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EFFECTS OF ENVIRONMENTAL CONTEXT IN NEGOTIATING SITUATIONS: TERRITORIAL DOMINANCE BEHAVIOR IN DYADIC VERBAL INTERACTIONS

by

DAVID ANTHONY MARTINDALE

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

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Abstract

EFFECTS OF ENVIRONMENTAL CONTEXT IN NEGOTIATING SITUATIONS: TERRITORIAL DOMINANCE BEHAVIOR IN DYADIC VERBAL INTERACTIONS

by

DAVID A. MARTINDALE

Adviser: Professor Arnold Bernstein

The matter of territorial dominance in human beings was examined by having 60 male college students negotiate, in dyads, in a non-neutral environment (a dormatory room belonging to one of them). Their task was to discuss a fictional criminal case with one participant playing the role of defense attorney and the other, the role of prosecuting attorney and to decide upon an appropriate prison term for the accused. Territorial dominance was assessed by determining whether or not the home participant (the subject whose room was being used) would speak more and win the negotiation.

To

Judy and Holly

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(with Dr. Welkowitz) patiently trained me to operate AVTA and greatly assisted me in solving the technical difficulties involved in recording two individuals on separate channels of a stereo recorder, in a setting where physical separation was not possible. Prof. Gorman, a friend and colleague, reviewed the early drafts and provided many valuable suggestions.

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D. A. M.

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INTRODUCTION

Among psychologists, interest in human spatial behavior was initially sparked by Sommer's Studies in Personal Space in 1959 and has grown rapidly since the publication, also in 1959, of Hall's The Silent Language and of Ardrey's African Genesis in 1961. The existence of territorial behavior in human beings was brought to the attention of the general public in 1966, with the publication of Ardrey's Territorial Imperative and, while the term "territoriality" may still not be familiar to everyone, the fact that there is in man a strong desire to occupy a place which he can feel is his own is now generally acknowledged.

Not too long ago negotiations to bring an end to the war in Vietnam were being delayed by raging (though bloodless) battles over the proposed site of the negotiations and, subsequently, over the shape of the negotiation table. There was a strong tendency for the 'man in the street,' being unfamiliar with the psychological ramifications of seating arrangement, to view the latter issue as grossly inconsequential. Attitudes regarding the bickering over a site, however, were characterized by considerably more tolerance and understanding. It seemed that virtually everyone had some comprehension of the importance of the location in which the negotiations would take place. The phenomenon of 'home-team advantage' appears

to be widely accepted.

In 330 B. C., Aristotle (translated by Cresswell, 1902) reported that ravens were found only in pairs and also noted that one eagle would not permit another in the vicinity of his nest. In 1903, Brewster (p. 63) observed that a distinct advantage was held by a bird defending his home against an intruder. Up until the early 1600's, ornithologists' observations of territorial behavior had been confined primarily to birds of prey, though a contemporary of Aristotle's, Zenodotus (also in the third century B. C.) noted that two robins would not build nests in the same bush (Lack, 1943, p. 137).

In the early 1600's the interest of ornithologists shifted to territorial behavior in song birds. According to Lack (1943, p. 148), G. P. Olina reported, in 1622, that robins are particularly territorial and energetically attack any of their species who invade their domains. Huxley and Fisher (1964, p. 9) report that Francis Willugby, also in 1622, observed that a nightingale, upon its first arrival in an area, immediately builds a nest and, thereafter, guards the nest and its vicinity and allows entry only to its mate.

Though some ornithologists, writing in languages other than English, used terms which are the equivalent of the term "territory," Oliver Goldsmith (1774) is generally credited by historians of ornithology (e.g., Bates, 1958; Carpenter, 1958; and Lack, 1943) with having introduced the term

"territory" to describe the area defended by a bird.

Though observations of territorial behavior in birds prior to 1920 were numerous, "Credit for the emergence of the concept of territoriality in its modern form . . . is generally accorded to the English ornithologist [Henry] Eliot Howard (1920)" (Klopfer & Hailman, 1967, p. 141), although Hediger (1964, p. 7) credits the German ornithologist J. B. T. Altum. Howard was the first individual to produce maps of bird territories and was also the first to devote an entire book to the subject of bird territories.

In 1868, Altum (translated by Mayr, 1935) concluded, on the basis of extensive observations, that male birds sing to proclaim territorial ownership rather than for the purpose of attracting mates. Shortly after Altum had reported that male song birds sing to warn off rival males who might challange their territorial holdings, C. B. Moffat (1903, p. 164) expressed the view that the bright plumage characteristic of many birds was a sort of "war paint" serving as an admonition against trespassing.

Psychologists who study the parameters of territoriality in humans are not only indebted to the ornithologists, in whose field the discovery of territoriality was initially made, but to the ethologists as well, for it was they who emphasized the relevance of animal behavior to the student of human behavior.

Ethology is a relatively young science - younger than both ornithology and psychology. Hinde and Tinbergen (1965, p. 68) describe it as the study of "behavior evolution." Its birth is usually marked by 1899, the year in which C. O. Whitman (1899, p. 328), an American zoologist at the University of Chicago, wrote: "Instincts and organs are to be studied from the common viewpoint of phyletic descent." In 1910, Oskar Heinroth, a German zoologist studying ducks and geese, revealed the importance of ethological research to the student of behavior patterns when he demonstrated that the concept of homology (similarity, regardless of function, due to descent from a common ancestral form) applied to movement patterns as well as to structural attributes.

Without exception, all of those who have studied territoriality in animals have noted that in its own territory an animal behaves in a dominant manner and will usually emerge victorious from a conflict with an intruder. In an excellent statement of the relationship between territory-possession and dominance in birds, Etkin (1964, p. 28) stated that a "Careful watch of the behavior of the territory defenders reveals that the relative tranquility that often exists is dependent upon an important relationship between territoriality and dominance behavior. The well-established territory owner has an enormous advantage in any conflict with intruders." He explained (p. 28) that "a bird within its territory behaves and carries itself with the characteristic self-assurance of

a dominant. But when for any reason it leaves its territory and trespasses on that of its neighbor, it assumes the lean look and furtive behavior of a subordinate." Klopfer and Hailman (1967, p. 142) declare that "the original possessor of a territory remains the alpha or most superordinate animal almost independently of his physical attributes."

The attitude of the street gang towards its 'turf' and our acceptance of socialized aggression (i.e., war) in the defense of collectively held parcels of land are ample evidence that conflicts over territory occur in humans as well as in animals. Ardrey (1966, p. 5) maintains that "the dog barking at you from behind his master's fence acts for a motive indistinguishable from that of his master when the fence was built" and Stea (1965, p. 13) contends that territorial behavior "is as pervasive among men as among their animal forebears," but Proshansky, Ittelson, and Rivlin (1970, p. 16) feel that to assume that territorial behavior "serves the same functions in man as it does in lower organisms or that it is rooted in man in innately determined biological mechanisms, simply ignores the emergent properties of man that distinguish him from all other groups of living organisms." It is their opinion (1970, p. 19) that "territoriality [in man] becomes one means of establishing and maintaining one's sense of personal identity."

In the past decade, psychologists have studied the manner

in which man's culture influences his spatial behavior (Hall, 1959 & 1966) and have given a new name to the field - proxemics (Hall, 1963). They have studied the relationship between leadership and seating arrangement (Sommer, 1961 and Strodtbeck & Hook, 1961); between seating arrangement and ease of conversation (Sommer, 1965 & 1967a); between one's choice of a seat at a table and the likelihood that someone else will subsequently occupy an adjacent chair (Sommer, 1966); the ways in which people "distribute themselves so as to increase psychological and social distance" (Sommer, 1967b, p. 654); and, the manner in which personal belongings are used to demarcate and reserve 'temporary territories' (Sommer & Becker, 1969).

Interest in human spatial behavior generated the concept of "personal space" (Sommer, 1959) - a sort of portable territory, with the body as its center, the invisible boundaries of which the individual defends against encroachment by a variety of techniques, most of which do not involve any form of physical response.

Though psychologists have devoted considerable attention to human spatial behavior since 1959, experimental investigations of territorial behavior have been few in number. Previous research has been confined primarily to the parameters of personal space. Territory is defined geographically. It is relatively stable and its boundaries are usually recognizable (marked by signs of a visual, auditory, or olfactory nature). Personal space, on the other hand, is phenomenal and

its boundaries are neither stable nor easily recognizable.

Previous studies of territorial behavior in human beings have neglected to examine verbal interaction phenomena and have dealt with relatively ambiguously defined 'temporary territories,' such as table space in a library (Sommer, 1966). Sommer and Becker (1969), for example, studied the manner in which individuals use personal belongings to demarcate the boundaries of temporary territories, but their study did not take note of verbal interchanges taking place when one individual failed to honor the boundary markers placed by another. Sommer (1966) reported that if an individual occupies the middle seat at a table which has three seats on one side, it is unlikely that someone else will sit down in either of the two remaining seats. He did not examine verbal interactions taking place when someone defied the unwritten 'law of the library' and took a seat next to an individual who had clearly declared one side of the table as his territory.

Previous studies using human subjects have also neglected what is, perhaps, the most important defining characteristic of territorial behavior - dominance. Previous animal studies relating dominant behavior to the territory in which the behavior takes place have found that an animal exhibits dominant behavior in his own territory. Sommer (1966 & 1967b) noted in his studies of the manner in which students stake out territories in study halls or libraries that frequently "'the best defense [of one's territory] is a good offense.'"

(1967b, p. 658). This suggests that human beings, as well as animals, engage in "offensive display" in order to proclaim possession of a territory. Offensive display in a library or study hall may simply involve spreading out one's belongings and seating oneself in a sociofugal manner (i.e., in a manner which will tend to discourage others from occupying seats adjacent to one's own seat).

Researchers in animal territorial behavior use the term "dominance" in describing the behavior of the animal in his own territory. In research with human beings, however, terms such as "leadership" or "ascendance" are more frequently used. English and English (1958, p. 161) define dominance as "the relation of being more prominant or more important. . . ." They list "ascendance" as a synonym and indicate that it is frequently preferable because "it lacks the implication of bearing down." They then defins ascendance (p. 43) as "a tendency to take the lead. . . ." Apparently the three terms refer to closely related or identical behavior patterns.

Several studies have correlated the amount of speaking a person does with his characteristics of leadership and/or ascendance (Bales, 1953; Bass, 1949; Borgotta & Bales, 1956; David, 1967; Hastorf, 1965; Kirscht, Lodahl, & Haire, 1960; Norfleet, 1948; Shelly, 1960; Slater, 1955; Zdep, 1969; and, Zdep & Oakes, 1967). A close relationship has been found to obtain between ratings of leadership (or ascendance) and the amount of verbal participation in small group discussions.

In the Bass (1949) analysis of ten-man "leaderless" group discussions, for example, it was found that participants' speaking time correlated +.93 with the number of votes received from observers for having demonstrated leadership.

Oakes, Droge, and August (1968) developed a procedure for reinforcing speaking by a participant in a group discussion situation. The technique consisted in establishing a light flash as a reinforcement (by means of instructions given to the subject) and then presenting the light to him whenever he spoke. Using this technique, Hastorf (1965) performed a study in which subjects in groups of four discussed a case history and then completed a sociometric questionnaire. The subject who had been ranked third was then picked as the "target person" (i.e., the subject to be reinforced for talking). Hastorf found that the status of the target person increased significantly following the reinforcement session, in which he spoke more than he had previously. Zdep and Oakes (1967) conducted a similar study, in which they eliminated what they felt were methodological weaknesses in the Hastorf study, and obtained results that supported Hastorf's findings. They also found that a given subject would talk more when reinforced and that, subsequently, his leadership status would be elevated.

Strodtbeck (1951) found that when a group meets to reach a decision, the decision arrived at is likely to be the one reached privately by the individual who dominates the discussion.

Strodtbeck assembled a group of math majors and presented them with problems to which several solutions were available. Their task was to decide upon the best solution independently and then to discuss the matter and arrive at a group decision. Strodtbeck recorded each subject's speaking time and found that, to a significant extent, the solution adopted by the group was the one which had been privately arrived at by the individual speaking the most during the discussion.

The present study examined the matter of territorial dominance by having 60 male college students negotiate, in dyads, in a non-neutral environment (a dormatory room belonging to one of them). Their task was to discuss a fictional criminal case, with one participant playing the role of defense attorney and the other, the role of prosecuting attorney and to decide upon an appropriate penalty for the accused. Territorial dominance was assessed by determining whether or not the home participant (the subject whose room was being used) would speak more and win the negotiation.

The nature of the task performed by subjects in this investigation sets it apart, in many respects, from previous studies. In the territorial conflict situations observed by animal researchers, the territory involved is both the locus and the object of the conflict; that is, the animals are engaged in a conflict over a territory of which one is already the possessor and the victor wins the territory. Similarly,

in previous studies of territorial behavior in humans, certain spatial characteristics (the size of a waiting room and the availability of seating space, for example) not only provide a context within which interactions take place, but, more importantly, actually cause the interactions to take place.

In animal research, the type of behavior observed and recorded has always been non-verbal (since human researchers have not been able to utilize the vocal aspects of animal interactions). In previous human research the behaviors studied have also been non-verbal. Since, in previous studies, the invader has been a stranger to the territory holder, the reaction to intrusion has typically been non-verbal. Goffman (1959 & 1967) has discussed "civil inattention" as a means of repelling an intruder; Lyman and Scott (1967) have mentioned the effectiveness of "facial gestures"; and numerous other researchers (Birdwhistell, 1952; Duncan, 1969; Hall, 1959, 1963, & 1966; Jourard, 1966; Scheflen, 1964 & 1967; and, Trager, 1958) have expounded at length upon various forms of non-verbal communication.

Since, in this investigation, the participants have met for the agreed-upon purpose of negotiating and since their interaction is not initiated or catalyzed by spatial factors, the behavioral manifestations of any territorial feeling which might exist would be different from those observed in situations in which a feeling of encroachment is consciously

experienced. Such basic qualitative differences between the type of interaction under investigation in this research and those dealt with by previous investigators required that some new methods of assessing the existence of any territoriality effect by employed.

It was an antheopologist, E. D. Chapple (1939), who first discussed the desirability of constructing an instrument by means of which various aspects of interpersonal interactions might be quantified. The Interaction Chronograph, devised by Chapple (1949), proved to be an extremely useful instrument; however, its accuracy was heavily dependent upon the skill of a human observer-operator. Chapple's instrument requires that an operator observe a dyadic interaction and that he depress one or both of two "telegraph-type" keys (each representing one of the participants) whenever the respective participant is "acting." In Chapple's studies, "acting" included physical activities such as gesturing, as well as verbal activity.

Recently (Cassotta, Feldstein, & Jaffe, 1964 and Cassotta, Jaffe, Feldstein, & Moses, 1964) an instrument, the Automatic Vocal Transaction Analyzer (hereafter referred to as AVTA), was designed to automatically record the time patterns of dyadic verbal interactions. AVTA 'listens' to a verbal interaction which has been recorded stereophonically (with one participant on each channel) and registers the presence or absence of sound on each channel. The technique

of temporal pattern analysis described by Feldstein (in press) and by Jaffe and Feldstein (1970) provides a highly reliable means of assessing verbal aspects of a dyadic interaction.

In the present study, it was anticipated, on the basis of Sommer's (1967b) study of the manner in which students attempt to reserve territories in libraries and study halls, that the home participant might engage in "offensive display," which, in the context of a negotiation situation, would involve dominating the conversation. It was then predicted, on the basis of Strodtbeck's (1951) work, that if the home participant were to speak more, the decision reached by the dyad would be substantially influenced by him. The following two hypotheses were, therefore, advanced:

Hypothesis # 1: Home subjects talk more than visiting subjects.

Hypothesis # 2: The negotiation is more likely to be won by the home participant than by the visiting participant.

METHOD

Subjects

Subjects were 60 male Caucasion[1] undergraduate dormatory residents at the State University of New York at Stony Brook, ranging in age from 18 to 23 (mean, 19; standard deviation, .78). The native tongue of all subjects was English. Subjects were recruited from introductory psychology classes and were paid $2.50 for their participation.

Materials

The Collegiate Personality Inventory. Of the 480 items on the California Psychological Inventory, 46 comprise the [redacted] Scale. These 46 items were reproduced on a three-page questionnaire which was labeled "Collegiate Personality Inventory" (refer to Appendix B).

A fictional criminal case. The essential facts of the case, given to both subjects, are presented in Appendix C; three facts about the conduct or personality of the defendant which a defense attorney might find useful in defending his client are presented in Appendix D; and, three facts about the conduct of the defendant or the effect which his crime had or might have had upon innocent victims, which a prosecuting attorney could use in prosecuting the defendant, are presented in Appendix E.

The preparation of these materials for use in the experiment is described in Appendix F.

Apparatus

Subjects were recorded using a Concord F-400, four track portable stereophonic tape recorder, using standard Phillips-type C-90 tape cassettes (with 45 minutes of recording time per side). The recorder was equipped with separate volume controls for each channel and a headphone jack wired in such a manner as to make it possible for the experimenter to monitor the first minute of conversation (through headphones) while it was being recorded.

The microphones used were Electro-Voice sound-spots (EV-644). The sound-spot is a highly directional microphone, utilizing a combination of cardioid and distributed front opening designs, giving extended frontal pickup and providing excellent cancellation of sound from the rear and sides (thereby alleviating problems caused by random noise and reverberation).

The tape recordings of negotiating sessions were processed using an Automatic Vocal Transaction Analyzer (AVTA), built by Scientific Prototype, Inc., for Dr. Joan Welkowitz of New York University. The AVTA used in this study was modelled after the original AVTA, but samples the presence or absence of sound 600 times per minute (as contrasted with a sampling rate of 200 times per minute on the original instrument) and, unlike its predecessor, it does not feed its information to a computer, but registers the information (in summary

form) on various dials, located on the face of the machine itself. Complete information concerning the operation of AVTA and the reliability and validity of its measures appears in Appendix A.

Procedure

Using sign-up sheets, which were left at an agreed-upon location, the subjects signed-up for time slots (spaced one and one half hours apart, in order to make it possible for the experimenter to arrive at least fifteen minutes early, thereby precluding the possibility of an awkward interchange between the subjects prior to his arrival) and provided their dormatory addresses and telephone numbers.

Two subjects signed-up for each time slot. In order to determine which subject's room would be used, a coin was tossed by the experimenter. If the outcome were "heads," the first of the two subjects signed-up for a particular time slot would be the home subject. If the outcome were "tails," the second subject's room would be used. In order to determine the role each subject would play, the number "1" (standing for condition 1: defense, home; prosecution, away) was printed on 15 cards and the number "2" (representing condition 2: prosecution, home; defense, away) was printed on 15 cards. The cards were then shuffled and drawn one at a time until the roles to be played by the subjects in each dyad had been determined.

Pre-test meeting. Subjects were contacted by telephone and the experimenter arranged to meet with each of them briefly, at which time the following information was given to them:

> "As you already know from the recruitment speech which was given in your class, the basic purpose of my study is to examine the manner in which people communicate with one another when they are negotiating. When you meet with the other subject (location: 'here' or 'in X's room, Dorm Y, room Z'[illegible] on (day) at (time), you will be given a fictional criminal case to argue. One of you will be assigned to play the role of defense attorney and the other will be assigned to play the role of prosecuting attorney. I will simply ask that you attempt to play the role to the hilt and I will tape record you as you discuss the case for a period of a half an hour or so. I'll explain more about the experiment when I meet with you on (day). Today, I'm simply going to give you a short personality test. I cannot explain to you now the exact purpose of this test or the manner in which it relates to the rest of the experiment; however, when the experiment is over, I will send you - through the campus mail - an explanation of the test and your score on it, as well as a more detailed explanation of the experiment."

The Collegiate Personality Inventory[2] was then administered.

Experimental session. When the experimenter arrived, he introduced himself to the subject whose room was to be used and stated that he would wait in the hall for the other subject to arrive. This was done in order to avoid becoming friendly with the home subject prior to the arrival of the visiting subject. When the visiting subject arrived, the two subjects were introduced to each other by the experimenter.

The subjects were seated in straight-back chairs, directly opposite to one another and approximately five feet apart. This distance was necessary in order to provide sufficient channel separation, so that the recordings could be processed by AVTA. A microphone was then placed directly in feent of each subject. The following instructions were then given:

> "Both of you already know something about the experiment. I will be giving each of you two sheets of paper containing information concerning a fictional criminal case. The first sheet that I give you will be the same for both of you. The second sheets, however, are different. Each of you will have, on the second sheet, three facts about the case which the other doesn't have. This has been done, simply, to make the task more interesting. One of you will be playing the role of prosecuting attorney and the other will be playing the role of defense attorney. The design of my experiment requires that I assign the roles you will play. I cannot simply let you play the role you might prefer. Since it is possible that you may find yourself playing a role which is inconsistent with your true feelings concerning the defendant, I must ask that you try your best to put your personal feelings aside. Try and get involved with the case and really play the role to the hilt. If you've been assigned to defend the accused, really argue for him and try to obtain as light a sentence as possible. If you've been assigned the role of prosecuting attorney, really go after the guy.
>
> "I'm sure both of you know that frequently the fate of an individual accused of a crime is decided not in the courtroom but in behind the scenes discussions between the two attorneys. You are to assume that you are meeting privately for the purpose of attempting to reach an agreement between yourselves concerning the case. You will essentially be starting out in opposite directions, with the prosecuting attorney arguing for as stiff a penalty as possible (within the limits set on the first sheet) and the defense attorney arguing for

as short a prison term as possible. After having argued your respective positions for about half an hour or so, you are to attempt to reconcile your differences and see if you can reach an agreement on what the defendant's term in prison should be.

"You are to assume that the defendant has, in fact, committed the crime of which he has been accused. You are not arguing about his guilt or innocence. You are simply discussing the various circumstances. Do the circumstances warrant his being given a prison term close to the minimum prescribed by law or are the circumstances such that he should be sentenced to a prison term close to the maximum? Remember that you are arguing to one another, not to a third party - not to a judge and not to a jury. Each of you must address your arguements to the other, because each of you must sway the other in order to win the case - to obtain the penalty you are aiming for.

"It is extremely important that I record you in such a manner as to isolate each of you on a separate channel of this stereo tape recorder. That's the reason for these crazy-looking mikes. They are highly directional and will tend to prevent one person's voice from being picked up by the other person's mike. There's one problem, however, and that is that because the mikes are so directional, if you move around in your seat and change your distance from the mike or the angle between your mouth and the mike, it will cause problems. So please try to sit still and not move around. Get yourselves comfortable and try not to lean forward or change your seating position in any way. I won't be around to remind you, because as soon as I've gotten you started and have checked to make sure that the recorder is operating properly, I'm going over to the student center. I'll be back in about half an hour.

"Here are the first sheets. Both these sheets contain the same information. Now, (S_1), I'm going to give you the defense case and, (S_2), I'm going to give you the prosecution case.

"Each of you now has three facts about the case which the other doesn't have. You may spring them at any time and in any order. Use a particular fact when you feel that it will help you make a point or when it will put the crunch on a point

> which your opponent has just made. One thing though: remember that you can't simply make passing reference to a given fact and assume that the other guy will know what you're talking about. You can't, for example, say: 'Oh yeah, well what about what he did to his uncle?' The other guy doesn't know what he did to his uncle, only you do. So when you make use of a fact on your fact sheet, spell it out clearly for your opponent.
>
> "Look over the two sheets and let me know when you feel familiar enough with them to start.
>
> "Are you both ready?
>
> "O. K. Now remember this is totally informal. You are arguing privately to one another. There are no ground rules. It doesn't matter, for example, who presents his case first.
>
> "Alright. If you're both ready, go ahead."

No comment was made concerning smoking unless it appeared that one of the subjects might be intending to smoke. If there were cigarettes or ashtrays in the room or if the visiting subject had brought cigarettes with him, the subjects were asked not to smoke and were simply told that "If a person smokes while he talks, it can bring about a distortion in some of the measures I'm interested in studying."[3]

After giving the instructions to "go ahead," the experimenter monitored the discussion for about one minute, in order to make sure that both channels of the tape recorder were recording properly, left the building, and returned in approximately 35 minutes. If the subjects were still negotiating, the experimenter told them that he would wait in the hall until they were finished and asked that they try to

reach an agreement within 10 minutes. If the subjects had not reached an agreement after one hour of negotiation, they were informed that the case would be considered a "deadlock." At the conclusion of the negotiation, the subjects were paid, thanked for their participation, and told that they would be sent a brief report concerning the experiment.

Treatment of the data

Data relating to hypothesis # 1. The measures listed below are commonly used in temporal pattern analysis of dyadic verbal interactions and can be obtained with AVTA. Definitions have been adopted from Feldstein (in press).

1. A vocalization is a segment of continuous[4] sound (i.e., speech) by one speaker that is bounded either by silence or by a vocalization of the other speaker.

2. A pause is an interval of silence bounded on both sides by vocalizations of the same speaker.

3. A switching pause is an interval of silence bounded on one side by a vocalization of one speaker and on the other side by a vocalization of the other speaker.

4. Simultaneous speech involves temporally concurrent vocalizations of the two speakers.

5. An utterance is a sequence of the vocalizations and pauses of one speaker (bounded on both sides by either a switching pause or a vocalization of the other speaker.

6. A floor time is an utterance plus the switching pause which follows it.

7. A speaker switch[5] is a change from one speaker to the other.

A diagrammatic illustration of these measures is presented below.

---

insert Figure 1 about here

The first hypothesis, that home subjects would talk more than visiting subjects, was evaluated on the basis of both summed floor time and average floor time.[6]

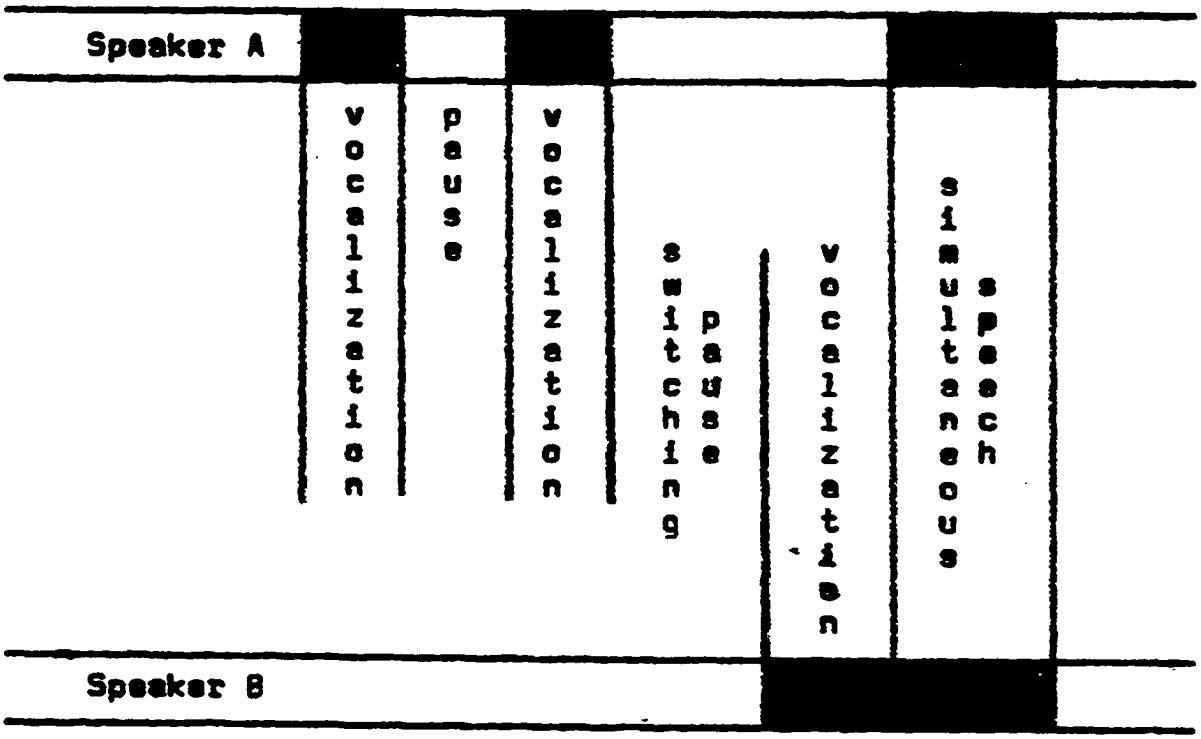
Data relating to hypothesis # 2. One hundred students were drawn from classes which had originally been used in the recruitment of subjects and these students were asked to read the fictional criminal case and indicate a fair prison term for the accused. The mean duration of imprisonment decided upon was 37 months (standard deviation, 17.23 months). The prison terms agreed upon by the dyads were compared with this mean. Terms shorter than 37 months were scored as victories for the defense attorney and terms longer than 37 months were considered victories for the prosecuting attorney.[7]

Statistical Analysis

The data were analyzed by means of stepwise multiple regression analyses. The program used computes a sequence of multiple linear regression equations in a stepwise manner. At each step, one variable is added to the regression

FIGURE 1

DIAGRAMMATIC REPRESENTATION OF PAUSES, VOCALIZATIONS, SWITCHING PAUSES, AND SIMULTANEOUS SPEECH.



Note: shading represents the presence of sound

equation. The user can, if he wishes, specify the order in which the variables enter the regression equation. Otherwise, the computer adds, at each step, the variable which provides for the greatest reduction in the error sum of squares.

This method of analysis does not require the artificial breaking up of continuous variables and made it possible to examine the effect of territory (i.e., the location in which the negotiations took place - home or away) after the effect of each subject's initial level of dominance (as measured by his score on the California Psychological Inventory Dominance Scale) had been statistically controlled.

Essentially, the design was a 2 x 2 (territory x role), with CPI Dominance scores as a covariate. The program was prepared so that, in examining each of the dependent variables (summed floor time, average floor time, and dyad decision), CPI Dominance scores were entered into the regression equation at the first step. The two independent variables were coded in such a manner as to permit the computer to add, at the second step, whichever of the two made the greatest reduction in the error sum of squares (and to add the other at the third step). In the case of all three dependent variables, the independent variable entered (by the computer) at the second step was territory. The second independent variable, role, was then entered at the third step and the territory by role interaction was added at the fourth step.

According to Cohen (1968), multiple regression analysis

and analysis of variance/analysis of covariance are essentially identical systems. Those differences which do exist favor multiple regression, since it makes possible a more powerful exploitation of the data. Cohen considers analysis of variance to be a special simplified version of multiple regression analysis. Hypothesis testing is performed in the same manner in both systems. The multiple regression program calculates F-values, which are then checked for significance in the same manner as are F-values produced by an analysis of variance.

Footnotes

1. (p. 14) Welkowitz (1970) suggested the possibility that the temporal patterns of blacks, for example, might be different from those of whites.

2. (p. 17) Subjects' scores were remarkably close to those reported by Gough (1957, p. 34) in a study of 1133 college students. Gough reported a mean score of 28.3 and a standard deviation of 6.3. The mean score obtained by the Stony Brook students used in this investigation was 28.55, with a standard deviation of 6.39.

3. (p. 20) The temporal structure of a conversation can be easily distorted if one or both participants are smoking. The duration of a switching pause, for example, would be affected if A were in the midst of inhaling as B concluded a statement requiring a response from A.

4. (p. 21) The "delay set" adjustments on AVTA (see Appendix A) were set so that a silence of less than .1 second within a vocalization would not be recorded. A silence of more than .1 second would be recorded as a pause.

5. (p. 22) The number of floor times a speaker accrues during the course of a conversation is one-half the number of speaker switches. AVTA was constructed in such a manner

as to automatically halve the number of speaker switches; thus, the number which appears on the dial labeled "FRQ. SPK.SWK." (Frequency of Speaker Switches) can be taken as the number of times either participant held the floor.

6. (p. 22) Though the psycholinguistic analyses undertaken in the present study involve temporal phenomena, Zdep and Oakes (1967, p. 316) have reported correlations of number of words spoken with speaking time to be consistently above +.90.

7. (p. 22) In programming the decision variable, prison terms under 37 months were coded "1" (victory) for the defending subject and "0" (loss) for the prosecuting subject. Prison terms in excess of 37 months were coded "0" for the defense and "1" for the prosecution. Since four dyads were deadlocked, two of the cases were coded as victories for the defense/home subject and two as victories for the prosecution/away subject. The actual penalties arrived at could, of course, not be used in the analysis since a particular prison term becomes meaningful only when viewed as a victory for one participant and a defeat for the other.

RESULTS

A relationship was found between territory and summed floor time. In the first step of the regression analysis, at which point the effect of CPI Dominance is statistically 'removed,' the partial correlation of territory with summed floor time was .73 ($F = 65.8324$, $df = 1/58$, $p. < .001$). As is shown in Table 1, territory produces an increase in R^2 of .4979, meaning that territory accounts for approximately 50% of the variance in total floor time (again, with an F of 65.8324, $df = 2/57$, $p. < .001$). It is interesting to compare the relative contributions of CPI Dominance and territory. CPI Dominance produces an increase in R^2 of only .0709 ($F = 4.4288$, $df = 1/58$, $p. < .05$). Thus, it appears that the territory in which the negotiations take place plays a far greater role than does one's initial level of dominance (as measured by the CPI Dominance Scale) in determining which participant will take the greater amount of floor time.

---

insert Table 1 about here

Since summed floor time is divided by the same number (half the number of speaker switches) for each subject, it would naturally follow that the participant taking the greater

TABLE 1

REGRESSION ANALYSES OF SUMMED FLOOR TIME: SUMMARY TABLE

step	variable entered	cumulative multiple R	increase in R^2	F value	df	p
1	CPI Dom	.2663	.0709	4.4288	1/58	p.< .05
2	TER	.7542	.4979	65.8324	2/57	p.< .001
3	ROLE	.7586	.0066	.8761	3/56	
4	T x R	.7586	.0000	.0015	4/55	

amount of floor time and would also have longer average times. In examining average floor time, at the first step in the regression equation, the partial correlation with territory was .34 ($F = 7.4858$, $df = 2/57$, $p. < .01$). As is shown in Table 2, territory accounts for an increase in R^2 of .1153; that is, territory accounts for approximately 12% of the variance in average floor time ($F = 7.4858$, $df = 2/57$, $p. < .01$).

---

insert Table 2 about here

The influence of territory in the determination of the accused's prison term is shown in Table 3, in which the number of victories is partitioned in terms of territory and role.

---

insert Table 3 about here

The mean duration of imprisonment decided upon by the dyads was 40 months (standard deviation = 28.01 months). Four of the 30 dyads failed to reach agreement on a penalty and the decision was scored as a deadlock. For half the dyads the defense attorney was the home participant and the prosecuting attorney was the visiting participant. In 11 of these 15 dyads, the penalty agreed upon was under 37 months (i.e.,

TABLE 2

REGRESSION ANALYSES OF AVERAGE FLOOR TIME: SUMMARY TABLE

step	variable entered	cumulative multiple R	increase in R^2	F value	df	p
1	CPI Dom	.0811	.0066	.3835	1/58	.
2	TER	.3491	.1153	7.4854	2/57	p.<.05
3	ROLE	.3559	.0048	.3055	3/56	
4	T x R	.4254	.0543	3.6489	4/55	p.<.05

TABLE 3

NUMBER OF VICTORIES PARTITIONED IN TERMS OF TERRITORY AND ROLE

ROLE	TERRITORY	
	HOME	AWAY
DEFENSE	11	3
PROSECUTION	10	2

the decision was a victory for the home/defense attorney); two dyads arrived a prison terms in excess of 37 months and two dyads were deadlocked. In 15 cases, the home participant was the prosecuting attorney and the defense attorney was the visiter. The decisions arrived at by these dyads differ quite considerably from those of the 15 dyads discussed above. Ten of these dyads decided upon prison terms in excess of 37 months (10 losses for the defense attorney as the visiting participant, as contrasted with his 11 victories while in the position of home participant), three dyads recorded prison terms under 37 months, and two dyads failed to reach agreement.

If, again referring to Table 3, we sum 'across roles,' we see that in 21 of 30 cases the home participant (regardless of role) won; whereas, only five cases were lost by the home participant. If, on the other hand, we sum 'across territories,' we discover that the defense attorneys won 14 cases and the prosecuting attorneys won 12 cases. The effect of territory can also be shown by comparing mean prison terms arrived at under the two basic conditions (condition 1, defense at home and prosecution away; condition 2, prosecution at home and defense away). The mean penalty arrived at under condition 1 was 22 months (sd = 12.79 months). The mean penalty arrived at under condition 2 was 60 months (sd = 26.21 months). When the defense attorney was at home, there was a tendency for the decision reached by the dyad to reflect his

influence, resulting in a low mean duration of imprisonment. On the other hand, when the prosecutor was the home participant, the penalty agreed upon was likely to be on the stiff side.

In examining the decision variable, at the first step in the regression equation the partial correlation with territory was .55 ($F = 25.0102$, $df = 2/57$, $p. < .001$). As is shown in Table 4, territory accounts for an increase in R^2 of .3018 ($F = 25.0102$, $df = 2/57$, $p. < .001$).

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insert Table 4 about here

Though no hypotheses had been formulated concerning initiation of interaction, note was made of which participant spoke first following the experimenter's instruction to "go ahead." In 25 of the 30 cases, the first subject to speak was the home subject, though frequently his opening remark was one such as "Why don't you start?" or "Do you care who starts?".

In order to appreciate the significance of the findings reported above, it is necessary to compare, for each dependent variable under investigation, the relative proportions of variance accounted for by the territory factor and by the CPI Dominance factor. In each instance, the territory factor accounts for considerably more variance than does the CPI

TABLE 4

REGRESSION ANALYSES OF DYAD DECISION (PRISON TERM): SUMMARY TABLE

step	variable entered	cumulative multiple R	increase in R^2	F value	df	p
1	CPI Dom	.1025	.0105	.6163	1/58	.
2	TER	.5588	.3018	25.0102	2/57	p.<.001
3	ROLE	.5649	.0068	.5595	3/56	
4	T x R	.5649	.0000	.0000	4/57	

Dominance factor. This suggests that not only is environmental context an important factor influencing both the course and the outcome of a negotiation, but that the contextual factor investigated in this study (territory) is so powerful that it outweighs a personality attribute as important as dominance.

DISCUSSION

Animal researchers have discussed territorial behavior for a long time and there seems to be complete agreement among them that the most important aspect of territorial behavior is the dominance exhibited by the territory possessor when an intruder invades his domain. Recently writers such as Altman and Haythorn (1967), Ardrey (1966), Hall (1959), and Stea (1968) have discussed spatial behavior in human beings. When researchers such as these speak of territoriality, however, it is not to such dominant behavior that they are referring. They are using the term to describe such phenomena as a student's preference for a particular seat in a classroom, a man's feeling that a certain chair is his alone and is not to be sat in by others, and man's apparent urge to acquire and cherish property.

The results of this investigation suggest that we can now describe man as territorial in a much fuller sense. Klopfer and Hailman (1967, p. 142) observed that, in animals, the territory possessor, "almost independently of his physical attributes," dominates an intruder. The findings of this research indicate that a human territory possessor, almost independently of his usual tendencies toward dominance or submission, will exhibit dominance characteristics in his interaction with a visitor if their meeting is of a competitive

nature. The overtly competitive quality of the experimental situation must, of course, be contrasted with the noncompetitive nature of most social interactions. When two people meet socially in one of their homes or for (noncompetitive) business reasons in an office belonging to one of the two, the social forces in operation are quite different from those which characterize an interaction which takes place between two people who are not friends and who have met for the agreed-upon purpose of negotiating.

The findings of this research have important implications for one of the most serious problems in personality theory - behavioral variability. Mischel (1968, p. 13) states: "the construct of personality itself rests on the belief that individual behavioral consistencies exist widely and account for much of the variance in behavior. Most definitions of personality hinge on the assumption that an individual's behavior is consistent across many stimulus conditions . . . ."

Allport (1937, p. 295) defines a personality trait as "a generalized and focalized neuropsychic system . . ., with the capacity to render many stimuli functionally equivalent, and to initiate and guide consistent (equivalent) forms of . . . behavior."[4] Allport's definition suggests, for example, that an individual with the personality trait of "competitiveness" views most people in an equivalent manner - as people with whom he is in competition - and reacts accordingly, by behaving competitively. In his reference to "the capacity

[of a personality trait] to render many stimuli functionally equivalent," Allport suggests that objectively different social or environmental contexts are likely to be viewed as phenomenally equivalent. There can be no doubt that this definition, which appears to be widely accepted (McClelland, 1951), attributes (by implication) little importance to contextual factors. Lennard and Bernstein (1969, pp. 31-34) discuss the importance of social context as a source of behavioral variability. The data of this investigation serve to focus attention upon the relevance of environmental context.

The findings of this investigation join a growing body of evidence suggesting that behavioral variability is far too complex to be attributed to a limited number of personality variables, measured - in most cases - by means of personality inventories which are incapable of accurately representing the full range of contexts within which the person will at some time have to respond. Hunt (1965, p. 81) reports that reliability and validity coefficients for measures of personality traits usually fall within a range of .20 to .50. He then points out that the square of a correlation coefficient can usually be taken as a rough index of the proportion of the variance attributable to the factor represented by the coefficient. Hunt's information reveals that psychologists have often attempted to explain behavioral variability in terms of factors which only account for somewhere between 4% and 25% of the total variance.

It is the feeling of numerous theorists (e.g., Allport, 1937; Dollard & Miller, 1950; Hull, 1943, 1951, 1952; Keller & Schoenfeld, 1950; McClelland, 1951; Mowrer, 1950; Rogers & Skinner, 1956; and, Sears, 1951) that personality traits are learned response patterns. Generalization of any learned response is a function of the similarity between the stimuli which evoked the response at the time that it was originally learned and the stimuli present in the new situation. It appears quite likely that the behaviors reported by individuals on personality inventories and often taken as being indicative of stable personality traits are actually highly specific and that the probability that a predicted response style will be manifested in a given situation is largely a function of the similarity between the evoking situation and the situations described on the personality inventory used to measure the response style.

It is difficult to account for the territorial behavior clearly manifested in this investigation. The reasons for territorial behavior in animals are more clearly evident. Various aspects of the lives and environments of animals living in the wild make the establishment of territories biologically appropriate. Carpenter (1958) lists 32 species-serving functions which naturalists have ascribed to territoriality. There are, however, four related functions which are more widely referred to than any of the others. Territorial behavior is credited by Bates (1950) and Moffat (1903)

with dispersing species populations, thereby insuring adequate space. Howard (1920) and Huxley (1933) feel that since mating activities depend upon the possession of a territory by the male, territorial behavior serves to limit breeding and prevent overpopulation. Bain (1949), Carpenter (1942), Greenberg (1947), and Noble (1939) feel that stronger animals obtain territories and that since territories are necessary for breeding, selective breeding takes place, ultimately improving the species. The most important function, in the opinion of most animal researchers (e.g., Allee, 1938, 1949; Altum, 1868 - translated by Mayr, 1935; Davis, Emlen, & Stokes, 1948; Hediger, 1964; and, Nice, 1941) is that of increasing the availability and accessibility of food.

Man does not appear to be territorial for any of these reasons. Human populations are not well dispersed. The availability of large amounts of unused land does not seem to alter man's tendency to voluntarily crowd into densely populated urban areas. The lack of sufficient space does not seem to prevent people from having children. Frequently those with the least space reproduce most rapidly. No form of selective breeding seems to be taking place. There is no evidence to suggest that the more intelligent and/or the physically stronger are reproducing at a higher rate than are those less well endowed. The availability of food is not a function of the size of one's territory, since few individuals grow their own vegetables or raise their own cattle.

Hess (1965) points out that certain patterns of activity are more resistent to phylogenetic change through evolution than are morphological characteristics and that certain behaviors frequently persist even though the biologically appropriate situation no longer exists in the environment of the species. It is, therefore, possible to maintain that territorial behavior in man serves different functions (or even that it serves no function) and still acknowledge the possibility that its presence in man could be explained in terms of evolution. Any explanation which utilizes the concept of natural selection, however, suggests that territorial behavior has some survival value for man. It is, perhaps, because man's territorial behavior does not seem to be enhancing his chances for species survival that the natural selection explanation is not unanimously accepted.

Proshansky, Ittelson, and Rivlin (1970) feel that the functions served by territoriality in humans are not related to its functions in animals. They stress (p. 18) that "The development and maintenance of a self-identity in the individual depends on more than how he was and is treated by others in the light of his behaviors, skills, and achievements. It is also a matter of places and things, and the acquisition of both serves to define and evaluate the self-identity of the person for himself and others." They contend that in many social and occupational settings, the use of particular objects and spatial areas is instrumental in the definition and organization of certain roles.

The findings of this research provide clear evidence that in conflict situations man is likely to behave in a territorial manner. The data do not shed any light on the intriguing question of the manner in which territorial behavior develops in man. It is to this question, perhaps, that future attention might be directed.

Footnotes

1. (p. 38) The entire definition of a personality trait (Allport, 1937, p. 295) was in italics. The italics were removed by this writer.

APPENDIX A

THE AUTOMATIC VOCAL TRANSACTION ANALYZER (AVTA)

As its name suggests, the Automatic Vocal Transaction Analyzer operates automatically; never-the-less, the reliability and validity of its measures are dependent to some extent upon a human operator since accurate operation requires that several interrelated controls be properly adjusted. The control panel of AVTA is pictured on p. 51 and the manner in which the tape recorder was used in conjunction with AVTA is shown on p. 52. As can be seen, the tape recorder was connected to a pre-amplifier and the pre-amp was wired to AVTA. The volume controls on the tape recorder and the pre-amp were never altered, but three controls - gain, threshold, and bucking - had to be set for each recording.

Cassotta, Jaffe, Feldstein, and Moses (1964, p. 10) report that the reliability of AVTA is "relatively independent of the quality of the tape recordings" and that "Errors introduced by sounds other than speech will not decrease the reliability. However, since the purpose of the system is to record temporal patterns of speech, extraneous noise will decrease the validity [italics added] of the system operation."

Note that on the panel of AVTA there is a light adjacent to each VU meter (one labeled "A-VOCAL" and the other labeled "B-VOCAL"). If the system is working properly, a light should

be illuminated when (and only when) the speaker on the channel represented by that light is vocalizing. If ambient noise activates the relay (thus, illuminating the light), then either the gain control has been set too high or the threshold control has been set too low (or both). If a participant activates the relay for the other speaker's channel (in addition to activating the relay for his own channel), then the bucking control (the purpose of which is to cancel unintended carryover of one speaker's voice in the other's channel) has been set too low. Cassotta, et al. point out in their operating manual (1964, p. 19) that "All of these controls . . . may have to be reset several times to obtain the right combination."

Despite the fact that the subjects were asked not to "move around," it is obvious (judging from volume fluctuations in the recordings) that this request was not complied with. This investigator found that, in the interest of validity, it was necessary to adjust one or more of the controls in the course of processing a given tape. In other words, in order to maximize the machine's accuracy in tracking each speaker (as judged by careful observation of the above-mentioned lights), it became necessary to occasionally alter the settings of one or more of the controls. For this reason, the reliability of the measures to be used in this study was examined under five different conditions.

Cassotta, et al. (1964, pp. 8 & 9) report reliability

coefficients for AVTA's various measures to be consistently above +.90. This investigator found that reliability of this magnitude was obtainable only when the second processing of a tape immediately followed the first, with unaltered control settings. However, though coefficients for pauses, switching pauses, and vocalizations fell below +.90 in some cases, measures of summed floor times and average floor time remained at or above +.90. This apparent paradox can best be explained by means of a simple example. A change in the gain control setting from one processing of a tape to the next might cause low volume speech which had registered as vocalizing the first time to register as a pause on the second run of the tape. This would bring about changes in the pause totals and vocalization totals but not in the floor time total (since floor time combines pauses, vocalizations, and switching pauses).

All five reliability studies performed by this investigator were made using 15 5-minute tape segments.

1. In the first study, the operator set the controls, processed a particular tape, and then, without touching any of the controls, simply processed the same tape again a second time.

2. In the second study, the operator compared measures taken one day with measures taken on the following day. In this study, the controls, once set, were not altered during the processing of a particular tape. The manner in which the controls were set for tape X on day 1, however, would

presumably be somewhat different from the manner in which they were set for the same tape on day 2.

3. In the third study, the control settings were altered (when necessary) during each processing.

4. The fourth study compared measures obtained by two different operators, with both instructed to set the controls once and then not disturb them.

5. The fifth study compared two operators, with both instructed to manipulate the controls during the processing of a tape when they felt it desirable to do so.

Feldstein (1970) pointed out that only in the first study is the reliability of the machine itself being assessed. In the other four studies, the reliability of a machine-operator team is being evaluated and this reliability could be increased with more extensive training of the operator.

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insert Table 5 about here

Since overrides (see Appendix G) had to be scored without the assistance of AVTA, 15 15-minute segments were scored by two different listeners in order to compute a reliability coefficient. The reliability coefficient for overrides was +.82.

A distinction must be made between AVTA's reliability in recording the various parameters and the reliability of the parameters themselves. The reliability of the parameters is

TABLE 5

ASSESSMENT OF AVTA'S RELIABILITY IN MEASURING AVERAGE FLOOR TIME AND SUMMED FLOOR TIME UNDER FIVE CONDITIONS (DESCRIBED ON PP. 47 & 48)

parameter	condition				
	1	2	3	4	5
Summed floor time	.97	.93	.94	.93	.90
Average floor time	.98	.95	.96	.94	.92

best assessed by means of split-half reliability coefficients. Split-half reliability coefficients were calculated and the following product-moment correlation coefficients (comparing first and second 15-minute segments) were obtained: summed floor time, +.893; average floor time, +.807; overrides, +.628. When these coefficients are adjusted by means of the Spearman-Brown formula, as suggested by Guilford (1954, p. 354), they become, respectively, +.944, +.906, and +.772.

PLATE 1

THE CONTROL PANEL OF THE AUTOMATIC VOCAL TRANSACTION ANALYZER

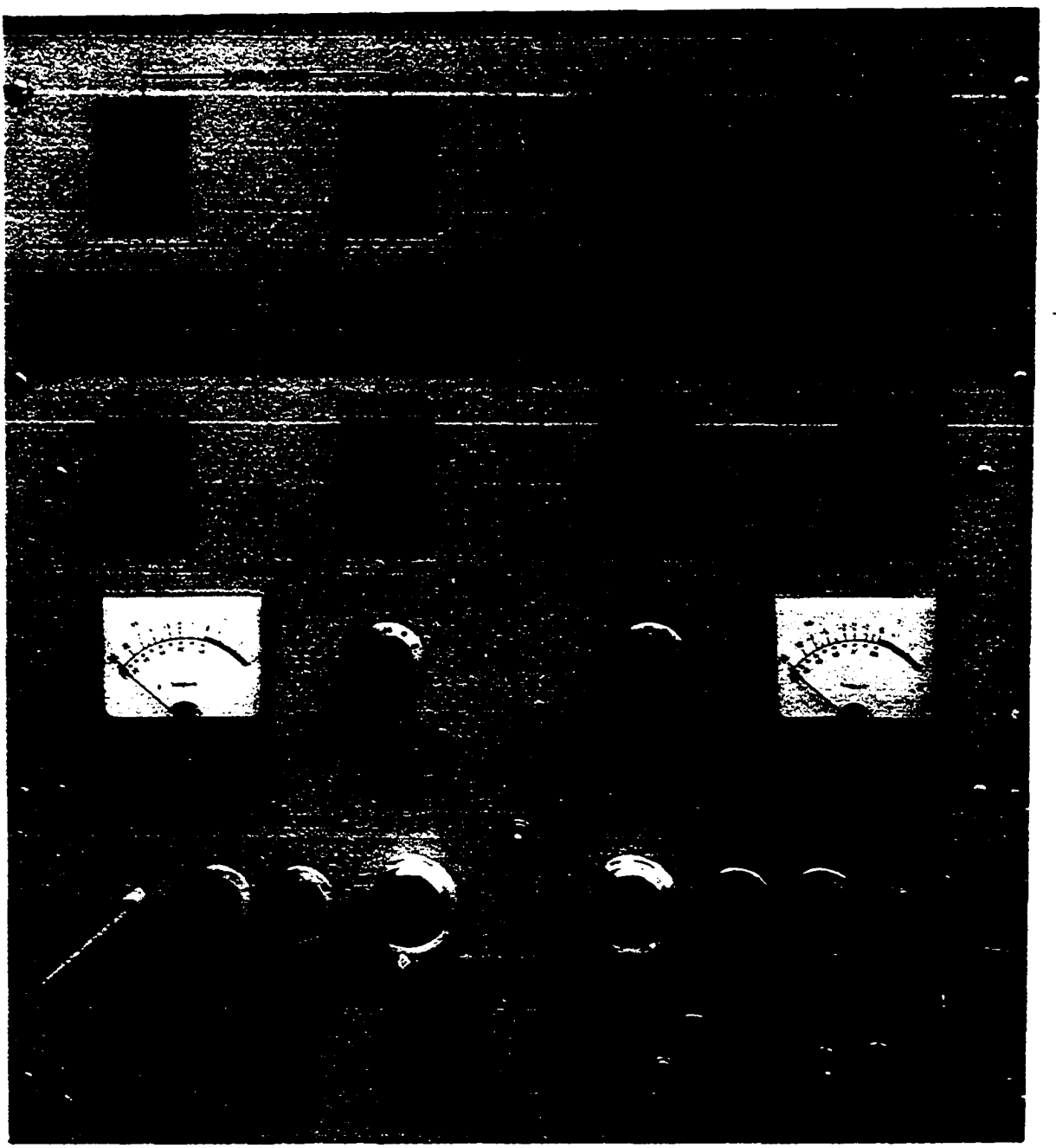
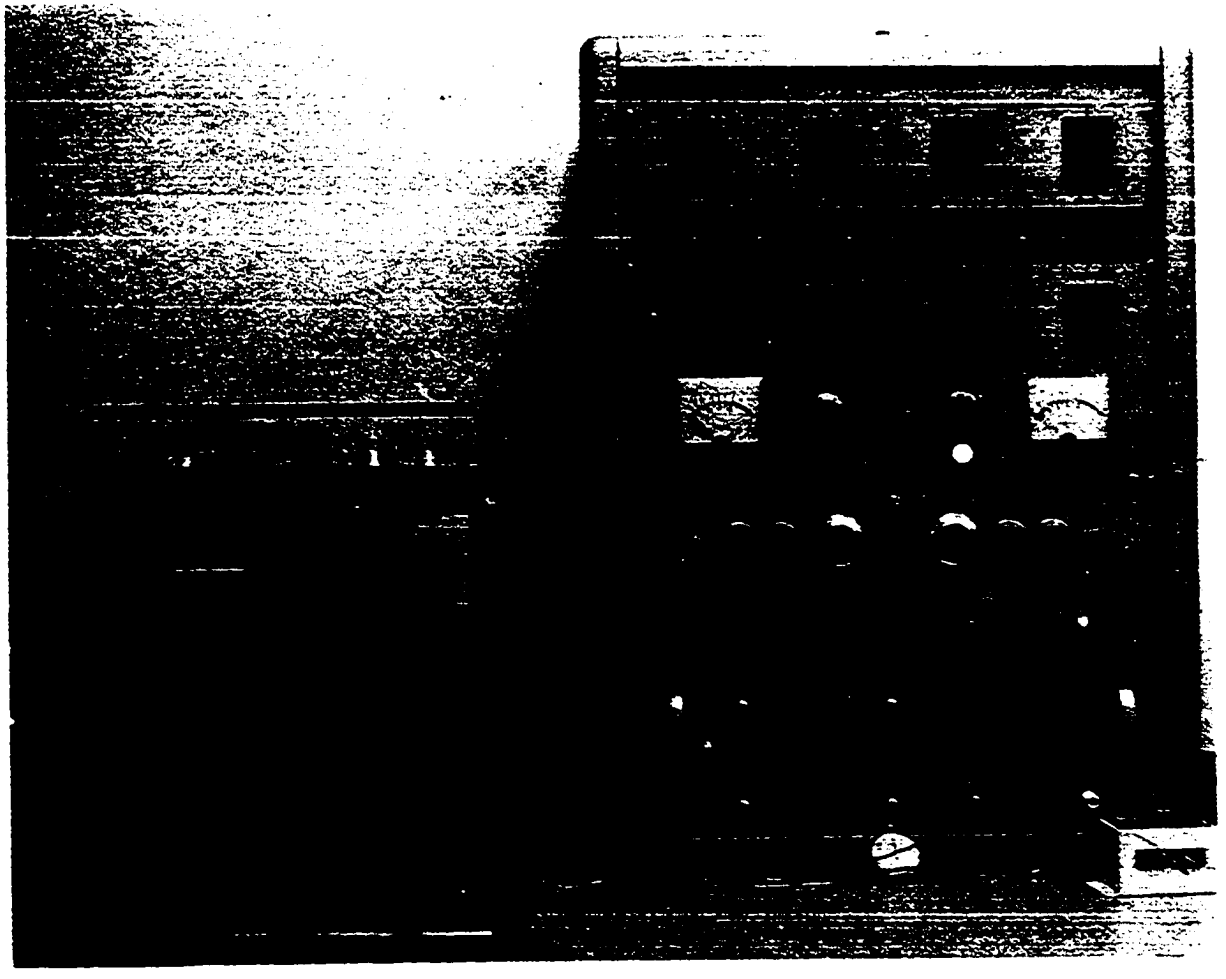


PLATE 2

AVTA AND THE CONCORD F-400 TAPE RECORDER



APPENDIX B

COLLEGIATE PERSONALITY INVENTORY

Directions: This page and the pages which follow contain a series of statements. Read each one and decide how you feel about it. If you agree with it or feel that it is true of you, place a heavy pencil mark through the letter "T" in the right margin. If you disagree with a statement or feel that it is untrue of you, place your mark through the letter "F".

1.	I doubt whether I would make a good leader.[1]	T	F
2.	I think I would enjoy having authority over other people.	T	F
3.	I find it hard to keep my mind on a task or job.	T	F
4.	I have sometimes stayed away from another person because I feared doing or saying something that I might regret afterwards.	T	F
5.	When in a group of people I have trouble thinking of the right things to talk about.	T	F
6.	School teachers complain alot about their pay, but it seems to me that they get as much as they deserve.	T	F
7.	I don't blame anyone for trying to grab all he can get in this world.	T	F
8.	Every citizen should take the time to find out about national affairs, even if it means giving up some personal pleasures.	T	F

GO ON TO THE NEXT PAGE

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1. All items have been reproduced exactly as they appear on the California Psychological Inventory Dominance Scale.

9.	I would like to belong to several organizations.	T	F
10.	I am certainly lacking in self-confidence.	T	F
11.	When I work on a committee I like to take charge of things.	T	F
12.	If given the chance, I would make a good leader.	T	F
13.	Sometimes at elections I vote for a man about whom I know very little.	T	F
14.	I like hunting very much.	T	F
15.	A person does not need to worry about other people if only he looks after himself.	T	F
16.	I can honestly say that I do not really mind paying all taxes, because I feel that's one of the things I can do for what I get from the community.	T	F
17.	When prices are high you can't blame a person for getting all he can while the getting is good.	T	F
18.	In school, I find it very hard to talk before the class.	T	F
19.	I am a better talker than a listener.	T	F
20.	I would be willing to give money to help right a wrong, even though I was not mixed up in it in the first place.	T	F
21.	We should cut down on our use of oil, if necessary, so that there will be plenty left for people fifty or a hundred years from now.	T	F
22.	When the community makes a decision, it is up to each person to help carry it out, even if he had been against it.	T	F
23.	I would rather have people dislike me than look down on me.	T	F

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24.	I try to see what others think before I take a stand.	T	F
25.	People should not have to pay school taxes if they do not have any children.	T	F
26.	In a group, I usually take the responsibility for getting people introduced.	T	F
27.	I would be willing to describe myself as a pretty "strong" personality.	T	F
28.	There are times when I act like a coward.	T	F
29.	I must admit I am a pretty fair talker.	T	F
30.	I have strong political opinions.	T	F
31.	I am usually a leader in my group.	T	F
32.	I seem to do things that I regret more often than other people do.	T	F
33.	Disobedience to any government is never justified.	T	F
34.	I enjoy planning things and deciding what each person should do.	T	F
35.	I would rather not have very much responsibility for other people.	T	F
36.	I usually have to stop and think before I act, even in trifling matters.	T	F
37.	It is pretty easy for people to win arguements with me.	T	F
38.	I have not lived the right kind of life.	T	F
39.	I have a natural talent for influencing people.	T	F
40.	I like to give orders and get things moving.	T	F
41.	I am embarrassed with people I do not know well.	T	F

GO ON TO THE NEXT PAGE

42.	The one to whom I was most attached and whom I most admired as a child was a woman (mother, sister, etc.)	T	F
43.	I'm not the type to be a political leader.	T	F
44.	People seem naturally to turn to me when decisions have to be made.	T	F
45.	I dislike having to talk in front of a group.	T	F
46.	I have more trouble concentrating than others seem to have.	T	F

APPENDIX C

CASE 8: GENERAL INFORMATION

Brian Burns, a 51-year-old supervisor of bank tellers is being tried for having embezzled $12,000 from his bank.

In his 23 years of service with the bank, Mr. Burns had worked diligently and no one had ever questioned his honesty or his loyalty to the bank.

Over a period of one year, Mr. Burns systematically diverted $12,000 (an amount somewhat larger than his yearly salary) into his personal account at the bank.

APPENDIX D

CASE B: FACTS FOR THE DEFENSE ATTORNEY

Mr. Burns' motivation

In the year immediately preceeding the year in which the funds were embezzled, Mr. Burns' son had become seriously ill, necessitating extensive and costly medical care (much of which was not covered by insurance). Shortly thereafter. (approximately one month before the first funds were diverted) his son-in-law was killed in an accident, leaving Mr. Burns' daughter with a small child and only a minimal income from a ludicrously small insurance policy. Mr. Burns felt obligated to assist his daughter in meeting her financial obligations.

Mr. Burns' work record

Mr. Burns was known as one of the bank's most reliable employees. He always arrived for work early and frequently stayed late when there was work to be done. In his 23 years of service, he had taken only 25 sick days.

Character references

Five of Mr. Burns' coworkers have testified that, in their opinions, he was a scrupulously honest man and that he must have been driven to commit the crime because of the terrible financial strain he had been placed under.

APPENDIX E

CASE B: FACTS FOR THE PROSECUTING ATTORNEY

Mr. Burns' past 'record'

Though Mr. Burns has never been in any kind of trouble with the law (except for traffic violations), an investigator working for the district attorney's office has found that while a senior in high school, Mr. Burns had gotten into serious trouble when it was found that he had used some funds from the school chess club (of which he had been elected treasurer) to meet some personal expenses. He was saved from expulsion when his father agreed to reimburse the club with interest.

The manner in which the $12,000 was spent

The district attorney's office has found that Mr. Burns gave roughly $3,000 to his recently widowed daughter during the year in which the funds were embezzled and that medical expenses incurred by his son (paid for largely by Mr. Burns) totaled just under $4,000. Mr. Burns recently purchased a new car and paid the purchase price of $3,750 in cash.

Attempted involvement of an innocent teller

Mr. Burns supervised five young tellers. He had attempted to alter the books in such a manner as to minimize the possibility that the embezzlement would ever be discovered; however, he calously performed his book-keeping maneuvers on the work-sheets of only one of his five tellers (a young man who, as a teenager, had once been convicted of petty larceny and whom the bank had unenthusiastically hired under pressure from a local civic group pressing for rehabilitation programs for juvenile offenders). He had done this, presumably, in the hope that if the embezzlement were to be discovered, it would be blamed on this teller.

APPENDIX F

PREPARATION OF THE FICTIONAL CRIMINAL CASE

Before presentation, the information in Appendices C, D, and E was arranged so that the defense attorney's facts followed the general information half the time and the prosecuting attorney's facts followed the general information half the time. This was done to eliminate distortion due to primacy or recency effects.

The material was then presented to 100 students at Nassau Community College, accompanied by the following instructions:

> "On the pages which follow, a fictional criminal case is discussed. The case is described on three separate pages. One page briefly describes the essentials of the case, another provides three facts which a defense attorney might use in defending the accused, and a third provides three facts which a prosecutor might use in prosecuting the accused.
>
> "You are to assume that the defendant has, in fact, committed the crime of which he has been accused. The issue to be decided upon is the length of the sentence to be imposed. After reading all the material and giving some thought to all the factors involved, simply indicate on the front of the first page the prison term you consider to be fair."

It was decided that when the case was presented to the subjects in the experiment, a maximum penalty, set at one standard deviation above the mean prison term chosen by the

Nassau students, would be specified. Similarly, a minimum penalty, set at one standard deviation below the mean, would also be indicated. A discussion of the pilot study, on the basis of which this and other decisions were made, is contained in Appendix G.

Case B, with maximum and minimum penalties now specified, was then given to 100 male students from the classes in which the subjects for the experiment had been recruited and they were read the following instructions:

> "On the pages which follow, a fictional criminal case is discussed. The case is described on three separate pages. One page briefly describes the crime which has been committed, another provides information which the defendant's lawyer might use in defending him, and a third provides information which might be of use to the prosecuting attorney.
>
> "You are to assume that Mr. Burns (the defendant) has, in fact, committed the embezzlement of which he has been accused. The issue to be decided upon is the length of the sentence to be imposed. The maximum penalty is 9½ years and the minimum is 6 months. After considering all the information, please indicate on the front of the first sheet what you feel would be a fair sentence in this particular case."

It was with the mean sentence from this group (37 months) that sentences arrived at by the experimental dyads were then compared.

APPENDIX G

THE PILOT STUDY

A pilot study, involving 26 dyads, was conducted, in order to obtain information concerning such mechanical matters as placement of microphones, etc. and in order to assess the feasibility of four tentative hypotheses.

The first hypothesis was that subjects would talk more during negotiation sessions held in their dormatory rooms than in sessions held in their opponents' rooms. It was predicted that subjects in their own rooms would hold the floor for longer periods of time (as reflected in average floor time) and, similarly, that summed floor time for home subjects would be greater.

In addition to the parameters previously used by other investigators, a new measure was defined for purposes of the present study. During instances of simultaneous speech, note was made of which participant ceased speaking and which participant continued. The speaker who continued was credited with an override. Note that the definition of an override does not involve specification of which speaker was holding the floor at the time that the simultaneous speech occured. The manner in which overrides were scored is presented diagrammatically in Figure 2.

---

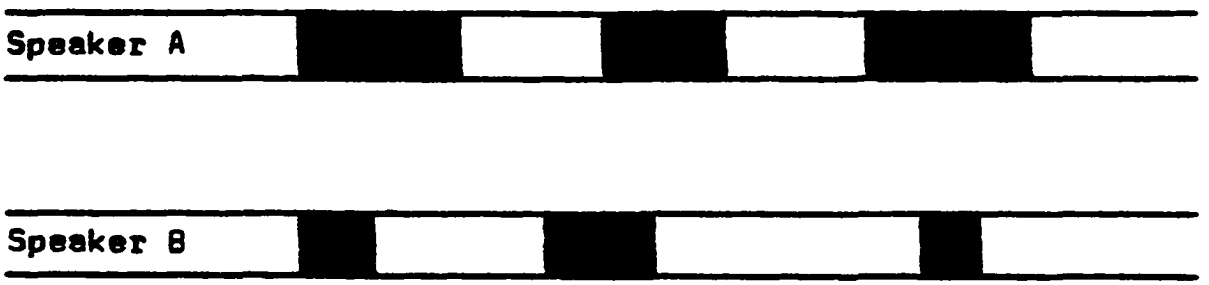
insert Figure 2 about here

The second hypothesis was that during instances of simultaneous speech, home subjects would tend to override their opponents. Though simultaneous speech had been investigated previously in several studies (Feldstein, in press; Jaffe & Feldstein, 1970; and, Marcus, 1970) and interruption behavior had likewise been studied (Weins, Saslow, & Matarazzo, 1966), the override, as defined by this investigator, had not received any experimental attention. This hypothesis expressed the expectation that during instances of simultaneous speech, the visiting subject would be more likely to cease talking, in deference to the home subject. Data collected during the pilot study failed to reflect any differences between home subjects and visiting subjects with regard to the number of overrides.

The third hypothesis relating to structural aspects of the verbal interaction between the participants was that the average duration of the home subject's pauses would be greater than the average duration of the visiting subject's pauses. Jaffe and Feldstein (1970, pp. 32 & 33) found vocalizations to be statistically independent of pauses. In view of the fact that pauses and vocalizations make the most substantial contribution to the combination parameter of floor time, it would seem unlikely (on the basis of the Jaffe and Feldstein

FIGURE 2

DIAGRAMMATIC REPRESENTATION OF OVERRIDES



Note: In each of the three instances of simultaneous speech represented above, Speaker A scores an override. Shading indicates the presence of sound.

finding) that there might be a significant positive correlation between average floor time and average pause duration (which would be required if hypotheses one and three were both to be confirmed). In the studies reported by Jaffe and Feldstein, however, the contexts within which conversation took place were noncompetitive, whereas in the present study the subjects were interacting competitively. It had been felt that, despite the findings reported by Jaffe and Feldstein, hypothesis three was, never-the-less, tenable, in view of the contextual differences between the present study and those discussed by Jaffe and Feldstein. Pilot data, however, revealed no appreciable differences between home subjects and visiting subjects with regard to average pause duration.

The final hypothesis was that home subjects would win more negotiations than visiting subjects. The data collected in the pilot study, relating to hypothesis four, were encouraging; however, it was revealed in interviews with the subjects, conducted at the conclusion of each experimental session, that frequently a subject failed to adequately play the role to which he had been assigned and allowed privately held views to actively influence him in reaching a settlement with the opposing subject. The problem was compounded by the fact that subjects had been randomly assigned to roles, thereby creating a situation in which, on occasion, neither subject was playing the role which he would have chosen had be been given the opportunity to choose.

Allowing subjects to indicate which role they preferred playing was considred, but it was felt that if this method were to be employed, personality characteristics associated with role preference (and, possibly, also associated with dominance) might distort the findings. An effort was made, therefore, to stress, in the instructions given to the subjects, the importance of attempting to view the case from the perspective of the attorney whose role they had been assigned to play.

Based upon the findings of the pilot study, it was decided that the experiment would confine itself to an investigation of the two hypotheses stated on p. 13.

Methodological decisions made on the basis of pilot research

The use of only one fictional criminal case. In the pilot study, three cases were used and it was found that only one case (case B) consistently evoked active negotiation. The tentative decision to use three cases had been based upon the assumption that subjects who had not yet participated in the study might obtain information concerning a case and that the use of more than one case would diminish the problems resulting from this sort of information leakage. It was determined in the initial weeks of pilot research, however, that information concerning the cases was not being passed around; thus, it seemed advisable to use the one case which was most stimulating to the subjects, rather than use all three cases.

The establishment of maximum and minimum penalties. In the pilot study the three cases were presented to some dyads without specified maximum and minimum penalties and it was found that without the structure which they provided, subjects frequently set unrealistic goals. In one case, the prosecuting attorney's conception of a stiff penalty (and the sentence for which he was mentally 'aiming') was of shorter duration than the prison term which the defense attorney had conceptualized as the brief term for which he would 'aim.' It thus became obvious that providing a frame of reference was necessary.

Availability of the experimenter. It had been found in the pilot study that when the experimenter was available - in the hall, for example - the subjects occasionally interrupted their negotiation to ask for clarification of an ambiguity in the case, whereas when it was made clear that the experimenter would not be available, the interaction went uninterrupted. The subjects simply argued concerning their differing interpretations of certain aspects of the case. It was, therefore, decided that the experimenter would, in his remarks to the subjects, let them know that he would be leaving the building (after monitoring the first minute or two of their conversation).

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