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THE EFFECTS OF AMBIGUOUS COMMUNICATIONS ON

NORMAL AND DISTURBED CHILDREN

by

ARNOLD GEORGE MINISH

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ABSTRACT

The double-bind hypothesis suggests that a child can develop schizophrenia or "disturbed" behaviour patterns if he is subjected to an excess of contradictory communications from his parents and others. In education, it has long been felt that sarcasm and contradictions have a debilitating effect on young children, but very little in the way of concrete research has been undertaken in the area. As a consequence, the present study was directed at examining whether children react negatively to contradictory speech samples, and whether such contradictions at home and school could in fact be related to disturbance in childhood.

A female actess was asked to record a total of twenty-four speech samples. Twelve of these samples were consistent, in the sense that the tone of voice of the actress agreed with the verbal content of the message. On the other hand, the remaining twelve samples were ambiguous, in that the tone contradicted the words spoken. The consistent and ambiguous samples were all arranged in random order on a single tape and played to twelve-year-old "normal" and "disturbed" children. More specifically, twenty "disturbed" and twenty "normal" boys served as subjects. The "disturbed" youngsters had been referred by school authorities for behavioural and emotional difficulties, while the "normal" subjects had never previously been referred for any reason.

When the children were asked to judge the communications as being either positive, negative, or neutral, it was evident that both "normal"

and disturbed" youngsters interpreted the ambiguous stimuli more neg-
atively than the consistent samples. In other words, it appeared that
all children disliked the ambiguous speech samples and viewed them
negatively. Further, there was a clear listener effect, such that the
"disturbed" subjects interpreted the double-bind, ambiguous speech
samples significantly more negatively than the "normal" children. That
is, the "disturbed" subjects seemed to find ambiguous speech more up-
setting and anxiety arousing than did the "normals," suggesting the
possibility that ambiguous communication patterns may have played a
role in the causation of the "disturbance" in the first place.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

I. BACKGROUND TO THE STUDY

More than two decades ago, Bateson, Jackson, Haley, and Weakland
(1956) proposed the double-bind hypothesis, a controversial and widely
discussed theory of modern psychology. Initially, Bateson and his co-
workers originated the double-bind hypothesis in an attempt to account
specifically for the cause of schizophrenia; speculating that it was the
result of stress caused by contradictory communications a child receives
from his parents and others.

According to the Bateson group, the very essence of the double-bind
hypothesis is that the contradictory nature of the communication supposedly
takes place on two levels: verbal and nonverbal. To illustrate, a
teacher may tell a child verbally that she likes him, but communicate
exactly the opposite nonverbally (i.e., through actions, gestures,
facial expression, tone of voice, etc.). In the original formulation,
the necessary ingredients for a double-bind situation were considered
to be:

> "(1) Two or more people ... (2) Repeated experiences
> ... (3) A primary negative injunction ... (4) A
> secondary injunction conflicting with the first at a
> more abstract level ... (5) A tertiary negative in-
> junction prohibiting escape from the field ... (6)
> Finally, the complete set of ingredients is no longer
> necessary when the victim has learned to perceive his
> universe in double-bind patterns." (Bateson, Jackson,
> Haley, and Weakland, 1956, p. 253-254.)

Early theoretical speculation concerning the double-bind theory

was confusing and early research not encouraging, to say the least. Even now, it is impossible to say with any degree of certainty that double-bind communications are central in the causation of schizophrenia. The double-bind theory becomes valuable, however, once it is softened, modified, and not tied specifically to schizophrenia. Recent, less restricted work (chiefly that of the Bugental group) at the University of California is beginning to support the double-bind theory and show that contradictory communication seems to play a role in overall "disturbance" in childhood.

II. STATEMENT OF THE PROBLEM

Importance to Educational Administration

The double-bind theory certainly has important ramifications for education, and it is a wonder that the theory hasn't been totally absorbed into the mainstream of educational research long ago. To reiterate, there is a widespread belief among certain educators that sarcastic, inconsistent, double-bind communications have an extremely negative effect on students, especially the younger ones. Indeed, contradictory teaching style is thought to create a threatening classroom atmosphere and manifold discipline problems (Wood, 1976), since children faced with inconsistent messages never know exactly what is expected of them or how to behave.

If the proposition contradictory messages from teachers can indeed "harm" youngsters, has substance, there is a clear need for educators to examine this issue in in more depth. Although the double-bind theory

is a major concept in clinical psychology, educators for the most part
haven't really adopted the theory. The study at hand represents an
attempt to make educators aware of the problems associated with double-
bind communication, and to make a contribution to the literature. To be
useful in education, double-bind research must have implications for
teachers and their behaviour in the classroom.

Clearly, if ambiguity truly affects students, most educators in a
school division should be aware of the fact. The School Board and
Superintendent's Department, if they show an awareness and a feeling for
the theory, could take a leadership role, especially in terms of dis-
seminating information (via inservices, distributing literature, or
so on). Principals would likely benefit in a practical sense from
familiarity with the concept, for it could add an important dimension
to the hiring and evaluation of staff. And certainly, if teachers
themselves became more aware of the importance or being consistent in
class, the children would probably benefit.

Unfortunately, while the "feeling" that ambiguous messages have a
negative effect on students is quite pervasive in education today, little
in the way of concrete examination of the issue has been accomplished.
Administrators faced with the task of dealing with negative, contradictory
teachers still have very little to go on. That is, although administrators
may instinctively feel that such a contradictory teaching style is bad
for youngsters, they have little factual basis to support their feeling
about the matter. In essence, the basic question about the double-bind
theory remains unanswered; we still cannot be certain that children in

fact find contradictory, ambiguous messages negative or confusing.

Normal and Disturbed Children

In an attempt to deal with this issue, consistent and ambiguous messages were played to "normal" and "disturbed" children in the present study. In terms of subject selection, "disturbed" children had been referred for emotional and behavioural problems, whereas the "normals" had never been previously referred. The subjects served as their own controls in the sense that they all heard both the twelve consistent speech samples (wherein the tone of voice of the speaker agreed with the verbal content of the message) and the twelve ambiguous samples (wherein the tone contradicted the words spoken).

Hypothesis

Although some investigators have attempted to measure how children feel about contradictory messages, they avoided asking them point blank (which may be the best way to determine how children react to contradictions). In this research, then, the consistent and ambiguous messages were played to the children, and a negativity score compiled for each subject simply by asking him whether he felt positive, negative, or neutral about each message. Keeping in mind the basic rationale behind the double-bind theory (and the literature discussed in Chapter II), it was hypothesized that: (1) children in general would perceive ambiguous messages as unpleasant and react negatively to them.

As well, very few studies make any meaningful comparison between normal and disturbed children. Such a comparison is long overdue,

especially since the work of recent researchers (see Chapter II) points to an inextricable link between contradiction and disturbance. The present study, then, will compare the responses of disturbed children to those of normal children. Logically, if contradictory communication is involved in the cause of disturbance, disturbed children should react more negatively to inconsistent messages than normals. Assuming the double-bind theory to have some substance and to be truly linked to disturbance, it was also hypothesized that: (2) disturbed children faced with contradictory messages would emit more negative responses than normal children.

Limitations

Of course, there are some limitations to this type of research. In the first place, only words and tone of voice are considered, and it is obvious that nonverbal visual cues (e.g., facial expression, gestures, bodily contact, etc.) can play a part in ambiguous communication. Nevertheless, even though it's a little restricting looking at speech alone, it has been demonstrated that there is a great deal of information contained in tone and words and that contradictions can be conveyed (without visual cues) by verbal and tonal signals alone (Fujimoto, 1972; Mehrabian & Wiener, 1967).

More importantly, it has been assumed here that the double-bind should not be tied directly to schizophrenia. Although they may be regarded as taking liberties and violating the basic notions upon which the theory is based, it is felt that the hypothesis becomes more valuable

when viewed from a broader perspective. Even though the original formulation contended that ambiguous messages cause schizophrenia, this has not really been supported by research (Schuham, 1967). If the double-bind hypothesis is softened and extended as in the present research (i.e., moving from involvement in schizophrenia per se to "disturbance" in general), it becomes less restrictive, broader, and more valuable. There may be a loss of theoretical precision, but the whole theory becomes decidedly more plausible and pragmatic.

III. SUMMARY

In summary, although experienced educators often feel that an excess of contradictory communications has an extremely negative effect on youngsters, there is currently little empirical evidence to support this belief. If indeed double-bind messages affect children, this will have a number of important implications for the training, hiring, and evaluation of teaching staff. The present study, then, represents an attempt to test the effect of ambiguous stimuli on "normal" and "disturbed" children.

Two hypothesis were developed to provide direction for the study: (1) children will react negatively to ambiguous messages; and (2) disturbed children will react more negatively than normal children to ambiguous messages.

IV.   ORGANIZATION OF THE THESIS

In Chapter II, preliminary consideration will be given to presenting a theoretical rationale for this type of investigation. Research will be reviewed summarizing early and more recent developments in the field using both adults and children as subjects. A complete presentation of the research design itself will follow in the methodology in Chapter III, and Chapter IV will summarize the analysis and findings in detail. Finally, in Chapter V, the findings, conclusions, and implications of the study will be discussed, along with its importance for education and ideas for future research.

CHAPTER II

THE DOUBLE-BIND HYPOTHESIS: A REVIEW OF THE LITERATURE

Although the initial formulation of the double-bind by Bateson, Jackson, Haley, and Weakland was proposed in 1956, it was later refined and extended. For example, in a paper Weakland (1960) stated that an individual is placed in a double-bind situation when: (1) he is faced with a communication involving two related, but incongruent messages, (2) a response to the communication is necessary; it can't be continually avoided or ignored, (3) the contradictions in the message are denied or concealed in some manner. By way of example, an attempt by a child to point out the conflicting nature of the message usually results in further contradiction with the parents denying any incongruity.

With respect to the family level, Bateson and his colleagues felt that the interactions between a potentially schizophrenic child and his parents (especially the mother) contain many contradictions and double-binds that confuse the child. The schizophrenic family unit itself may be a basic contradiction, in that it is often disharmonious yet somehow holding together (Weakland, 1960). In any case, over time the hidden contradictions in communications eventually result in an inability to discriminate among contradictory messages. Prolonged inconsistency is thought to become overwhelming, causing withdrawal, disorientation, defensive probing for hidden meanings, and eventually schizophrenic behaviour patterns on the part of the child.

In essence, the double-bind theory is a subjective concept.

Clinicians have long adhered to the notion that double-bind communications play a major role in emotional and mental disturbance, and indeed, the "feeling" that double-bind situations are important was probably the major factor accounting for the survival of the hypothesis in the face of widespread criticism.

Examples of double-bind situations are typically anecdotal in nature. One example is a mother telling her child that, "You can go out and play if you want to," in a tone that belies the words and implies he had better not. This example, wherein the verbal and nonverbal aspects of the message are clearly contradictory, highlights the fact that the communicator doesn't necessarily have to be visible to send an incongruent message.

Theoretical Deficiencies

Unfortunately, although there were great hopes for the double-bind hypothesis after the Bateson group's paper first appeared, the theory seemed to generate too much research too quickly. In the original formulation, the double-bind theory was a statement about a two-person interaction. The concept began to extend rapidly, such that Weakland (1960) used it to describe more complex (family) systems. Other investigators began researching the theory but the results fell short of theoretical and empirical expectations.

Suddenly, the double-bind theory was being used to account for delinquent behaviour (Ferreira, 1960) and the induction of hypnotic states (Haley, 1955), as well as well as schizophrenia. The split

double-bind hypothesis (Ferreira, 1960) and the quadruple bind hypothesis (Lu, 1962) were proposed as variations on the original theme. Soon the double-bind concept was being applied to the enjoyment of play (Haley, 1955), evolutionary theory (Bateson, 1960), written communication (Weakland and Fry, 1962), patient-therapist interaction in therapy (Haley, 1963), and humour (Zuk, 1964). Watzlawick (1964) took the hypothesis to an even more abstract level by stating that the double-bind could occur intrapersonally in an individual's feelings, thoughts, and perceptions.

Obviously, different investigators had widely differing notions as to what the double-bind theory was. Without a precise working definition, various vague descriptions of the concept were developed, and the area in general became embroiled in a mass of theoretical confusion. Terms such as "a special ambivalence" (Arieti, 1960), "a kind of inconsistency" (Watzlawick, 1964), and a "conflict situation" (Mishler and Waxler, 1965) were used in an attempt to describe double-bind situations, but their very vagueness prevented their becoming useful in an experimental sense.

All in all, double-bind theory was plagued by contradictions and confusions. It was uncertain whether the double-bind could occur only between two persons, or if it could develop in multiple interpersonal interactions. By suggesting that contradictory situations can be caused by written communiques, Weakland and Fry (1962) questioned the very need for interpersonal interaction in eliciting the double-bind responses. And, of course, Watzlawick's (1964) belief that the double-bind situation could occur in a person's thoughts also implied that face-

to-face interaction may not be required. Also, as Schuham (1967) notes in his classic review, there seems to be a great deal of confusion regarding the levels (or channels, dimensions, or whatever) of binding messages. For example, experimenters have dichotomized the two levels in contradictory communications in many and varied ways and given them many labels, including verbal-nonverbal, communication-metacommunication, content-relationship, abstract-concrete, particular-contextual, and literal-metaphorical.

There are other areas of theoretical controversy that should be mentioned briefly as well (Schuham, 1967). One centres upon whether or not the receiver must respond to the binder's message. Although Weakland (1960) feels that an individual has no option but to respond to a double-bind situation, his view that silence is a deliberate ploy on the part of the receiver is ambiguous and confusing. A related area of controversy is whether or not it is necessary for an individual to be aware that he is receiving contradictory communications in order that he be affected by them. It is uncertain whether a person can be affected by a double-bind communication he doesn't "consciously" perceive.

Yet another question regards the receiver withdrawing from the double-bind situation. Bateson and his colleagues feel that the receiver is always held in the double-bind situation and prevented from escaping in one way or another. Sluzki, Beavin, Tarnopolsky, and Veron (1967) disagree, however, and state that an injunction prohibiting escape need not always be present. And in his formulation of the split double-bind, Ferreira (1960) postulated that an individual might sometimes leave

or even be forced out of a double-bind situation.

In any case, theoretical criticims of the double-bind are common throughout the literature (Schuham, 1967). Unfortunately, despite re-traction, redefinition, and general weakening of the hypothesis (Bateson, 1960; Haley, 1963; Jackson, 1960; Sluzki, Beavin, Tarnopolsky, and Veron, 1967; Watzlawick, 1963; Watzlawick, Beavin, and Jackson, 1967; Weakland, 1960), the double-bind concept remains very confusing and non-specific.

Empirical Criticisms

Along with the theoretical deficiencies, the double-bind theory ran into serious problems empirically -- it simply was not supported by early studies. Part of the problem resided in the fact that the double-bind theory is extremely difficult to test. Lachenmeyer (1965) attributed this to the fact that it is more of a proposition than a hypothesis. Whatever the reason, however, most research on the double-bind theory is purely descriptive; dealing with anecdotal "evidence," "feelings," therapy sessions, and clinical interviews. Despite its humanistic appeal, such work is often unreliable, subjective, and uncontrolled (Schuham, 1967).

As Schuham (1967) shows, there were very few objective studies carried out on the double-bind theory in the first decade after its proposal, and none of these provided any real support for the hypothesis. Ciotola (1961) hypothesized that schizophrenic psychiatric patients would be more affected than nonschizophrenic patients by a double-bind situation in which discrimination of two tones was made impossible. Contrary to

his hypothesis, however, schizophrenics did not exhibit more tension, greater concreteness, and increased reaction times.

Potash (1965) attempted to simulate the double-bind situation by designing a three choice game. In the relevant choice condition, subjects were given the chance to withdraw from a no reinforcement situation. This withdrawal supposedly represented schizophrenic withdrawal from binding communication. Potash's hypothesis that schizophrenics would emit a disproportionately large number of escape responses was not upheld; they did not react any more than normals to the artificial double-bind situation.

In another study, Ringuette and Kennedy (1966) offered a strong critique of the double-bind hypothesis. They had five groups of subjects try to identify double-bind messages in letters written by parents to their hospitalized schizophrenic and nonschizophrenic offspring. One of the groups of judges consisted of "experts" in the area of the double-bind theory -- professionals involved in originating and developing the hypothesis. Other groups were composed of informed clinicians, uninformed clincians, first-year psychiatric residents, and persons outside of the social sciences. After all groups had evaluated the letters, it was demonstrated that none could distinguish between letters received by schizophrenics and nonschizophrenics. The fact that the so-called "experts" failed to identify double-binds reliably was particularly damning to the theory. In Schuham's (1967), p. 414) words:

> "If those closely involved in the formulation and elaboration of the double-bind hypothesis cannot

agree on its definition, it is not difficult to
understand why others do not have a firm grasp
of the concept."

Research With Adults

In time, researchers seemed to reassess the situation and produce decidedly more relevant and productive studies on the double-bind. Emphasis shifted from theoretical to empirical, and many of the more recent studies in the area -- carried out subsequent to Schuham's scathing attack of the hypothesis -- have been well-conceived, objective, and supportive of the theory in general.

Attention began gradually to focus on assessing the respective roles of the verbal and nonverbal aspects of communication. Argyle (1969) showed that when verbal and nonverbal signals were contradictory, the total message seemed to be disturbing to subjects. And Auger (1970) concluded that while the ability to interpret nonverbal signals may be lessened in schizophrenics, it is not totally absent.

In an effort to discover whether the words (the verbal channel) or the tone (the vocal channel) of a communication was given more weight by adults making emotional judgements of double-bind speech, Mehrabian and Winer (1967) chose words to communicate positive, neutral, and negative emotional content. Speakers were required to recite all single words (positive, neutral, and negative) in positive, neutral, and negative tones of voice. Speech samples were recorded and played to undergraduate university students, who rated the emotional content. The results demonstrated that the vocal channel was dominant; if a positive

word was said in a negative tone, the message was typically judged as being negative. The same type of dominance of vocal over verbal signals in contradictory speech has also been observed by Fujimoto (1972).

Mehrabian and Wiener (1967) interpreted this finding as lending support to double-bind theory. They suggested that conflicts in schizophrenic families are usually ones in which the verbal aspects of messages are positive while the tonal cues are negative (e.g., "I really care about you," said in an insincere tone). Since they were able to demonstrate that conflict is resolved in the direction of vocal signals, Mehrabian and Wiener (1967) suggest that such messages are typically interpreted as being negative. Schizophrenics are likely to feel that they receive a disproportionate number of negative communications. Taking Mehrabian and Wiener's perspective, schizophrenics can be thought of as those who are continually negatively reinforced and whose social learning is thereby affected.

Research With Children

Perhaps the most significant development in double-bind research came when investigators began to turn their attention towards looking at the effects of contradictory communications on children. Earlier work had tended to ignore youngsters. As if suddenly recalling the importance of early experience, investigators finally started to take an experimental interest in children and the double-bind.

Olsen (1967) showed that children 5, 7, 9, 11, and 13 years of age atended to the verbal portion of messages and discounted the tonal

information. Bohannon (1976) found that while approximately one-fifth of kindergarten children could discriminate between normal and scrambled syntax, more than three-quarters of children were able to do so at an older age level (i.e., grade two). And Beakel and Mehrabian (1969) found that mothers used more double-bind type messages than did fathers.

A study involving children was performed by Bugental, Love, Kaswan, and April (1971). These researchers videotaped parent-child discussions in "normal" families and in families containing a "disturbed" child (where a disturbed child was one referred by school authorites as a behaviour problem). Trained judges rated the visual, vocal, and verbal content of the messages.

In rating the visual channel, the judges were shown a picture on a television monitor without hearing the audio part of the communication. When rating the vocal channel, on the other hand, they heard the message after the verbal content (i.e., the words spoken) had been removed by an electronic filter device and did not see the video portion of the tape. The verbal content -- simply the words typed out -- was also rated. For each communication, the judges made a decision as to whether or not they viewed the message as positive or negative. A message was considered to be contradictory if the emotional content of all three channels was not rated as being the same. That is, if the emotional content of any one channel was negative while the content of either or both of the other channels was positive, the message was categorized as contradictory.

The researchers found that a greater number of mothers of disturbed

children emitted conflicting, double-bind communications than did mothers of the normal youngsters. This difference was statistically significant. Although this result supports the double-bind hypothesis, it seems that double-bind communication on the part of the mother may have debilitating effects and be involved in disturbance in general, and not limited to schizophrenia per se.

Many seasoned teachers feel that it is a mistake to be sarcastic with very young children. To them, sarcasm is a clear case of contradictory communication that confuses younger children who haven't developed a sensitivity to it. In light of the double-bind hypothesis itself and Bugental, Love, Kaswan, and April's findings (i.e., that contradictory communication and disturbance appear to be associated), it seems there may be something to be said for this old view that educators should avoid using sarcasm whenever possible when teaching young children.

Bugental and her colleagues produced other interesting findings. They demonstrated that contradictory communications were viewed to be more negative by children than by adults. This difference in negativity was most noticeable in the cases where the contradictory messages were produced by females (Bugental, Kaswan, and Love, 1970). They also showed that while children interpreted statements from an adult male as being more friendly if he was smiling, there was no difference in the judgments of female messages whether the women were smiling or not (Bugental, Love, and Gianetto, 1971). It was also demonstrated that young children placed less importance on facial cues than did adults, and that this trend was

again strongest in the case of female messages (Bugental, Kaswan, Love, and Fox, 1970).

Summary

Although the double-bind hypothesis was intuitively logical and appealing, it didn't receive much empirical support in the first decade after it was proposed. It was plagued by theoretical confusions and contradictions, and early research concerning the hypothesis was not at all encouraging. However, as the hypothesis was modified, research gradually became more productive. Some studies assessing the responses of adults to ambiguous speech were methodologically sound and generally supportive of the hypothesis, and a series of excellent studies by the Bugental group showed that ambiguous messages seem to have an effect on children. The present study was designed to explore the effects of ambiguity on children in more detail, and to attempt to determine whether contradiction can indeed play a role in the causation of disturbance. In the next chapter the method employed to design the research is discussed.

CHAPTER III

RESEARCH PROCEDURES

The hypotheses to be tested in this study were: 1) children would react negatively to ambiguous messages; and 2) disturbed children would react more negatively than normal children to ambiguous messages.

To test these hypotheses a sample of twelve year old boys were subjected to a variety of taped messages and the resultant data were analyzed.

Definitions of Terms

Ambiguous. A message in which the tone and content are contradictory.

Consistent. A message in which the tone and content are congruent.

Disturbed. A boy referred to the school psychologist for behavioral or emotional problems.

Normal. A boy who had never been referred to the school psychologist.

Subjects

Forty twelve-year-old boys were randomly selected from various elementary schools in the Lord Selkirk School Division, Manitoba, and served as subjects for the research. Twenty of these boys were classified as "disturbed," because they had been referred by school authorities for behavioural and emotional problems. The other twenty boys were "normal" (i.e., were functioning adequately in school and had never been referred for any reason). No child in either group

had an I. Q. score which was above 110 or below 90.

Speech Samples

In order to obtain a measure of consistent and ambiguous messages, it was decided for ease of administration that verbal messages would prove most feasible. Accordingly, a female actress was asked to record twenty-four different messages. Half of the messages were consistent (words and tone congruent), while the other half were ambiguous, double-bind type communications in which words and tone were contradictory. Both verbal and tonal aspects of each message were rated by three trained judges to make certain that they were either consistent or ambiguous

For example, for the consistent samples the speaker recited either "loving" words in a "loving" tone (e.g., "I love you" said lovingly) or "angry" words said in an "angry" tone (e.g., I'm just so angry now" said angrily). On the other hand, with the ambiguous samples, the speaker said "loving" words (e.g., "My, I like you") in an "angry" tone or "angry" words (e.g., "I despise you") in a "loving" tone. Figure I illustrates the distribution of the samples in each of the four categories.

Consistent and ambiguous messages were all arranged in random order on a single tape. The verbal content and corresponding tone of each sample (in the randomized order) is presented in Table I.

FIGURE I

	Content	Tone
Consistent	Loving Angry	Loving Angry
Ambiguous	Loving Angry	Angry Loving

Figure I. Distribution and type of consistent and
ambiguous messages.

TABLE I

RANDOM DISTRIBUTION AND CLASSIFICATION OF THE MESSAGES

SENTENCE		CONTENT	
		VERBAL	TONAL
1)	I hate you	Angry	Angry
2)	You make me feel so good.	Loving	Loving
3)	I'm just so angry now.	Angry	Angry
4)	I'll be back soon, sweetheart.	Loving	Angry
5)	I really think you're nice.	Loving	Loving
6)	I despise you.	Angry	Loving
7)	I can't stand you.	Angry	Angry
8)	That makes me angry.	Angry	Loving
9)	My, I like you.	Loving	Loving
10)	I'm definitely quite annoyed.	Angry	Angry
11)	You're a cute little guy.	Loving	Loving
12)	I hate that thing.	Angry	Angry
13)	Gee, you're wonderful.	Loving	Angry
14)	I love you, angel	Loving	Angry
15)	I'm too angry to stay here.	Angry	Loving
16)	I'm angry with you.	Angry	Angry
17)	I'd love to take you along, darling.	Loving	Angry
18)	You are a hateful thing.	Angry	Loving
19)	I just love to be with you, dear.	Loving	Angry
20)	I loathe you.	Angry	Loving
21)	My, you're sweet.	Loving	Loving
22)	You make me mad.	Angry	Loving
23)	I love you.	Loving	Loving
24)	I'm so in love with you.	Loving	Angry

Procedure

All normal and disturbed boys were seen individually by the same experimenter. After they had been arranged in random order, the speech samples were presented to the subjects.

Each boy was told that he was going to hear the voice of a lady speaking, and was asked to specify whether the messages made him feel "good" (positive), "bad" (negative), or "nothing" (neutral). A more complete description of the instructions is presented in Appendix B.

After hearing each message, each boy had twenty-five seconds to make each of his twenty-four choices. In a preliminary test, the researcher found that twenty-five seconds gave ample time for the respondent to reach a decision. Each response to each speech sample was recorded by the experimenter. In no instance was a message played a second time.

Data Obtained

A three column response table was utilized for each subject. As the subject made the decision about the taped message, the response whether positive, negative or neutral was recorded. Thus, at the end of the administration of the test, the researcher had 40 x 24 = 960 responses to the consistent and ambiguous messages.

Analysis of the Data

Two types of analysis were employed to test the hypothesis. In the first, a binomial estimate of probability on the negative scores was used to determine the difference in the responses of the

two samples (normal and disturbed) to the messages. The responses of the subjects were considered to be discrete data and thus were amenable to this particular test.

The second test used was the analysis of variance. The assumptions for the use of this procedure are random sampling, independence of the two variables, and normal population distributions. Since the subjects listened to both consistent and ambiguous stimuli and, in effect, served as their own controls, a repeated measures analysis with two types of speech (consistent and ambiguous) and two levels of listener (normal and disturbed) were performed on the negative response data. It was assumed that because samples were randomly selected, they would be representative of the normal distribution of normal and disturbed twelve year old boys in Selkirk School Division.

The level of confidence accepted in both of these tests was .05.

CHAPTER IV

RESEARCH FINDINGS

In this chapter the results of the tester together with the results of the binomial estimate of probability and the analysis of variance are presented.

Frequency of Response

The total and mean number of negative, positive, and neutral responses made by the normal and disturbed children to the twelve consistent and to the twelve ambiguous speech samples are computed. These data are presented in tabular form in Table II and graphically in Figure II. The figure and the binomial estimate of probability show that neither normal nor disturbed children made significantly more negative than positive judgments when listening to the consistent speech samples. However, it is clear that both groups of children made more negative than positive and neutral responses to the ambiguous messages. A binomial estimate of probability revealed that this difference was statistically significant at the .01 level.

Analysis of Negative Response Data

The number of negative responses made by each child was calculated, and this data are presented in Table III. The analysis, summarized in Table IV revealed that the main effects for type of speech (F = 148.76, p < .01) and for listener (F = 17.09, p < .01) were both significant. There was also a significant interaction effect (F = 15.43, p < .01).

TABLE II

TOTAL FREQUENCY AND MEAN NUMBER OF NEGATIVE, POSITIVE, AND
NEUTRAL RESPONSES BY NORMAL AND DISTURBED CHILDREN
AS A FUNCTION OF TYPE OF SPEECH SAMPLE

| | | Type of Speech Sample | | | |
| | | Consistent | | Ambiguous | |
		Total	Mean	Total	Mean
	Negative	118	5.90	158	7.90
Normal	Positive	116	5.80	66	3.30
	Neutral	6	.30	16	.80
	Negative	119	5.95	197	9.85
Disturbed	Positive	114	5.70	23	1.15
	Neutral	7	.35	20	1.00

FIGURE II.

Mean frequency of negative, positive, and neutral responses by normal
and disturbed children as a function of type of speech sample.

Mean Number of Negative, Positive, and Neutral Judgements (maximum of 12)
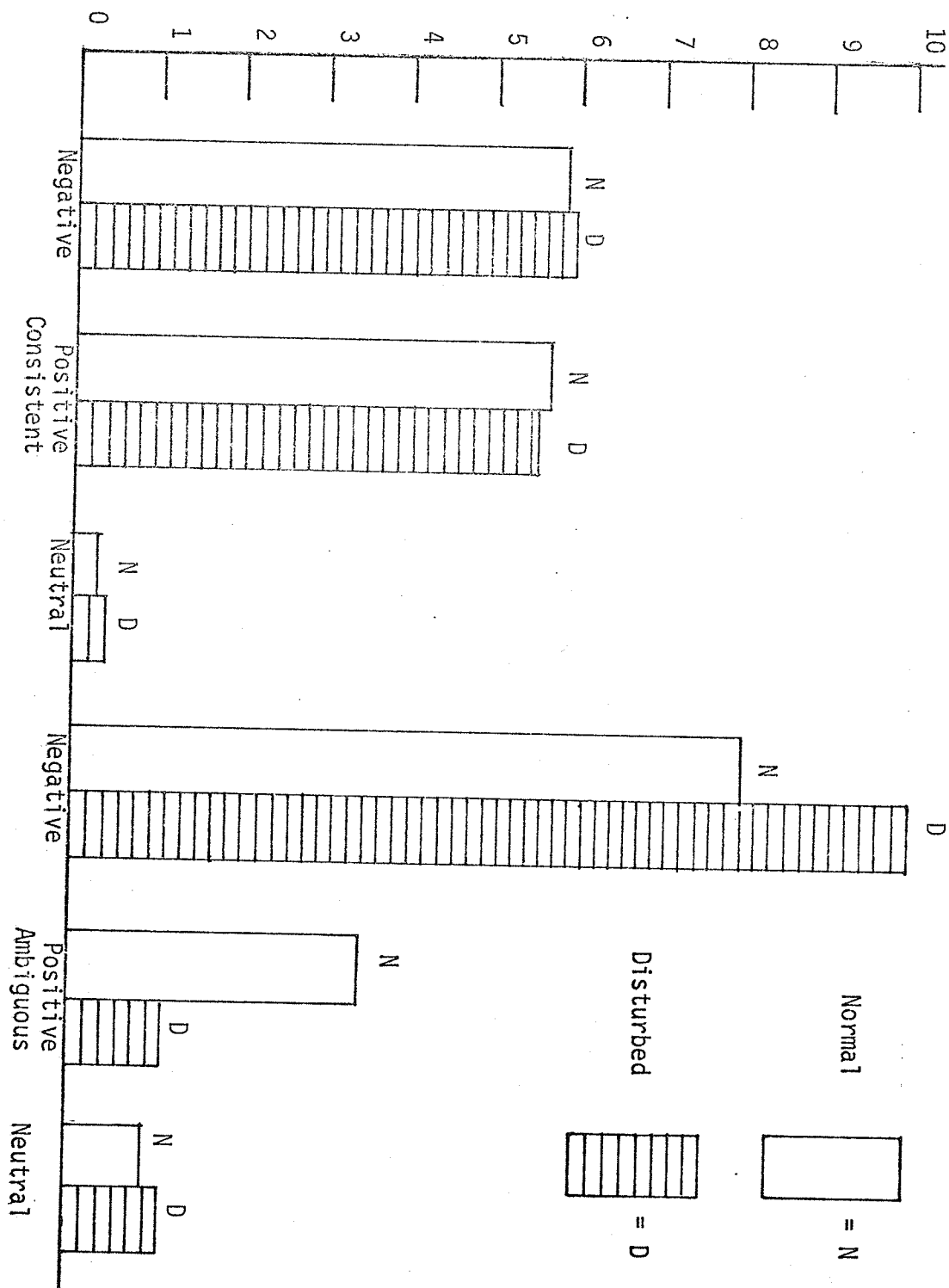
TABLE III

THE NUMBER OF NEGATIVE RESPONSES TO CONSISTENT AND
AMBIGUOUS SPEECH SAMPLES BY EACH NORMAL AND DISTURBED CHILD

	Respondent	Type of Speech Sample Consistent	Ambiguous
Normal	1	6	9
	2	7	8
	3	5	7
	4	8	8
	5	4	9
	6	6	10
	7	6	6
	8	6	8
	9	5	8
	10	7	7
	11	6	9
	12	7	8
	13	5	8
	14	4	7
	15	7	6
	16	5	7
	17	5	7
	18	7	8
	19	6	9
	20	6	9
		118	158
Disturbed	1	8	9
	2	4	10
	3	7	10
	4	6	11
	5	6	12
	6	5	8
	7	6	9
	8	5	8
	9	7	9
	10	7	10
	11	6	9
	12	6	8
	13	5	11
	14	5	10
	15	6	9
	16	6	10
	17	7	11
	18	6	12
	19	6	10
	20	5	11
		119	197

TABLE IV

ANALYSIS OF VARIANCE FOR MEAN NUMBER OF NEGATIVE RESPONSES TO
CONSISTENT AND AMBIGUOUS MESSAGES AS A FUNCTION OF
TYPE OF SPEECH

Source	SS	df	MS	F
Rows (Normal or Disturbed)	20.00	1	20.00	17.09*
Columns (Type of Speech)	174.05	1	174.05	148.76*
Interaction	18.05	1	18.05	15.43*
Error	89.10	76	1.17	
Totals	301.20	79		

* Significant at the .01 level.

The main effects are explained by the mean scores of the normal and disturbed boys in the consistent and ambiguous conditions. These means derived from Table II are presented in Table V. The means show that when listening to consistent speech, normal ($\overline{X}$ = 5.90) and disturbed ($\overline{X}$ = 5.95) subjects react similarly. However, both groups of subjects respond more negatively to the ambiguous samples, with the disturbed boys ($\overline{X}$ = 9.85) reacting more negatively than the normals ($\overline{X}$ = 7.90).

When these means are plotted graphically in Figure III, the main effects are even more clear. In terms of the type of speech effect, the figure shows that both "normal" and "disturbed" children respond negatively to ambiguous speech, but not to consistent samples. The listener effect is clear as well. It is obvious that the disturbed children react even more negatively to ambiguous speech samples than do their normal counterparts. In summary, children respond negatively to ambiguity in speech, and that disturbed children respond more negatively than normal children.

Summary

It was clear that both normal and disturbed children judged the ambiguous stimuli more negatively than the consistent samples. In addition, the disturbed subjects judged the ambiguous messages much more negatively than did the normal youngsters. The two hypothesis stated at the beginning of the chapter are supported by the findings of the study. In the next chapter, conclusions and implications are presented.

TABLE V

MEAN NUMBER OF NEGATIVE RESPONSES AS A FUNCTION OF
TYPE OF SPEECH SAMPLE

| | Type of Speech Sample | |
	Consistent	Ambiguous
Normal	5.90	7.90
Disturbed	5.95	9.85

FIGURE III.

Mean number of negative responses to consistent and ambiguous speech by normal and disturbed children. Mean number of negative response (Maximum of 12).
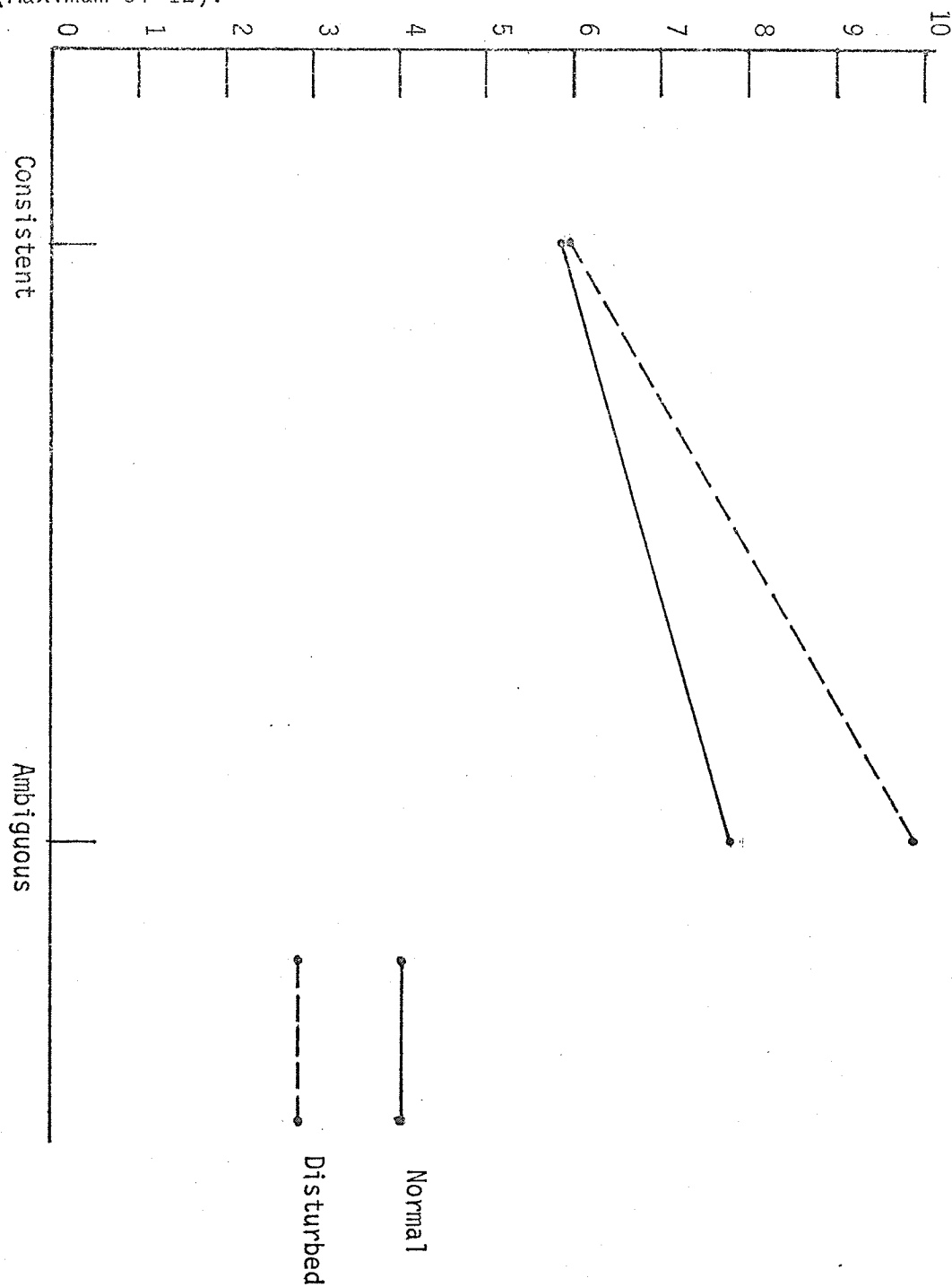
CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The findings of the present study were clear and precise. Neither
the normal nor disturbed subjects emitted more negative than positive
responses when hearing the consistent speech samples. However, both
groups of youngsters reacted significantly more negatively to the am-
biguous messages. As well, there was a differential response, such
that the disturbed boys reacted even more negatively to ambiguous speech
than did the normal boys.

A number of conclusions can be drawn from these results. In the
first place, since both normal and disturbed subjects reacted more neg-
atively to ambiguous speech than to consistent messages, the results of
the study support the hypothesis that children would react negatively to
ambiguous messages. Obviously, it is possible to conlude from the present
data that children dislike contradictory speech samples, and that they
perhaps find them anxiety arousing and debilitating.

The findings at hand also support the hypothesis that disturbed
children react more negatively than normal children to ambiguous messages.
It is logical to conclude from this finding that ambiguity in communica-
tion is involved in the cause of disturbance. The implication is that
there is the possibility that since disturbed children seem to be more
affected by contradictory speech, ambiguous messages may play a role in
the causation of the disturbance in the first place. Not only do child-
ren dislike contradictory speech; they seem to be affected and disturbed

by it. In this sense, the current investigation provides definite support for attempts to link contradiction and disturbance (Bugental, Love, Kaswan, and April, 1977), and, to go a step further, support for the very essence of the double-bind hypothesis itself.

Certainly, this study has important implications for education. It supports the anecdotal type of reasoning that has insisted that contradictions and sarcasm have a serious effect on youngsters. In a way, it may even be a first step in providing factual ammunition and rationale for administrators who feel it is in the best interests of young children to dismiss or attempt to modify the behaviour of openly sarcastic, negative, and contradictory teachers.

It may well be that contradictory communication on the part of a teacher can indeed be an extremely serious matter, in that children react negatively to it and that it appears to be tied directly to emotional disturbance. This study provides some evidence to enable administrators to insist their teachers attempt to be consistent in the classroom. The messages communicated by all channels should not be different; the verbal, visual, and tonal content of a teacher's message ought to agree and be congruent.

With reference to educational administration, the findings are relevant for school administrators. As mentioned earlier, the superintendent should take a leadership role emphasizing that consistent communication on the part of the teacher is extremely important, and that ambiguous behaviour can cause real problems. Some teachers may use

sarcasm in classrooms for emotionally disturbed youngsters which would be a doubtful practice. We have concrete data suggesting that contradiction and ambiguity can upset young students. Consequently, it is reasonable to expect enlightened administrators to become familiar with double-bind theory and related research, and make use of it in a meaningful way in schools. Sarcastic teachers should be strongly urged to begin modifying their behaviour, and, when employing teachers, administrators should take pains to assess whether or not an applicant for a teaching position is pleasant, positive, and consistent.

This investigation supplied some definitive data for twelve year olds in the sample studied. Being an exploratory investigation, however, more work needs to be done. For one thing, it would be extremely beneficial to look at age differences to discover whether young children are more affected by ambiguous messages than older ones (i.e., address the question of whether or not contradictory messages have more of a debilitating effect during the early years). Nonetheless, the basic findings of the present study -- that children in this sample reacted negatively to ambiguous speech and that disturbed youngsters reacted more negatively than normals -- certainly are provocative and in some respects lay the groundwork for future investigation.

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APPENDIX A

THE VERBAL AND TONAL CONTENT OF THE

CONSISTENT AND AMBIGUOUS MESSAGES

IN RANDOM ORDER

| | CONTENT | |
SENTENCE	VERBAL	TONAL
1) I hate you.	Angry	Angry
2) You make me feel so good.	Loving	Loving
3) I'm just so angry now.	Angry	Angry
4) I'll be back soon, sweetheart.	Loving	Angry
5) I really think you're nice.	Loving	Loving
6) I despise you.	Angry	Loving
7) I can't stand you.	Angry	Angry
8) That makes me angry.	Angry	Loving
9) My, I like you.	Loving	Loving
10) I'm definitely quite annoyed.	Angry	Angry
11) You're a cute little guy.	Loving	Loving
12) I hate that thing.	Angry	Angry
13) Gee, you're wonderful.	Loving	Angry
14) I love you, angel.	Loving	Angry
15) I'm too angry to stay here.	Angry	Loving
16) I'm angry with you.	Angry	Angry
17) I'd love to take you along, darling.	Loving	Angry
18) You are a hateful thing.	Angry	Loving
19) I just love to be with you, dear.	Loving	Angry
20) I loathe you.	Angry	Loving
21) My, you're sweet.	Loving	Loving
22) You make me mad.	Angry	Loving
23) I love you.	Loving	Loving
24) I'm so in love with you.	Loving	Angry

APPENDIX B

INSTRUCTIONS

I'm going to turn on the tape recorder and you hear hear the voice of a lady speaking. After each time the lady speaks, I want you to tell me whether she makes you feel "good," "bad," or "nothing" at all. If she makes you feel loving, happy, or good inside, tell me she makes you feel "good." If she makes you feel angry, unhappy, or bad inside, tell me she makes you feel "bad." And if she doesn't make you feel "good" or "bad" -- if you feel nothing at all -- just tell me she makes you feel "nothing."

Are there any qestions? (If so paraphrase above.)

Okay. Now listen to the lady and tell me if she makes you feel "good," "bad," or "nothing."