, what, when, where, why).
10. To listen for implications of significant details.
11. To listen for implications of main ideas.
12. To understand interrelationships among ideas expressed or implied and the organizational pattern of spoken materials well enough to predict what will probably come next.
13. To follow a sequence in: (a) plot development, (b) character development, (c) speaker's argument.
14. To impose structure on a spoken presentation, sometimes including note-taking by: (a) realizing the purpose of the speaker, (b) remaining aware of personal motives in listening, (c) connecting and relating ...

- what is said later in the presentation with earlier portions, (d) detecting transitional words or phrases which refer the listener back or carry him along, (e) detecting the skeleton of main and supporting points and other inter-relationships.
15. To connect the spoken material with previous experience.
 16. To listen, to apply, and to plan action.
 17. To listen, to imagine, and to extend for enjoyment and emotional response (includes appreciation for aesthetic, artistic, dialectic richness, felicity of phrasing, rhythmic flow).

B. Critical Listening Skills:

1. To distinguish fact from fancy, according to criteria.
 2. To judge validity and adequacy of main ideas, arguments, hypotheses.
 3. To distinguish well-supported statements from opinion and judgment and to evaluate them.
 4. To distinguish well-supported statements from irrelevant ones and to evaluate them; to sort from irrelevant information.
 5. To inspect, compare, and contrast ideas and arrive at some conclusion in regard to them, e.g. the appropriateness and appeal of one descriptive word over another.
 6. To evaluate use of fallacies such as: (a) self-contradictions; (b) "skirting" the question at issue; (c) hasty or false generalization; (d) false analogy; (e) failure to present all choices; (f) appeal to ignorance.
 7. To recognize and judge effects of devices the speaker may use to influence the listener, such as: (a) music; (b) loaded words; (c) voice intonation; (d) play on emotional and controversial issues; (e) propaganda, sales pressure, i.e. to identify affective loading in communication and evaluate it.
 8. To detect and evaluate bias and prejudice of a speaker or point of view.
 9. To evaluate the qualifications of the speaker.
 10. To plan to evaluate ways in which the speaker's ideas might be applied in a new situation.
- (Lundsteen, 1971, pp.52-53).

In addition it has been demonstrated that not only can critical listening skills be taught but that there is some permanency in the gains (Lundsteen, 1964, 1965). Follow-up studies have been unusual in listening research.

Not surprisingly the attempts to describe mental processes in terms of skills has raised criticisms of validity and objectivity in teaching and testing these listening skills constructs. Attempts at more objective approaches are predicated on the amount of information exhibited as a result of exposure to spoken language. As comprehension is a response to a language system this system is beginning to occupy the attention of some American researchers (Kellog, 1966; Carroll, 1968; Bormuth, 1970), and in particular research workers at the Oracy Research Unit at Birmingham University in England. As a result there has been an examination of the language system in terms of rules describing how language works to transmit information, and the specific features of language as derived from descriptive devices in rhetoric, semantics and logic as well as structural linguistics.

The most thorough exploration into the relationship between the language system and listening has been made by Wilkinson at the Oracy Research Unit. Wilkinson's (1971) approach of taking the total language context and life like situations presents a fresh perspective worth further elaboration. He accepts the affective as well as cognitive content of language; and, as mentioned in a previous section, includes linguistic concepts in his frame of reference. Of particular interest to this section and the section on processing auditory information are his constructs to describe language reception, as these constructs assist in an assessment of general listening skill:

1. Recognition - recognition of the words spoken.
2. Use of constraints - this aspect of Wilkinson's discussion clearly underlines the sequential probabilities in language. He includes syntactic, semantic, phonological, and literal constraints. He also sees constraints operating usually forward, but also backward.
3. Organization - refers to the arrangement of the words into recognizable form.
4. Understanding - involves thinking processes and refers to relating the words one to another in order to achieve understanding.

With this framework for processing auditory information together with linguistic concepts of register, style, dialect, idiolect, phonology, lexis, and grammar the testing and teaching approach is somewhat different from that developed in the United States.

Wilkinson and Stratta (1972) indicate concern for the teaching of listening skills in isolation so that they become an end in themselves. In addition the permanency of the gains from training in specific skills is questioned. The following extract illustrates the working framework of researchers at the Oracy Research Unit, Birmingham:

"The training of 'skills' however, we are not so happy about. It appears to try to externalise and describe in far too simple a way a complex internal process. It seems to us that it is far better to 'improve listening' in the context of an inter-related improvement of oracy and literacy and indeed of general development.

Thus listening tests constructed by the Oracy Research Unit at Birmingham emphasise rather the richness and variety of language than 'skills'. Significantly many listening tests and training schemes pay scant attention to the language they use; it is often written language read aloud. Scarcely ever is it considered important enough to quote in reports of investigations. We feel that the motivating force of interesting language produced, not by far distant literary figures but by people in the world around us, engaged in living and communicating as we do, is a great stimulus to the development of listening ability. We also feel that a knowledge of some of the features of language and how language operates is likely to be useful in this connection. To put it another way we do not conceive of 'listening skill' as something existing in the abstract, unrelated to such matters as the interest of the material, or the knowledge of the listener - indeed to the whole context." (Wilkinson and Stratta, 1972, pp.5 and 6).

Wilkinson makes a valid point, yet the discussions he describes utilize questions that reflect particular skills to be developed. Thus there may well be common ground between ...

Wilkinson's approach and Lundsteen's comprehensive list of typical skills. While the belief that certain kinds of questions elicit specific kinds of responses is fallacious, Sanders (1966) presents a useful guide as to ways of asking questions that is based on Bloom's taxonomy. Further research is needed into questioning and listening in particular contexts.

The importance of the context has not escaped American researchers, but it has not been given much attention. Lundsteen (1971) shows concern for the predictable aspects of any listening context as well as suggesting that researchers build unpredictable contextual features into their research designs. In a much earlier review Caffrey (1955) reported that listening comprehension could be influenced by the situation and that the same listener would respond variously to the same speech in different audience contexts. Including the context appears to be a continuing problem for the development of theory and research design, but it is a problem worth resolving.

TEACHING LISTENING:

Much of the research in preceding sections has been predicated on the assumption that listening can be taught and reviewers and investigators present findings demonstrating the improvements shown by intervention through structuring specific listening experiences based on selected skills. (Lundsteen, 1971; Duker, 1971; Devine, 1967; Pratt, 1955; Canfield, 1961; Wilkinson, 1971; Burns, 1961). There is some overlap between this section and other sections.

A recent experiment in this area confirms the value of teaching the perceptual aspects of listening. Mottola (1970) worked with kindergarten children two sessions a week for twenty-four lessons and demonstrated that the experimental group showed (a) a mean reduction of error score in auditory discrimination, and (b) a phonemes test score that was significantly better than the control group. Other similar investigations are reported elsewhere in this report (Rosner, 1974; Day, 1971).

The value of teaching teachers about listening is also confirmed in recent investigations. McKnight (1972) found that teacher training in listening skills improved their ability to recall essential points from tape recorded excerpts. Lungren (1972) reports that (1) teacher's listening skills can be improved by training; (2) teachers who scored highest on in pre- and post-tests on listening also made better use of student input during classroom discussions; and (3) training in subject matter did not influence a teacher's performance.

Research on teacher's behaviours and strategies to employ is still a developing field of investigation, but one worthy of increasing attention. Miller (1973) emphasises the modelling effect of clear speech patterns for children so that relationships between spoken and written language are exposed, thus avoiding such words as 'pippinear' for 'pretty near'. Keislar and Stern (1969) using lower class children found that instructions to verbalize and the subsequent overt responses have measurable value where there is a direct correspondence between the stimulus and verbal response.

However, the effect of verbal responding was much less clear on complex material. Allison (1971) reports that reinforcement activities utilizing a combination of the language arts produced higher listening scores than those involving no instruction or less involvement. Small group discussion reinforcement condition proved best in which students received listening lessons and tapes followed by student led discussion in three small groups.

Research suggests that apart from inadequate functioning in internal processing there are also inappropriate early learning conditions that influence a child's performance on listening tasks. It is likely that both conditions can be present in some children further compounding their listening difficulty. While both conditions may be remediated to some extent, it appears more likely that listening deficits resulting from inappropriate learning will be more amenable to training.

A cautionary note is still needed in relation to most educational research and this has been made by Stern (in Brotzman, 1968). She comments that improvements from intervention may be a reflection of the child's ability "to respond more appropriately to the examiner's expectations, as a result of reinforcements within the school situation, than any improvement in ability to perform the various tasks," (ibid, p.59).

Identification of Listening Difficulties in New Zealand:

In the New Zealand context the P.A.T. of Listening Comprehension will be a major source for identification of children with listening difficulties. The manual for this test indicates that the P.A.T. of Listening Comprehension is designed to assess attainment in general listening rather than provide a diagnostic function (P.A.T. Listening Comprehension Manual, 1971). Some analysis of difficulties can be made by scoring individually the recall and inferential items and this will give a gross diagnostic picture. This differentiation is unlikely to be of use, except in general terms, to children who are credited with few correct responses.

Additionally the manual suggests an individual and class item analysis in relation to specific skills - memory for specific details, sequences of events, abstracting the main idea and ability to discriminate relevant from irrelevant information. Unfortunately the manual does not give a quick reference guide so that these particular skills can be identified rapidly in relation to an individual's scoring sheet. Furthermore the number of items involving a particular skill is likely to be too small for a reliable judgement to be made of individual weaknesses.

The teacher would therefore need to supplement a child's gross weakness in listening by additional testing and observation. Apart from designing his or her own listening test to confirm a particular weakness the only other standardized measures generally available to a teacher are sub-tests of instruments such as the WISC, Stanford-Binet and Illinois Test of Psycholinguistic Abilities and the like. These tests require trained personnel for valid administration and interpretation and often do not have New Zealand norms, although they are able to give some credence to an intuitive guess of a weakness in listening.

Some assistance in guiding a teacher's observations of children suspected as weak in listening or identified as such by the P.A.T. of Listening Comprehension, can be gained from the following suggestions by Gantt (1970).

Gantt suggests a pupil provides verbal cues that he requires help with his thinking when:

1. he is unable to utter or complete an explanation of a concept.
2. he does not interpret what he has said by defining, illustrating, rephrasing, or giving an example.
3. he repeats irrelevant or disconnected ideas.
4. he cannot supply data to support a statement or position.
5. he is unable to use data in a related or associative situation.
6. he cannot derive logical conclusions or make applications in new situations.

In addition the following checklist may be useful where the listening difficulty is more at the discriminatory perceptual level. It should be noted that the term dyslexia is not under discussion, although this checklist is adapted from material relating to auditory dyslexia.

Confusion with Phonics is indicated when a child:

1. cannot distinguish differences in vowel sounds,
2. does not perceive long vowel sounds,
3. does not perceive short vowel sounds,
4. does not perceive schwa vowel sounds,
5. does not comprehend variant vowel sounds,
6. cannot distinguish differences in consonant sounds,
7. does not perceive differences between similar consonant sounds:

___/B/d/	___/b/ /p/
___/d/ /t/	___/g/ /k/
___/m/ /n/	___/f/ /v/
___/s/ /z/	___/th/ /f/

8. does not identify elements within consonant clusters,
9. cannot interpret diacritical markings,
10. cannot interpret phonetic respellings.

Confusion with Words is indicated when a child:

1. cannot tell when words are alike or different,
2. cannot detect or reproduce rhyming words,
3. gives garbled pronunciation (echolalia),

Confusion with Spelling is indicated when a child:

1. writes very slowly,
2. depends upon mnemonic devices to recall spellings,
3. is not able to apply phonic generalizations when spelling,
4. tends to spell phonetically,
5. breaks consonant clusters when spelling (transposes l and r),
6. confuses sound values of consonant letters:

c for k	f for v
m for n	d for t
s for z	f for th

7. does not perceive sounds of /m/. /n/. /l/. /w/, or /r/,
8. leaves out sound units when writing words (telescopes),
9. adds sound units when writing words (perseverates),
10. does not perceive accent in words,
11. does not perceive vowel sounds within words,
12. does not perceive syllables within words,
13. does not remember variant or unusual spellings,
14. is not able to retain memory stock of basic spelling words,
15. asks speaker to repeat,
16. erases, marks over, crosses out,
17. attempts to hide work while writing.

Reinforcement While Writing or Reading is required when a child:

1. whispers (subvocalizes) while reading silently,
2. whispers (subvocalizes) while writing.

(Jordan, D.R. 1972, pp.44-45).

General characteristics of a receptive language difficulty can be characterized by:

1. lack of understanding of speech,
2. lack of expressive speech,
3. adequate control of muscles used in speech for such acts as chewing or swallowing,
4. discrepancy between intellectual ability and ability to understand spoken language (McGinniss et.al).

Teaching Practices:

1. For some children a slower rate of speech is required for comprehension. In addition the time lapse for the response to auditory discrimination may need to be greater.
2. Reduction of additional auditory information irrelevant to the information of the message may be needed.

3. The reduction of visual cues may be beneficial for some children, but may need to be increased for others by way of gesture, posture and lip movement.
4. Co-operative reading is likely to increase the anticipation of sequential probability in spoken formal language.
5. Increased proximity of the teacher to the listener and the establishment of eye contact may influence the comprehension of spoken verbal material.
6. The use of tape recordings, radio and records. As well as the more obvious use in checking on the understanding of content, tape recordings in particular offer opportunities to anticipate speech in a particular context.
7. Pre-recorded films and video-tapes would appear to be of considerable advantage if a selection of commonly occurring communication events can be presented for discussion and analysis.
8. When a child has demonstrated that he has failed to understand in a listening situation, Gantt (1970) suggests the teacher engage in strategies of questioning to engage in process behaviour:
 - a. Re-phrasing question in order to assist pupil in recognising the basis of his perception of a problem.
 - b. Assisting the child to acquire data to evaluate and make his own judgements.
 - c. Referring children to resources to support, clarify, and supplement his statements.
 - d. Assisting the pupil in analyzing content useful in summarizing and drawing conclusions.
 - e. Leading the pupil to identify more concrete incidences of a concept by suggesting alternatives when he is unable to reply on an abstract level.
 - f. Drawing on pupil's experiences as a source of meanings useful in interpreting unfamiliar situations.

9. There is continuing discussion over the merits of an approach that emphasises discreteness and one that emphasises integration of training in relation to stimulus modes. It is probable that both have a place, but an integrated approach that includes rhythmic muscular sequencing appears to have current favour in the literature. (Frostig and Maslow, 1968); Kallan (1972)).
10. The provision of good listening models by both teacher and pupils may assist in developing suitable interaction behaviours that accompany good listening.

The literature does not often present particular programmes, but usually offers suggestions for activities which are sometimes catalogued by age. Suggestions along these lines are to be found in references elsewhere in this section.

One programme that has been made explicit in the literature has been designed by Kellog (1971). This programme is based on teachers reading aloud a selection of stories or extracts, and given lists of new words and clue words, the following sequence of skills are to be developed over 40 lessons.

<u>Lesson Number</u>	<u>Listening Skills to be Practised</u>
1.	Introduction of the Program - The Importance of Good Listening.
2.	Maintaining Attention Through Oral Presentation.
3-10.	a. Vocabulary Study b. Discovering Main Ideas
11-13.	Making Use of Context Clues
14-19.	a. Recognizing that which is Important and/or Relevant b. Vocabulary Study
20-24.	a. Recognizing that which is Important and Relevant b. Vocabulary Study
25-27.	Differentiating Between Fact and Opinion
28-30.	a. Making Use of Context Clues b. Vocabulary Study
31-35.	a. Recognizing Illustrative Examples b. Vocabulary Study

36-40. Making Logical Inferences.

(Kellog, in S. Duker, 1971,
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FUTURE RESEARCH:

While criticisms of the atomistic nature of research on listening are still of concern, the discussion in the report has indicated yet further emphases, some of which may assist towards cohesiveness and suggest more objective approaches.

1. (a) Developmental trends in listening in relation to the general parameters of psychological research - intellectual, social, emotional, and physical development, together with clarification of listening development in relation to the acquisition of other language skills.
 (b) In particular the measurement of the receptive language ability of infants and toddlers needs further attention. The possibilities of identifying the language cues involved in responses could be less complex at this level.
2. Identification and measurement of factors that inhibit and facilitate listening development. A specification of the learning conditions that facilitate listening in children not suspected of deficits resulting from damage to the nervous system.
3. (a) Identification and systematic measurement of 'good' listeners in terms of what such people can do with auditory information. An exercise such as this is likely to require a theoretical discussion and examination of criteria.
 (b) Similarly with 'poor' listeners.
4. Systematic observation of parent and teacher behaviours in relation to 'good' and 'poor' listeners needs to be further explored.
5. Analysis of parent and teacher verbal behaviours and the use of these in the teaching of listening and in the teaching of teachers of listening. Some of the work in the pre-school intervention programmes is clearly related to this, but not usually identified in terms of listening.

6. The use of 'real life' situations using audio-visual aids to assist in listening instruction. These situations need to be analyzed in terms of teaching and learning strategies, verbal and visual cues, emotional context and reactions, pupil-teacher expectations, and general content.
7. A thorough investigation into the effects of questioning in relation to listening in particular contexts.
8. The value of behaviour modification techniques using reinforcement and modelling procedures in relation to listening behaviours needs to be further explored.
9. There is a need to continue replication studies and, in particular, to measure the long term effects of instruction in listening.

CONCLUDING STATEMENT:

A variety of research has been conducted under the title 'listening' which has led to a lack of integration in the field. Allied research in areas such as attention have not usually been related specifically to listening. The risk of increasing the atomistic nature of research in listening remains high unless an adequate integrative framework can be developed.

Valuable research data has been produced concerning attention, the perceptual cues involved in listening, and the timing, sequencing and rate of reception and expression. A sound base in this area is an important pre-requisite to research in general listening. There continues to be a questionable assumed isomorphism between experiments involving pure tones, discrimination of single sounds and paired words, with normal speech.

Criticisms have also been directed at the construction of tests and the proliferation of skills. The construction of tests using formal written language with compressed information content and different people presenting the tests has been seriously questioned. The emphasis on skills has produced behavioural responses to the content of stimulus material, but at the risk of developing skills as ends in themselves.

There will continue to be a place for experiments of a discrete nature involving word and sound discriminations and simple messages, as well as for experiments involving listening to formal language. It seems desirable that at least an equivalent amount of attention should be given to experiments involving common communication events, e.g. job interviews, political interviews, and telephone conversations. The information content is less compressed and research may be directed towards an analysis of the people, situation and language. In fact the total language context, not just the information content, becomes the area of concern. It may well be demonstrated that there are general listening skills that can be developed along with specific skills that a listener would call on in particular situations.

Certainly it is essential for investigators to go beyond literal comprehension and accommodate to the predictable and unpredictable features of a listening situation, particularly the emotional content.

In addition the use of reinforcement and modelling procedures could be more systematically integrated with other research into listening.

This report has given support for the teaching of listening and the development of systematic programmes of instruction. At the same time there has been the implication that there is a need to develop listening programmes in relation to speaking as well as reading.

The importance of re-thinking and duplicating research has become an important priority. The value of particular listening programmes has not been sufficiently demonstrated in terms of long term effect. At the present time there are inadequate assessment procedures and programmes of instruction with which teachers could plan and execute successful listening experiences for good and poor listeners.

The integration of research work in foreign language learning and music with listening has not been fully investigated. Baseline concepts that emerge from such an investigation would assist in the construction of a general theory of listening.

Listening has been discussed, discarded, neglected and promoted in the literature reviewed. Many researchers have shown passing interest and moved to other areas or towards more discrete experiments that are less open to criticisms of design. Few have stayed with the field and those that have continue to comment that research is often lacking in good design, replication, integration, imagination and sound theoretical base. Intuition together with some rational grounds has assisted a growing momentum to elevate the status of listening. The need for an adequate theoretical framework continues to be the most pressing concern.

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