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SIMULATION STUDIES OF  
COMMUNICATION BEHAVIOR UNDER STRESS:  
PHASES ONE AND TWO

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UNDER STRESS: PHASES ONE AND TWO

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## SIMULATION STUDIES OF COMMUNICATION BEHAVIOR UNDER STRESS: PHASES ONE AND TWO

Starting in late 1967 the Laboratory Studies Section of the Disaster Research Center (DRC) at The Ohio State University began research on communicative behavior, especially of a cross-cultural nature. This work, which assumes that interaction between persons from different cultural backgrounds is somewhat of a stress situation, continued all through 1968. As initially projected, the research is to go through five phases: (1) a pilot laboratory observational phase; (2) a systematic laboratory observational phase; (3) a systematic laboratory experimental phase; (4) a training observational phase; and (5) a systematic field-testing phase. This report covers the work done in phases one and two. The research effort involved has encompassed the following activities.

1. An examination was made of both the theoretical literature as well as more popular accounts -- usually of an autobiographical kind -- dealing with interactions of persons from different cultural backgrounds. A total of 188 publications in the English language were compiled in a bibliography. A majority of these items were examined but abstracts were made of only 50 of the more relevant sources. Particular attention was paid to: (1) items that dealt with training programs for people who were going to live in a culture other than their own (e.g., some of the Air Force programs for personnel going to foreign bases) and the assumptions made about the nature of the interaction involved; and (2) the kinds of "critical" incidents reported in autobiographical accounts that seemed to exemplify specific problem areas in cross-cultural interaction; and (3) the procedures and techniques used in previous social science research to study interaction of persons from different cultural backgrounds. This material was later used in the development of a conceptual and theoretical framework to guide our research as well as aiding in the design of specific aspects of the laboratory work.

2. Semi-structured interviews were conducted with about a dozen international students at The Ohio State University, and also with some American graduate students in sociology who had had considerable experience in living in a foreign culture. As we had done in the literature review, an effort was made to ascertain "critical" incidents and difficulties that had arisen in the course of their experiences in whatever for them was a foreign cultural setting. These interviews with students were of particular value because the later laboratory sessions used college and university students almost exclusively as the subjects of study.

3. A series of pilot observational studies were conducted in the laboratory. These studies had a threefold purpose: (1) to ascertain the practical problems and difficulties involved in mounting studies of cross-cultural interaction in a laboratory setting; (2) to see if problems of cross-cultural interaction would manifest themselves relatively

easily in a laboratory setting where students were being used as subjects, or if special techniques or other kinds of subjects were needed to conduct this kind of study; and (3) to derive some guiding hypotheses from the semi-structured observations that were made. At this stage there was no pretense of testing hypotheses or even making very systematic observations. The object here was parallel to that in earlier DRC pilot studies in the laboratory when the focus was on organizational behavior. It was to see if cross-cultural interaction could be meaningfully examined in this kind of research setting, what techniques needed to be used, and what general hypotheses could be inductively derived from the observations made.

In the past, most research in this area has been done in one of two ways. First, there has been a series of studies which have attempted to determine attitudes of foreigners towards the United States. The techniques most often employed have been questionnaires and/or interviews administered to exchange students or government representatives from abroad. A second series of studies, using primarily observational techniques, have attempted to analyze the types of problems an alien faces while interacting in a foreign environment. Such concepts as role and culture shock, cultural fatigue, etc., as they relate to interaction effectiveness in a cross-cultural setting have been advanced. While there have been some exceptions (such as the self-confrontation studies done by the Air Force at Wright Patterson), few studies have attempted to create conditions in a laboratory setting in which problems of cross-cultural interaction could manifest themselves.

The major focus of the pilot studies conducted over a three-month period was on the observation and recording in the laboratory of cross-cultural interaction as it progressed and the ways it differed, if any, from more culturally homogeneous interaction. For this purpose, two types of laboratory sessions were conducted. The first involved the separate observation of two culturally homogeneous groups. One group was made up of Americans, the other of Indians, all graduate students at the university. Both groups were given an issue to discuss with instructions to arrive at some sort of consensus about that issue and to write what they collectively agreed to upon a blackboard. Each group was given an hour to perform the assigned task. The second type of laboratory session was more specifically focused on cross-cultural interaction. Four groups were used in these sessions. Each involved four-man groups composed of one of the Americans who had participated in the earlier all-American session, one Indian who had similarly participated with the other Indians, one Japanese student, and one Thai student. These culturally heterogeneous groups were assigned the same kind of discussion task which characterized the first type of session, but the substantive topics were changed.

Among the kinds of data collected were the following: (1) observational data -- notes were taken on the gestures and other physical activities of the members of the groups during the sessions; (2) verbal data -- all sessions were tape recorded and later transcribed; (3) interview data -- eleven standardized questions were asked of each group member in a post-session interview; (4) questionnaire data -- each group member completed a questionnaire which called for census-like information about himself; and (5) sentence completion data -- each group member filled out a 33-item sentence completion test.

No serious practical problems appeared in the pilot studies. International subjects seemed to adjust to the laboratory setting and the demands of the research operation as well as American subjects did. At an impressionistic level, it was obvious after just a very few sessions that certain kinds of cross-cultural problems in interaction could be easily observed and studied. Without denying that certain aspects might require special techniques or procedures, it was clear that many difficulties in cross-cultural interaction lent themselves to examination through previously used DRC laboratory techniques and that for the research purposes involved, students could be validly used as laboratory subjects. A videotape-playback-recorder machine was especially useful in making these preliminary observations.

Of more substantive interest were the ideas derived from the observations made. The major finding of the pilot study can be summarized in one sentence and it is that in cross-cultural interaction, members of both groups in the interaction will modify their normal behavioral patterns. Thus, it is not enough as earlier studies have done, to look at only the behavior of foreigners in the United States or at the behavior of Americans overseas in order to understand cross-cultural interaction. The "native" group member in the interaction also changes his behavior when in such situations. This suggests a convergence hypothesis, i.e., that members of all groups change their behavior in such a way as to come closer to the norms of the other group.

This can be seen in the length of contribution made by each individual to the group's discussion. For example, Americans made significantly longer individual contributions than Indians in the culturally homogeneous sessions, but groups "converged" in the culturally heterogeneous sessions. Americans decreased their statement lengths and Indians increased their statement lengths when in the cross-cultural situation. The general type of statement made by group members in culturally heterogeneous interactions as contrasted to culturally homogeneous interactions also supports the convergence hypothesis. Thus, Americans increased the number of their supportive statements when in cross-cultural interaction and in a rather dramatic fashion -- from two to three times as many supportive statements were made by Americans in sessions involving international participants than were made in the all-American group.

However, while Americans increased their supportive statements substantially, they still fell below the norms of other groups. In contrast, for example, the Indians did not increase their support levels. Rather they decreased the number of negative comments they made in a cross-cultural context. In this respect they were no more successful than the Americans were in their change of supportive statements. Although the Indians did decrease their negative remarks, their new level was still above the American group norm for negative comments.

Some other differences between the groups also stood out. Thai and Japanese students had very low rates of participation in the culturally heterogeneous sessions, especially when compared with the Indians. The latter, furthermore, seemed not to be constrained by the general American norm that only one participant at a time should speak at such a kind of meeting. The consequence was that the all-Indian session often became a quadrilogue with all the members speaking at once. Likewise, the Indians seemed much less constrained by the physical setting than all the members from other cultures including the American. They freely moved around the laboratory room and continued to participate in the discussion, whereas the other nationals tended to fall silent if they moved away from the center of the group.

These and other observed and recorded differences that could be cited did suggest a number of hypotheses that could be explored more systematically. These were incorporated into the next series of laboratory studies conducted, as discussed below.

4. A series of systematic observational studies were conducted in the laboratory. This research differed from the pilot studies in that more systematic observations were obtained and there was an attempt to pose pre-session questions. In this latter sense, a very gross examination of very general hypotheses was undertaken. In this series of laboratory studies, five somewhat different sets of sessions were run.

a) One set of sessions was conducted to determine what might be involved in the low participation of Thai and of Japanese nationals in the earlier laboratory sessions. Post-session interview data suggested two possible explanations: lack of self-confidence in the fluent use of the English language, and in the case of the Thai subjects very conscious and voiced self-identification of themselves as members of a very "small" country in interaction with perceived representatives of very "large" nations (i.e., Japan, India and the United States).

To examine these possibilities separate discussion sessions were held composed of all-Japanese and all-Thai subjects conversing exclusively in their own native languages. In the case of the Japanese nationals the results were inconclusive in that the discussion was not very intense even when the subjects conversed fluently in their own language. The Thai nationals, on the other hand, when in a group composed of Thais engaged in very intensive and extensive interaction suggesting some possible validity to the idea that low self-confidence

in the use of the English language was a factor in the earlier studies. However, this explanation remains moot for in an English-speaking session with nationals from other small countries (i.e., from Peru, Turkey and Ethiopia), the Thai representative reverted back to low participation in the group discussion. Overall, the results hint that perceived language fluency may be a factor but that other aspects probably are just as important (if not more so) in affecting cross-cultural interaction.

b) Another set of sessions was run to see how members of different societies behaved under the stress of an instructional situation. In part, this research was aimed at ascertaining if Americans behaved differently from other nationals in an instructional cross-cultural context. One of the suppositions was that they would be less tolerant of opposition. It was also thought that an instructional session would provide an analogue to a "field" situation in which an American officer is involved in teaching or instructing his host counterpart.

The initial research design involved instructors from Western nations and "students" from a non-Western society (Ethiopia). The instructor first presented a lecture, the non-Western national then performed the task indicated, and finally the instructor criticized the work done. Instructors, graduate students in journalism from the United States and Canada, were used to lecture on the proper way to write a newspaper story. The student then had to write his story from a color but soundless film of rescue activities during a flood.

A second research design called for the instructor himself to be placed under stress. This was accomplished by using a confederate posing as the student to be instructed and having him openly disagree with the instructional points made. The confederate was coached to disagree on a cultural rather than personal level by taking the position that newspaper stories were written in a different way in his own country (e.g., India). In a way, the confederate played the role of "contrast" American or Canadian. The general format followed was the same as in the previous instructional session except that a different film was used, one of a riot situation.

A third research design differed from the previous two in that an effort was made to have a more "group" kind of learning context. The basic format was the use of a four-man group composed of three "students" and one "instructor-consultant." The students were Indians but the instructor in one situation was an American, in another he was a Peruvian. The task in this case was for the instructor to present a short discussion of various propaganda devices followed by a collective student effort to write a piece of propaganda using the instructor as a consultant, if they desired, as they went along.

The full series of studies designed could not all be completed as was intended because of unanticipated difficulties such as the loss of one of the instructors in the middle of the study. A detailed analysis is yet to be done on the data gathered, but a preliminary examination does not indicate as many differences and as many difficulties in the cross-cultural interaction in this kind of learning situation as had

been anticipated. The two initial impressions are that the American instructor did become openly hostile and aggressive in the face of "resistance" on the part of the unknown DRC confederate, and that important assumptions about the nature of the learning tasks that are used in this kind of research need to be examined more closely. All of this will be examined more closely in later research.

c) Another set of sessions built upon the initial pilot study format of culturally homogeneous and culturally heterogeneous four-men groups. An all-American group, one composed of Indians and four groups made up of nationals from four different societies were formed. The general point examined was the supposition that a member's prediction of the behavior of others in his group would be less certain in the culturally heterogeneous than in the culturally homogeneous situation. It was also thought that this "lack of predictability" might contribute to the well recognized phenomena of cultural shock. The basic research technique used was for the DRC laboratory staff members to interrupt a group discussion, and to ask each member over a telephone net which group member would speak next, if the remarks were going to agree or disagree with the interrupted speaker, and how certain the respondent was of his prediction.

While the systematic analysis of the data has not yet been completed, initial impressions suggest that contrary to the supposition made there was little difference in the predicting capability of culturally homogeneous and of culturally heterogeneous group members. Of interest was the tendency of most interrupted subjects to predict that they were going to be the next speaker. This is in line with a well-known gestalt principle about continuity of interrupted behavior. However, this phenomena sharply cutting across different cultural backgrounds as it did, suggests the necessity of constantly keeping in mind that there may be important human universals as well as differences in cross-cultural interactions.

d) Still other sessions -- six in number -- were run to examine an alternative hypothesis to the convergence hypothesis discussed earlier. This is the notion that cutting across cultural differences there may exist a generalized norm on how to behave with "strangers" (i.e., persons from outside one's own culture). The format of these sessions were essentially similar to the earlier pilot studies from which the convergence hypothesis was derived, but more systematic observational procedures were used in these later sessions.

Analysis of this data is in process. Initial impressions indicate some degree of possible validity to the idea that there is a generalized norm on how to behave with strangers. If so, it raises an interesting question if whether such a norm would facilitate or work against the process involved in the convergence hypothesis discussed earlier. Further research would seem necessary on this point.

e) Three additional sessions were conducted in an attempt to see if a laboratory setting of a different kind would produce a wider range of interactions than either the discussion or instructional setting used in almost all the other sessions. In two instances, subjects were required to play the game of Monopoly or Risk. In the other instance, the situation was left completely unstructured.

Initial observations clearly indicate that bargaining behavior was elicited from these kinds of situations that was not present in the discussion or instructional types of sessions. Such behavior is sometimes of high salience in cross-cultural interaction and thus worthy of attention. However, the few pilot studies conducted uncovered some serious observational and control problems in undertaking such kind of laboratory research. These will have to be solved before systematic work can be done along this line.

5. A data retrieval system was developed. The accumulation of different kinds of information from many and varied sessions forced thinking about and the establishment of a system for quickly retrieving data. After experimenting with several possible systems, one using McBee cards was found to be most useful for the purposes of the laboratory research on cross-cultural interaction. The system had been set up in such a way as to allow substantial expansion and also transference of the information in the future to more elaborate systems. An effort was made in developing the present system so that the specific identity of participants in the laboratory research can be ascertained only by the DRC laboratory director. This, therefore, assures almost complete confidentiality about the data obtained.

6. Work was undertaken on making more explicit some of the methodological and theoretical implications of the laboratory studies up to this point. Among others, some attention has been given to the following.

a) Up to the present, 50 different nationals (all male, university students) from 16 different countries have been used in the laboratory sessions. Consideration has been given to including in future research studies, female subjects, nationals from still other societies, and non-students. Some attention has also been paid to the advantages and disadvantages of bringing into the laboratory already organized student groups (such as the OSU Indian Student Association), especially as the research moves closer to the test designing of a cross-cultural training program. Depending somewhat upon the findings from the more systematic analyses of data that will be undertaken, later decisions will be made about what changes, if any, in the kinds of laboratory subjects to be used.

b) Work also continued on developing an overall theoretical framework and a conceptual vocabulary for discussing cross-cultural interaction. However, the finalization of this still seems sometime away, since even the initial impressions and more systematic findings have

not yet been fully assembled and integrated. In this connection, work has started on papers dealing with different aspects of the laboratory studies. Following are the titles of three articles now in draft form:

- (1) "Cross-Cultural Interaction in the Laboratory Setting: A Research Program."
- (2) "Adaptation and Convergence in Cross-Cultural Interaction."
- (3) "A Discussion of Critical Variables in the Study of Cross-Cultural Interaction."

c) Some time has likewise been spent in insuring that the current and immediate research projected is continually related to the ultimate goal of a systematic field testing of propositions about cross-cultural interaction. In this connection, a visit by Dr. Roth, as part of a three-man evaluation team to the Air University at Maxwell Air Force Base at Montgomery, Alabama, was most useful. It provided considerable insight into the assumptions that are made and the problems that are focused on in a major cross-cultural training program and suggested a number of possible variables that could be incorporated into both the upcoming laboratory and contemplated field research of the DRC staff with regard to cross-cultural interaction.