DOCUMENT RESUME

ED 125 255   FL 007 482

AUTHOR   Zimin, Susan
TITLE   Is There Any Meaning in Language Acquisition? Working
                Papers on Bilingualism, No. 6.
INSTITUTION   Ontario Inst. for Studies in Education, Toronto.
                Bilingual Education Project.
PUB DATE   May 75
NOTE   24p.; For related documents, see FL 007 480-484
AVAILABLE FROM Bilingual Education Project, The Ontario Institute
                for Studies in Education, 252 Bloor St. West,
                Toronto, Ontario, Canada M5S 1V6 (as long as supply
                lasts)

EDRS PRICE   MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS   Cognitive Development; *Language Development;
                Language Instruction; *Language Research; Learning
                Characteristics; Learning Processes; *Learning
                Theories; *Psycholinguistics; *Second Language
                Learning; *Semantics

ABSTRACT
        In this paper two questions are raised: (1) Is there
any meaning to current research? (2) Is meaning important to the
language acquisition process? It is necessary to explore the nature
of research in general to evaluate what kind of research we are
doing. This leads us to consider next the content of research on
human learning and on the acquisition of language in particular.
Meaning is felt to be essential to any explanation of the process of
language acquisition. (Author)

used to make sure that they are both postulates of a clear
conceptualization of the subject, i.e. a tentative but clear
theory, and illuminators of that theory. I do not think that
we have found yet a good conceptualization of the language
learner. Some of our researchers try to knock down the
strawman of earlier paradigms without having anything to take
its place, such as the "interference" versus "creative
construction" debate (Dulay and Burt 1974). The reason the
latter cannot replace the former is because research cannot
be done across paradigms (Kuhn 1970). You cannot disprove
conceptualization of a complex subject, you can only find a
better one (Kuhn 1970). While it may be advantageous for the
field of endeavor to contain many different viewpoints or
theories (Feyerabend 1975), it is doubtful if the researcher
who tries to look at something from alternative viewpoints
at the same time has anything meaningful to say at all.
Research that mixes paradigms is, I believe, a-theoretical.
The observation that so much of this is going on today in
second language acquisition research would lead us to believe
that this field is very much at a pre-paradigmatic stage of
development and while it continues to be like this, the
progress required of normal research is virtually impossible
(Kuhn 1970). While I am sure that most researchers agree that
we are indeed waiting the discovery of a promising paradigm,
few are prepared to give sufficient time, energy, and thought
to its development. Too often it is assumed that ad-hoc data

7

1. Introduction

The question raised by the title of this paper has itself two levels of meaning! One question is: Is there any meaning to the kind of research results that have been obtained so far? And the second is: Does the process of language acquisition itself require that meaning play a part? In other words, I am concerned both about the ways language acquisition has been researched and about the content of this research in terms of what we know and believe about the human learner.

2. The Nature of Research

Assessment of research involves assumptions about the nature of knowledge. Assumptions exist whether one is a philosopher, an educator or a researcher. It is important to clarify what are the assumptions underlying our approaches, our methods, our techniques and our"facts". The facts of which our knowledge consists are relative, that is, they are dependent on our perceptions, which themselves are closely linked to our prior knowledge and the framework from within which we view the world. So it is that the findings that emerge from regular research are to a very great extent determined by the facts we choose to look for. The kinds of facts we look for are determined by the wider context of our proposed theories and our assumptions concerning the nature of the object under observation. I am afraid that many

researchers tend to forget the rather arbitrary nature of their work and they often assume that they have grasped a bit of true reality. However, the discovery of an external reality, if it exists at all, is not the purpose of research. Research and the kind of knowledge it constructs has its value in the way it organizes and structures our perceived world. A good conceptualization of our world is one which enables us to make decisions of procedure in the kinds of activities we wish to engage in, whether it be teaching or flying to Mars. Therefore in research the findings should be continually critiqued to see if they do indeed add to our understanding of the subject we wish to study.

In the research on language acquisition our understanding of the language learner should be a main focus of attention. However, much research time is spent in taxonomic kind of endeavours. For example, different kinds of linguistic utterances are identified and labelled, and deviances from the standard linguistic model are similarly labelled. Labels, such as "overgeneralization" are not enough to describe the process of language acquisition. To describe process, a process model is required. Moreover, if the kinds of behaviors identified are not explicitly related to assumptions, theories and a conceptualization of the human learner, they are meaningless. Simply, because there are no facts that speak for themselves, more of our research time has to be given to theory construction as well as data collection. The terms we use have to be more than classifications of

collected phenomena if they are to serve functional purposes. To serve a functional purpose a classification must be a concept, that is, a category that is independent (no other term can describe the objects it describes) and powerful in that it gives meaning and understanding to our perception of the objects it describes. An example of a term used in language acquisition as a concept which is little more than a label, in my opinion, is the term "overgeneralization". This term has been used to describe different kinds of phenomena, from calling every man "daddy" to the use of --ed past marker morpheme on irregular verbs like "wented". Another term "analogy" has been used to describe the same kinds of data. The same kinds of data have been described by cognitive psychologists, e.g. Werner and Kaplan (1964), as the learner's lack of differentiation. The term "overgeneralization" seems to have very little power and the wider the range of data to which it is applied, the more apparent this becomes. "Over-generalization" is a term that derives, moreover, from two conflicting views of the learner, the Associationist paradigm and the Content paradigm (Reber 1973), and so it is not even helpful in shedding light on our understanding of the human learner. However, it could be if it were clarified as a concept which would entail a clearer statement of theory and ensuing assumptions.

What is often overlooked in current research on language acquisition is the distinction between our explicit statements of belief and the implicit ones that derive from our

use of certain terms and methods. Our explicit statements
of belief have also been termed our "reconstructed logic"
(Kaplan 1964) and our "thematic concepts" (Giorgi 1970).
Kuhn (1970), however, has used his concept of "paradigm"
for both kinds of statements(Kuhn 1970:175); this may be the
reason why so many researchers confuse the two through lack
of conceptual clarification. From such research a confused
and paradoxical message can result. For example, it is very
common in the research on second language acquisition to
find such statements as is found in Hatch (1974). She states
her explicit belief that language learning is rule governed
(the Content paradigm). She also states that the sequence
of structures is not acquired in the same order nor in the
same manner by the forty subjects studied. To explain the
variability she draws on the Associationist paradigm with her
postulation of frequency in the input language and interfer-
ence of the native language as explanatory universals of the
phenomena observed. And at the end she says that other factors
(outside both the Associationist and Content paradigms) must
be studied, factors like semantic content, function and the
subject's personality. What remains after such an analysis
is not clarification but a feeling of hopelessness. If all is
relevant, how can it be researched? The trouble is, I think,
that the data has been approached in a taxonomic manner--"we
will call this x and this y"-- rather than a conceptual one.
For the latter, one needs to critically appraise the concepts

6

used to make sure that they are both postulates of a clear
conceptualization of the subject, i.e. a tentative but clear
theory, and illuminators of that theory. I do not think that
we have found yet a good conceptualization of the language
learner. Some of our researchers try to knock down the
strawman of earlier paradigms without having anything to take
its place, such as the "interference" versus "creative
construction" debate (Dulay and Burt 1974). The reason the
latter cannot replace the former is because research cannot
be done across paradigms (Kuhn 1970). You cannot disprove
conceptualization of a complex subject, you can only find a
better one (Kuhn 1970). While it may be advantageous for the
field of endeavor to contain many different viewpoints or
theories (Feyerabend 1975), it is doubtful if the researcher
who tries to look at something from alternative viewpoints
at the same time has anything meaningful to say at all.
Research that mixes paradigms is, I believe, a-theoretical.
The observation that so much of this is going on today in
second language acquisition research would lead us to believe
that this field is very much at a pre-paradigmatic stage of
development and while it continues to be like this, the
progress required of normal research is virtually impossible
(Kuhn 1970). While I am sure that most researchers agree that
we are indeed waiting the discovery of a promising paradigm,
few are prepared to give sufficient time, energy, and thought
to its development. Too often it is assumed that ad-hoc data

gathering will lead to brilliant insights, ignoring an ancient insight that one usually finds what one looks for. So, the first step in bringing meaning back into our research is to start being conceptually clear through careful analysis of the constructs we use. After that decision, one must decide what are the constructs and theory which accurately reflect our conceptualization of the human learner.

In doing this, we come to a very basic issue in psychology. Since the inception of psychology as a science of consciousness distinct from philosophy, the field and its researchers have tended to ape the current methods of the natural sciences. The emphasis has always been on measureability although there have always been a few dissenters, who have stated that the techniques developed by the natural sciences even when modified may not be adequate to the task of dealing with such phenomena as consciousness, experience, feelings, humor, meanings, misunderstandings and so on (Giorgi 1970). Psychology, in its overriding aim to be a natural science, tended to ignore such phenomena and instead deal with such phenomena that could be quantified. So it was, that measurement was considered more important than existence. What could not be measured did not exist (Giorgi 1970). This being so, we can understand better why holistic techniques or global measures of human behavior, while being proposed by various first rate thinkers (e.g. Vygotsky 1962 and Werner and Kaplan 1964) have not been seriously developed. The method

8

of the natural sciences is characterized by component analysis
and reduction to measurables, a search for elemental processes
and isolated stimuli in manipulable conditions. But man as
a "whole person" (Miles 1959) is more than an object.
The meaningfulness of a phenomenon in man cannot be determined
by simple measurement and "objective" techniques. Subjective
phenomena can be objective in a very real sense (Scriven 1971).
The development of techniques which can measure the complex
interaction pattern which is man and which can adequately
handle the person's own intentionality or autonomy in any
behavior pattern is of primary importance in psychology today.
Giorgi (1970) calls it the development of a human pscyhology.
An important and quite general trend in many other well-estab-
lished psychologists was noted by Koch (1959) toward an
increasing recognition of the role of direct experiential
analysis in psychological science. Koch also notes the trend
away from prescribing the hypothetico-deductive model of theor-
etical research toward seeking methods suited to psychology's
own indigenous problems. Language, an essence of man's
humanness, should play a central role in any human psychology,
as forseen by Vygotsky (1962). Thus, the study of language
acquisition cannot in any meaningful sense ignore the trends
in psychology. And these trends are moving away from an
emphasis on method to an emphasis on content.

3. The Content of Research on Language Acquisition

While language itself may be considered fruitfully as a

logical system, it is doubtful that a logical system can benefit, or even represent a dynamic process like language acquisition. Attempts to impose a static model, such as transformational generative grammar, or even a series of static stages, have not been outstandingly or even moderately successful in conceptualizing the process of language acquisition for us. Conceiving the learner as hypothesizing and rule forming about language structure cannot be borne out by the wealth of speech collected. We need, it seems, to find a conceptualization that truly is process-oriented.

Much effort has been spent in trying to find universals of language acquisition before we have clearly articulated of what such universals should consist. A content paradigm based on transformational generative grammar has led us to seek universals in terms of the syntactic structures produced (Hatch 1974; Corder 1973). I do not find any evidence of success in this approach as witnessed in the many error analyses that have been done. Hatch (1974) for example found that her data could not be accurately described by the notion of a learner who hypothesizes and systematically formulates linguistic rules so she postulates that some learners only are rule-formers while others are data-gatherers. What we need is a coherent theory which will include a notion of universals, important to a theory's generability, but not necessarily consisting of syntactic structures. The theory must be neither too overcomprehensive nor too reduced if it

10

is to illuminate in any meaningful manner the complexities
of language acquisition.

I am afraid that the whole approach to language acquisi-
tion has been far too simplistic. For example, much effort has
gone into a careful description of the setting, a priori
assuming that whether language is learned in a so-called
"natural" setting or whether in a classroom there will be a
significant difference in the process. This assumption is
based I suppose on the paradigm of the natural sciences where
for instance plants can be grown in natural surroundings and
in a laboratory under more controlled conditions. However,
all learning takes place through some human interaction and
it seems to me that the types of interaction and their signi-
ficance for the learner are the important variables rather
than the rather artificial postulation of yet another dich-
otomy. To distinguish between natural and taught language
situations is artificial because our focus is on learning,
and presumably language is always learned naturally (if not,
it is not learned). Language learning has to be an applied
science, rather than a pure or natural one like biology,
because human beings in their complexities learn in a complex
interaction situation of themselves and their enviornment.
A theory of learning, and also of language learning will have
to develop its own science. To borrow logical systems of
analysis (say, from linguistic science) for a variable
dynamic process is likely to be a barren procedure. Moreover,

such applications to teaching situations that are made are
questionable. What we need are constructs based on the real
learning situation if teaching procedures are to be derived
from them.

If we look at the research that has been done, we see
that the analyses assume an autonomy for each level of the
grammar, based on Chomsky's (1965) argument for the autonomy
of syntax. That is, transformational generative grammar
assumes that phonology, syntax, semantics and so on are
essentially independent systems of rules, and only in special
circumstances is there interdependence. That the research
done in language acquisition makes these assumptions is clear
from the fact that one aspect of language is studied as if it
were independent of other aspects. This approach to language
has even been carried over into foreign language teaching and
testing, where the various components of the grammar--phonemes,
vocabulary, morophology and syntax--are both taught and tested
independently. In the TOEFL examination, subjects receive
a language score based on the aggregate of the independent,
so-called discrete, tests. There has been some opposition
to this procedure of testing and so-called integrative tests
like dictation and cloze procedures have been proposed
(Oller 1973). We need to understand why it is that integrative
tests appear to have higher validity than the discrete, separate
component tests. It seems that what is needed to characterize
language, is not knowledge of the grammar, but an underlying
ability that incorporates all of the abstract levels of language.

12

Cloze and dictation procedures seem to rely on a general comprehension ability as well as a kind of expectancy factor, based on one's experience with the language. For the language user integrative tests are doubtlessly more meaningful. The language user has to understand and in a sense predict the _message_ of the utterances. Any research that assumes that syntax is somehow representative of one's ability in language is ignoring the role of meaning, personal, contextual and social, that occurs in any real linguistic utterance. And this is of course my most condemning criticism of much of the current research.

No one denies that people do develop an abstract knowledge about their linguistic system. Abstraction, generalization and systematizing are normal human processes. But the question is whether the developing use of language is a process that is adequately captured by these processes alone. Language use involves more than the use of a system of grammatical rules. The real role that language plays in the life of the individual has been largely overlooked or pushed under the rug.

4. The Role of Meaning in Language Acquisition

The functions language performs for the individual may be the crucial factors in language development. Of course some theoretical and practical attention has been given to language functions under the labels of speech acts, communicative competence, discourse analysis and so on. Some research efforts have moved in this direction. However, at the present time most research in the area of second language acquisition has

retained the notion of language as an abstract, logical system.
Even in a very promising attempt to describe the process of
meaningful verbal learning, Ausubel (1968) is unable to suggest
research procedures that will get at the nature of the process
he describes. Instead he falls back on hypothetico-deductive
research designs which are only capable of abstracting and
depersonalizing the very factor, the learning process, that
we need to understand in a different way.

Perhaps, a very clear distinction between the learner's
metalinguistic knowledge, i.e. his abstracted knowledge about
the language, and his language use, has to be made and kept
throughout the research (Corder,1974). This heuristic should,
at the least, lead us to develop techniques for studying the
process of language use as a process, (why what is said to
whom), rather than as a logical system.

The different role that meaning plays in the logical
codified system and in the psychological intentional system also
needs to be identified. As Vygotsky (1962) pointed out,
word-meanings are the link between the indivdiual's intent-
ional meanings (his thoughts) and the society's codified
set meanings. I think that at this stage we are not able to
be m·`· precise about meaning than to state that meanings are
present in every utterance. The Given-New Strategy proposed
by Clark and Haviland (In press), explains the Given as the
set meanings of the various levels of the grammar, including
the pragmatic and cultural ones, while the New incorporates

14

the given with the situational intentional context in which
the individual finds himself, thus producing a creative
construction. (This is the only meaningful interpretation
of creative construction in language acquisition that I can
think of.) We can postulate, as did Vygotsky and Ausubel,
that meanings are what is stored in the brain, they are the
content of cognitive and affective structures and that man
has at his disposal many means, the chief of which is language,
to express and communicate these meanings. A lot of work will
be needed to define the concept of meaning in language and to
refine our understanding of it. One of the ways to do this
will be the development of a human learning theory.

5. Characterizing a Learning Theory for Human Beings

A learning theory presumably has to bridge the gap
between the logical and the psychological. It has to deal
with wholes of complex skills, whose sum of parts is less than
the whole (Pappert 1974). Researchers in the field of
language acquisition should take particular note of this point.
There are many skills, for example bicycle-riding, juggling,
and, I believe, speaking, which loose their essence when
analyzed into separate components. A description of the whole
skill is not possible through adding the component descriptions.
Such skills require holistic conceptual analysis. The essence
of the skill is often captured in a single unifying concept.
For example, in order to ride a bicycle one must psychologically

stop trying to balance and allow one's body to blend into the bicycle's center of gravity. In language learning we may find that a similar letting-go of conscious effort is necessary. In everyday conversation we do not concentrate on the rules of construction but on the message we wish to convey. Werner and Kaplan (1964), as well as Vygotsky (1962), have given us examples of holistic approaches to the study of language acquisition. It is a shame that these approaches have not been developed further by other researchers.

To capture the essence of language in our descriptions of its acquisition process we first need to make explicit the basic assumptions we feel are necessary to a theory of language learning.

6. Necessary Assumptions about the Nature of Language and the Learner

Assumptions concerning the nature of language, must, I believe, include the following:

1. that language is always a dynamic process. Even competent native speakers are continually developing their word power and their ability to express themselves linguistically.

2. that language plays a unique role for man. It is not merely the link between thought and word or word and object, but rather it captures reality (Brockelman 1965); it gives reality to the meanings, both individual and social, we wish to express.

3. that expression and communication are mutually interdependent. We express ourselves when we communicate and we communicate when we express our meanings (Gusdorf 1965). Thus from Gusdorf's existential viewpoint language is the most important basis of man's social being. And when language itself is conceived as the conveyor of meanings rather than a system of syntactic or even pragmatic rules, we can see why learning to express one-self in a foreign language may be more than learning the rules of syntax and communication, i.e. more than linguistic competence. In a psychological derived analysis, the interaction of the learner with his environment becomes a necessary part of the language acquisition process. Thus, one of the major obstacles at present to the search for universals, variability in the rule system, will of course not be considered a problem but an integrated part of the acquisition process, because variability is an artifact of postulating a logical system. Contextual factors which have previously been either reduced by experimental controls or over-emphasized when studied as the independent variable need to be integrated into the learning process itself.

There are also some assumptions that have to be made about the nature of the language learner. These are:

1. that the language learner is autonomous(Krimerman 1972); that is, we must recognize the role of the learner's own intentions and choices in the learning process, and in the kinds of meanings expressed and communicated.

2. that attitudes and feelings are closely interwoven
with cognitive activity in the learning process. Such
attitudes and feelings are not likely to be obtained
through simple attitudinal-motivational scales but need
to be studied as an integrated part of the process. For
studying feelings and learning we will probably have to
look to the gains made in other fields. For example,
Carl Rogers (1959) has summarized for psychotherapy the
basic conditions underwhich a beneficial interaction between
two people can take place. Beneficial is defined by a
mutually desired change in behavior. Not unlike other
behaviorial learning requiring change, learning a
second language is apparently fraught with identity
conflict and anxiety--mere intellectualizing about the
system to be learned seems hardly an adequate teaching
technique, yet nowadays it is commonly employed. From
the psychotherapy branch of psychology we can also in
addition to individual needs and abilities learn much
about learning in groups. Mathew Miles (1959) in his
book Learning to Work In Groups sets forth a program
which provides the learner with a situation in which his
"ideas, values, emotions, attitudes, feelings, and
concrete behaviors are involved in a training technique
so that experimenting with different ways of behavior is
safe and desirable." Compared to a psychotherapeutic
group it is the social self rather than the individual self
that is involved. That is, not the inner reasons for such

18

and such a behavior but the understanding of how he
relates to others and how he can become more skillful
is what is emphasized.   If any of you think that such
a proposal is irrelevant to the second language classroom,
I refer you to the successful studies reported by
Curran (1972). It seems to me that at the least this
approach seems promising and deserves some attention.
It is also possible that the insights gained through
understanding group learning could have explanatory
value for first language acquisition as well as second.
As presumably both groups of learners, being human beings,
are affected by similar desires for approval and success.
3. that central to learning is the meaningfulness that
any structure has for the learner. The very nature of
cognitive structure can be described on this) basis (see
Ausubel 1968). For what we perceive, retain and forget
are all determined by the organization and dynamic
character of cognitive structures. It seems highly
probable that it is meanings of some kind that are absorbed
into these structures, they are the correlations between
object and word, between syntax and sense.... Recall to
mind one's own frequent searches for the right expression
to communicate the meaning which is already there.
I have outlined several assumptions which I feel must be part
of the development of a theory of language acquisition. In
stating them I feel I am stating the obvious and it is a
source of surprise to me that they have been relatively
neglected.

7. Meaning in Language Acquisition Research

Naturally, the first question one wants to ask is, what will the data we collect look like? What are meanings? It seems to me, it would be premature to set up a superstructure or taxonomy of meanings at this stage though this may be an ultimate goal when we understand better the notion of meaning. All we can do is observe a learner, or group of learners, over time and collect observably relevant phenomena. This will consist of both explicit and implicit evidence provided by and for the learner on the following: (1) his desire to learn, (2) his attitudes toward foreign language, (3) his feelings of anxiety, inadequacy, confidence, (4) what he says, when, and to whom and for what purpose, as well as what and why he does not speak. What is important is the way the data is collected. Close observation of the living subject is crucial as is the use of research tools, such as tests, in a critical manner. For the explicit evidence, language tests, interviews and questionnaires can be given but not as the sole means of measurement. The implicit evidence could be obtained through video-taping of the learning session to allow for more thorough observation. One phenomenon that must be described in detail is the feelings and behaviors of the teacher, or the experimenter-interactor. Most research has tended to conveniently overlook the influence of the researcher on the data collected.

Meaning will have to be observed at three different levels:

1. the set meanings of the grammar of the language in its words and their relationships,

2. the meanings of the used speech--when what is said

to whom is /is not appropriate (speech acts),

3. the meanings expressed in a speaking situation, the

intentions and implications of any utterance spoken

in a real speaking situation. This third level of

observation is particularly importnat to our search for

process in language acquisition and it is the area least

developed in terms of theoretical constructs and research

techniques.

8. Conclusion

It is perhaps inappropriate to label this section,
"conclusion" since in actuality it is a "beginning." I am
advocating a marriage between teaching and research, not just
the application of "applied" linguistic research. Such studies
can be both a study of language acquisition and the develop-
ment of methods of teaching language. In this way the research
done on language learning will have direct and viable application
to teaching method--we will be developing an applied science.

Second, we will be observing directly a learning process,
and in seeking to describe process we will have to develop
concepts to capture our insights. The teacher's involvement
would be in the person in the process of learning rather than
the subject matter, and therefore an activation of the student's
potential for behavior change should take place and can be
observed. An experienced teacher has many intuitions about
the learning process and these need to be encouraged to surface,
to be analyzed and developed--out in the class where learning
should be taking place.

REFERENCES

Ausubel, David P. 1968. Educational Psychology: A Cognitive View. Holt, Rinehart & Winston

Bever, T. G. 1970. The integrated study of language behavior. In J. Morton. Biological and Social Factors in Psycholinguistics.

Brandt, L. W. and E. P. Brandt. 1971. The Alliendated psychologist. The Journal of Phenomenological Psychology 2,1, pp. 41-52.

Brockelman, P. 1965. Introduction to Gusdorf's Speaking.

Chomsky, Noam. 1965. Aspects of a Theory of Syntax. MIT Press

Christophersen, Paul.1973. Second language Learning: Myth and Reality. Penguin Education

Clark, E. 1973. How children describe time and order. In Ferguson and Slobin, Studies of Child Language Development Holt, Rineheart & Winston, pp. 585-606.

Clark, H. and S. E. Haviland (In press) Psychological processes of lingusitic explanation. In D. Cohen(ed.) The Nature of Explanation in Linguistics.

Corder, Pit. 1973. Introducing Applied Linguistics.Penguin Education

Corder, Pit.1974. personal communication.

Curran, C. A. 1972. Counseling-Learning: A Whole Person Model for Education. Grune & Straton

Derwing, Bruce L. 1973. Transformational Grammar as a Theory of Language Acquisition

Dulay, H. and M. K. Burt. 1974. Natural sequences in child second language acquisition. Working Papers on Bilingualism, No. 3. OISE, Toronto.

Feyerabend, P. 1975. Philosophy of science 2001. Lecture to the Boston University Philosophy of Science Symposium, March 25.

Giorgi, A. 1970. Psychology as a Human Science; A Phenomenological Approach

Gusdorf, G. 1965. Speaking Northwestern University Press.

Hakuta, K. 1974. A preliminary report on the development of grammatical morphemes in a Japanese girl learning English as a second language. Working papers on Bilingualism, No.3. OISE, Toronto.

Hatch, E. 1974. Second language learning--Universals? Working Papers on Bilingualism, No. 3. OISE, Toronto.

Jakobovits, L. 1970. Prolegomena to a theory of communicative competence. English as a Second Language: Current Issues Vol. 6 Language and the Teacher: A Series in Applied Linguistics. (T.C. Lugton, Ed.)

Kaplan, A. 1964. The Conduct of Inquiry. Chandler Publishing.

Koch, S. 1959. Some trends of Study I (Vol 1-3): Epilogue. Psychology: A Study of a Science McGraw Hill, Vol. 3, P. 729.

Krimerman, L. I. 1973. Autonomy: A new paradigm for research. In Thomas (ed.) NSSE 71st Yearbook: Philosophical Redirections in Educational Research

Kuhn, T. S. 1970. The Structure of Scientific Revolution University of Chicago Press, Chicago

Miles, M. D. 1959. Learning to Work In Groups: A program Guide for Educational Leader

Oller, J. W. Jr. 1973. Discrete point tests versus test of integrative skills. In Oller and Richards (eds.) Focus on the Learner: Pragmatic Perspective for the Language Teacher, pp 186-99.

Pappert, S. 1974. Language /MxxD/ Learning: A New Paradign for educational research. Lecture given to MIT Colloquium on Linguistics, December 6.

Petrice, H. 1972. Theories are tested by observing the facts or are they? NSSE 71st Yearbook

Kvale, Steinar. 1972. The technological paradign of psychological research. Journal of Phenom. Psych. 3,2, pp. 143-159.

Reber, A. 1973. On psycho-linguistic paradigms. Journal of Psycholinguistic Research 2, 4, pp. 289-320.

Rogers, C. R. 1959. A theory of therapy, personality and interpersonal relationships. In Koch, 1959.

Romanyshyn, R. D. 1971. Method and meaning in psychology: The method has been the message. Journal of Phenom. Psych. 2, 1, pp. 93-114.

- 91 -

Scriven, M. 1972. Objectivity and subjectivity in educational research. In Thomas(ed.) NSSE 71st Yearbook.

Vygotsky, L.S. 1962. Thought and Language, MIT Press

Werner, H. and B. Kaplan. 1964. Symbol Formation