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Group Psychology Branch

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DEPARTMENT OF PSYCHOLOGY
UNIVERSITY OF ILLINOIS
URBANA, ILLINOIS



SEARCHED FOR		
INDEXED	FILED	DATE
* WARE SECTION		
OFF SECTION		
<i>no restriction indicated</i>		
CLASSIFICATION CODE		
REG.	AVAIL.	SPECIAL

Quarterly Report
October 31, 1965

Group and Organizational Factors
Influencing Creativity

Amended to Include

Communication, Cooperation and Negotiation
In Culturally Heterogeneous Groups

Report of Progress under Contract ARPA Order No. 454,
Project Code 2070 Nonr-1834(36) with the Office of Naval Research

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Sub-Project I (H.C. Triandis)

The strategy of this sub-project is to develop procedures for the measurement of attitudes and values relevant to cross-cultural contacts and to test the importance of these constructs in negotiation situations involving interaction between persons from different cultures.

The first concern of this project is to develop procedures for the measurement of denotative meaning. We are currently conducting three studies. These employ procedures that tap significant differences in the way people perceive important features of their environment. This work is in progress in Illinois, Tokyo, Mysore (India), and Athens (Greece).

The second concern of this sub-project is with the measurement of norms of interpersonal behavior as well as role perceptions. A number of new instruments have been developed to tap the interpersonal behavior norms of people in various cultures. Four different studies examine procedures which permit the elicitation of norms of interpersonal behaviors that may be significant for effective interpersonal behavior in different cultures. These studies should enable us to determine the most effective procedures for obtaining information of this kind from a given culture. We are also exploring the effect of cultural differences in interpersonal behavior norms and the relationship between the information that we obtain from our instruments and the characteristics of the persons who give this information.

One of our current studies has uncovered a strong relationship between sociological and demographic characteristics of the subjects and the type of information obtained from them. Another study attempted to discover the effect of regional differences within a relatively homogeneous country, such as Greece, in measures of interpersonal behavior norms. If the regional and social class differences between subjects are a major determinant of the results that we obtain from these instruments, then we must explicitly

introduce regional and sociological controls in the design of our future experiments employing these particular measurement procedures.

Data to compare norms of interpersonal behavior have been obtained from India, Japan, and from German students, as well as from Negro and white American students in Illinois, permitting comparisons between the behavioral intentions of college students from these cultures. Technical reports are now in preparation that give substantive information about the similarities and differences in the norms of interpersonal behavior in Illinois, Japan and Mysore State (India). The data will also be analyzed by means of the recently developed three-mode factor analysis, which appears to provide an especially rigorous way of making cultural comparisons. Furthermore, one of our studies is investigating the way many-faceted information is used in the making of judgments by persons belonging to different cultures. This study seeks to determine whether consistent cognitive phenomena discovered in the United States also appear in cognitive studies in other cultures.

All the studies mentioned above tap certain characteristics of the cognitive processes of individuals belonging to different cultures. The problem is whether some features of these cognitive processes are more important in intercultural contacts than others. We need to learn more about the relative importance of cognitive differences in situations of intercultural contact. We have chosen intercultural negotiations as the area in which to test the relevance and importance of the differences in cognitive processes that are tapped by our various instruments.

Two of our studies explore the relevance and importance of our cognitive variables in situations involving intercultural negotiations. Two other studies attempt to develop a methodology for the study of intercultural negotiations. In the first of these studies we employed for the first time monolingual individuals who negotiated through the use of interpreters. This

study was valuable primarily in showing the kinds of variables that we must control in future studies of negotiations between people who speak different languages.

The methodological problems of research involving attitude measurement in different cultures are so formidable that we must proceed with great care and thoroughness before committing ourselves to a particular methodology. A major effort is devoted to explorations of some of the methodological problems that are relevant to the measurement of personality and attitudes across cultures.

Finally, even if we find that the cultural differences in cognition measured by the previously mentioned studies make an important difference, as tested in studies of intercultural negotiations, we must explore the kinds of additional information that a person ought to have in order to operate effectively in another culture. Some of this additional information must be obtained with qualitative rather than quantitative analyses. One of our studies employed both an unstructured and a structured data gathering procedure to determine the kinds of additional information that may be required for effective operation in another culture.

Summary Statement. The strategy of this sub-project, then, is to develop procedures which tap significant features of the cognitive processes of individuals belonging to different cultures; to test the significance of differences in cognitive functioning across different cultures on the behavior of people who are operating in intercultural negotiation situations; to organize this information into meaningful wholes; and to feed the information that is important and relevant for effective behavior in intercultural situations to the researchers in sub-project II who will then place this information in culture assimilators.

A detailed description of the studies being conducted by this sub-project is attached.

Sub-Project II (I.M. Stolurow)

The main task of this sub-project is the development of culture assimilator programs; that is, self-instructional training, either by means of programmed manuals or computer based systems. A number of investigations deal with methodological problems essential for the development of culture assimilators. These have been described in previous reports. In particular, an executive program for controlling the new MASTER I/O (input-output) interface units has been written. This is a combination of a FORTRAN mainline program which handled the decision rules and input-output, along with several Symbolic Programming System (SPS) subroutines for the control system operations. Programmers who know the SPS language will need only to write those portions of the program necessary for controlling the unique portions of a study.

A study partially supported by this contract has been completed using SOCRATES (System for Organizing Content to Review and Teach Educational Subjects). This study, by Frase, investigated the relative effects of word meanings vs. formal structure on one's ability to do logical reasoning. (Frase, L.T., "Validity judgments of syllogisms in relation to two sets of individual terms", unpublished Ph.D. dissertation, U. of I., 1965.) One short culture assimilator film for SOCRATES was produced; additional materials are in preparation for a longer film sequence to be used in a study using a culture assimilator on line.

A replication of Frase's study (1963) has been conducted by D. Parisi ("Social reinforcement and performance in programmed learning in Italy", T.R. #27, October, 1965). This is a study of the effects of social reinforcement (evaluative feedback) on performance in a programmed learning task. The four experimental conditions that determined the treatment groups were: (1) positive; (2) negative; (3) positive and negative; and (4) no social reinforcement. Informational but not evaluative feedback in the branching program used in the experiment was identical for all groups. One hundred

eight Italian male high school students were randomly assigned to the four treatment groups.

Results indicate that negative evaluative feedback produced the larger variance in achievement test scores. Performance level was higher when negative reinforcement was given than when it was not given. Positive evaluative feedback did not affect performance. These results are consistent with data obtained from American students.

The number of significant correlations between achievement on the one hand, and verbal and abstract reasoning aptitudes and 16 PF intelligence factors on the other hand, tended to decrease with increasing social reinforcement conditions. Social reinforcement attenuated the usual correlation between intelligence and achievement test performance following programmed learning.

Performance on an achievement test was related to such personality variables as deference or lack of need for autonomy when social reinforcement was used; however, no such relationships held when no social reinforcement was given. In the latter case, performance was related to achievement and exhibitionism.

Attitude toward programmed instruction as measured after programmed experience was related to attitude pretest under maximum reinforcement conditions, but the relationship decreased with decreasing social reinforcement and disappeared when no social reinforcement was used.

As opposed to Frase's study, Italian students who scored high on aggression did not prefer the program which criticized them for errors (condition 2 above).

A third phase of the work being done by sub-project II involves research on and development of culture assimilators. The culture assimilator is a project designed to increase the effectiveness of social interaction when people from different cultures are involved. It is an attempt to provide the

learner with the essential skills and knowledge that he needs in acquiring cultural sensitivity.

The culture assimilator does not merely provide the learner with facts about the culture he is studying. Instead, along with some pertinent facts, the learner is given the opportunity to learn the culture by ways of analysis, interpretation and discrimination of various social interactional situations.

This particular phase is divided into two areas: (a) methodological-preparatory studies; and (b) experimental version studies. Progress in these two areas is reported below.

(a) Methodological-preparatory studies. A neglected field in teaching is culture assimilation and social interaction. The skills used in adjusting to, and working effectively with, individuals with different values, attitudes and beliefs, are obviously acquired and can be developed through training.

Two approaches to training are identified: (1) "Cultural shock" in which the individual is totally immersed in the unfamiliar situation and must immediately adjust to operate with any degree of efficiency, and (2) a systems approach which simulates conditions, the utility of which could be determined in cultural interactions and used as the objectives of a training program. The culture assimilator is conceived as a complex instrument that teaches individuals to be analytical and reflective about interactions with others. Its development requires several stages: (a) obtaining incidents, and (b) using individuals from the target population to interpret and provide responses to semantic and behavioral differentials.

A forthcoming technical report by Stolurow and Koopman will indicate some ways in which Arabs and Americans differ. These differences are the foci of attention for the discrimination sequences in the assimilator.

(b) Experimental version studies. The culture assimilator pilot program was completed. The target culture was Arab and background data for the Arab culture were gathered from critical incidents and semantic and

behavioral differentials. The program consisted of a pre- and post-test and two booklets. The entire time taken for completion of the program was three and one-half hours. There were twenty-six students used in the initial tryout. Fourteen students in the experimental group (those using similarly constructed programs on Arab geography). A discussion of the results of the tryout are reported under the heading of "Study G" in sub-project III.

Initial steps were taken toward revising the Arab Culture Assimilator, and a small working draft dealing with culture change was prepared. Also a draft of a flow chart was devised as a first step toward computerizing the Assimilator Program. Plans were made and work started on greatly enlarging the working draft of the Assimilator for the two-fold purpose of creating a more polished complete program for future testing purposes and ultimately using this program as a model from which assimilators dealing with other cultures and problem areas can be built.

A tentative series of technical reports was outlined and work was begun on them. The first one has been completed and is ready for final editing.

Two new members joined the culture assimilator group: Sutitha Santhai, in July; and John Symonds, in September. The major function thus far has been in orienting them as to what activity has gone on in the past in the building of a culture assimilator, and in acquainting them with programming procedures, preparatory to taking on the job of revising and rewriting the entire Arab culture assimilator as referred to above.

Sub-Project III (F.E. Fiedler)

This sub-project has two major purposes. The first of these is the development of a theory of leadership and group performance to provide guide lines for the management of groups with culturally heterogeneous as well as homogeneous membership. The second major purpose is the validation of methods and procedures used in cultural assimilator training. The emphasis here has been on providing experimentally sound laboratory and field studies which permit the comparison of culturally trained and untrained group leaders and members in the performance on tasks requiring cooperation and negotiation. It is, thus, the proving ground for work developed under sub-projects I and II.

Development of leadership and organizational theory. The program of research, conducted under the present contract as well as preceding ONR contracts, has led to a theory of leadership which proposes that the leadership style required for effective group performance is contingent upon the degree to which the group and task situation is favorable or unfavorable for the leader. The leader's style has been measured by means of interpersonal perception scores (Esteem for Least Preferred Co-worker, LPC) which indicate whether the leader is permissive, considerate, non-directive, therapeutic in his interaction with his group, or managing, task-controlling, directive. The difficulty of the situation is conceptually defined in terms of the leader's ability to exert influence and power over group behavior.

Our research has shown that a managing, controlling leadership style is most effective under conditions which are very favorable for the leader, as well as those which are relatively unfavorable. A permissive, considerate style is most effective in situations which are only moderately favorable or unfavorable for the leader. The specific operational definitions for measuring situational favorableness were described in several reports and papers (Fiedler, 1963, 1964, 1965).

The theory has been supported in a study using heterocultural groups conducted in cooperation with the Belgian navy and the Center for Social Studies of the Ministry for National Defense of Belgium (Fiedler, 1965, T.R. #25), as well as subsequent studies conducted at the "European School" for Common Market children in Brussels (Ninane, in preparation). This study has now received clearance for publication.

Recent studies have considered the effect of stress and of failure on the performance and interpersonal relations of homocultural and heterocultural groups. The study by Ninane at the European School as well as a subsequent study at the University of Illinois, using groups with Chinese members, show the effects on the leader's perceptions and attitudes when told that his group failed in performing its task effectively (T.R. in preparation).

A re-analysis of previously obtained data (Study P), comparing groups under various stress conditions, has shown that the Contingency Model of leadership effectiveness can be generalized to conditions of stress as factors in making the group situation less favorable for the leader. (Fiedler, Mouwese and Hackman, in preparation). This analysis shows the typical curvilinear relationship between leader LPC and group performance: that is, the managing, controlling leader performs best under non-stressful conditions; the permissive, therapeutic, considerate leader performs best under conditions of mild stress; and the managing, directive, controlling leader again performs best under very stressful conditions. This analysis also suggests, however, that an extremely stressful situation might again require a relatively quasi-therapeutic leader. The extremely stressful situation was here developed by having senior army cadets perform creative tasks while being closely observed and rated by a senior army officer of

the rank of colonel, lt. colonel, or major, by being told after the first session that the group had done poorly. In addition, these were also groups which the leader described as highly unpleasant, unaccepting, and frustrating.

Study F: Test of the Contingency Model in industrial organizations. A study by Hunt tests the applicability of the Contingency Model to predicting team performance in industrial organizations, and the model's possible extension to co-acting groups in which members perform parallel tasks which do not directly depend upon the performance of fellow workers.

The major hypothesis of the study was concerned with testing hypotheses derived from the model.

The groups came from a large research laboratory, a grocery chain, and a farm implement manufacturing company. Performance was measured by ratings in some of the samples, and by objective cost and/or production figures where these were available. While the size of the samples in some cases were extremely small, the total number of groups amounted to 67 interacting and 61 co-acting groups. The results supported the model from interacting groups, as well as in the case of co-acting groups.

Figure III-1 shows the correlations between supervisor LPC and team or department performance in various industrial work situations. These are superimposed on the Contingency Model curve which was reported in earlier technical reports (Fiedler, 1963, 1964).

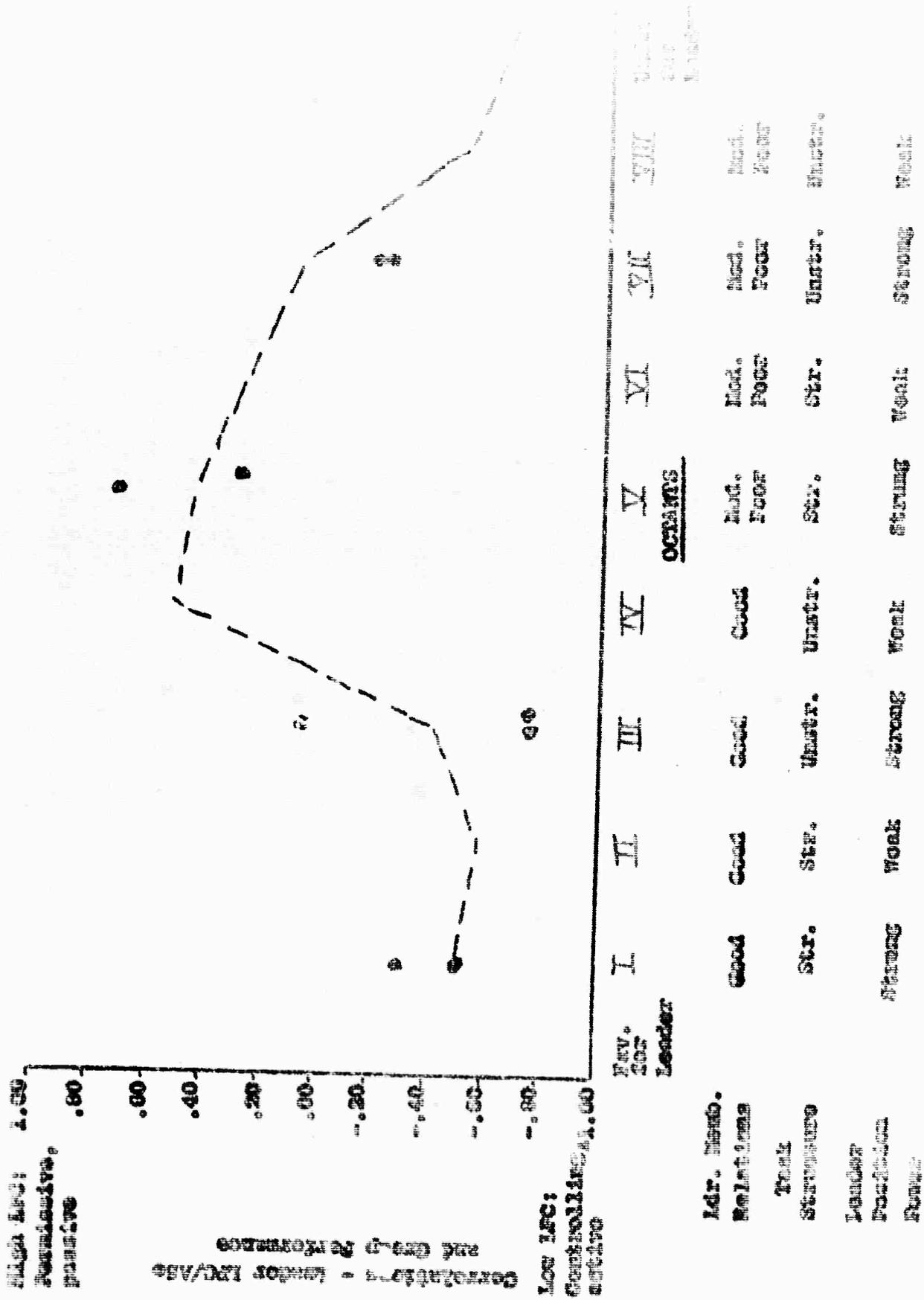


FIGURE VII-1: Correlations between Supervisor LPC and Team Performance in Various Work Situations.

Study G: Effects of Training on Group Performance (M. Chemers and D. Lekhyananda)

A study was conducted to determine the effectiveness of culture assimilator training for improving the performance of Arab-American subjects. Twenty-four groups participated. Each group consisted of one American ROTC cadet, who served as leader, and two Arab graduate students, from the United Arab Republic, who served as members. Twelve Arab subjects served as confederates with instructions to play the part of neutral and cooperative group members and to behave as consistently as possible from group session to group session. Each group performed three tasks: (1) a highly structured routing problem to determine the shortest way through a network of roads; (2) an unstructured task of writing a position paper for policy guidance of an imaginary Arab-American company; and (3) to negotiate on hiring practices of indigenous workers in a joint Arab-American enterprise. Post-session questionnaires were given to obtain group attitude and group climate scores.

The performance on the unstructured and negotiation tasks was evaluated by three Arab and three American judges on the outcomes of the negotiation according to Arab and American standards, respectively. One-half of the group, that is twelve, had leaders who had been trained on a three-hour self-instructional program designed to increase cultural sensitivity of Americans toward Arabs. The other twelve leaders were given the same kind of culturally irrelevant training in mideast geography.

The results of this study in brief outline showed the culturally trained groups to be generally superior on leader-member relations, as measured by the leader's report on his own behavior; members' report on leader's behavior; and combined leader-member evaluation of the group atmosphere. While individual items did not reach significance, the trends clearly show this relationship (Table 1).

Table 1

Trend Effects in Leader-Member Relations

Mean

<u>Scale</u>	<u>Culture</u>	<u>Geog- raphy</u>	<u>Trend</u>	<u>F Score</u>	<u>p</u>
I. Leader's report on:					
(a) leader's effective- ness	23.28	23.83	-	0.11	ns
(b) leader-follower relations	20.53	20.31	+	0.06	ns
(c) perceived heterogeneity of group members	7.47	7.81	-	0.88	ns
II. Members' report on:					
(a) leader's understanding and interest	15.46	14.37	+	3.94	<.05
(b) leader's performance	13.57	13.11	+	0.44	ns
(c) favorability of leader's personality	28.67	27.12	+	1.93	ns
(d) leader's cultural knowledge	4.93	4.67	+	0.74	ns
(e) favorableness of leader of <u>own culture</u>	4.83	4.97*	+	0.21	ns
III. Group Atmosphere (leaders and members)					
(a) stressfulness of situation	24.06	23.63	+	0.50	ns
(b) perceived heterogeneity	6.88	6.80	+	0.07	ns
(c) enjoyment of group	23.19	22.06	+	3.53	<.10

+ Indicates predicted direction

* Lower score denotes better performance.

Similar trends obtained on the ratings of group productivity showing culturally trained leaders to be generally more effective (Table 2).

All leaders were divided on the basis of their LPC scores into groups of considerate, permissive, non-directive (high LPC) and managing, controlling (low LPC) leaders. Table 3 shows the effects of leadership style on member relations: The high LPC leaders achieved a more satisfactory level of leader-member relations. However, low LPC leaders were generally more effective on the cooperative tasks both unstructured and structured, while high LPC leaders performed better on the negotiation tasks (Table 4).

The results of the negotiation task shows an interesting effect which has already been observed in the previous study of Indian-American students (Anderson, T.R. #18, 1964). The culture assimilator training appeared on the one hand to increase the ability of high LPC leaders to perform task-relevant functions and it seemed on the other hand to increase the ability of the low LPC leader in interacting effectively on an interpersonal level. This is suggested by data which indicate (a) low LPC leaders are generally better on the unstructured task than high LPC leaders, and (b) cultural training apparently brought the higher LPC leader up to the same level as his low LPC counterpart. In the negotiation situation high LPC leaders tend to be better than low LPC leaders. The culture assimilator training brought low LPC leaders up to the performance level of high LPC counterparts.

In order to explore the effects of training and cross-cultural group interaction on attitude change, Behavior Differentials were used. Fifteen scales were selected from Triandis' (1964) three factors: (a) social distance, (b) formal social acceptance vs. rejection, and (c) subordination. Stimuli were persons with different combinations of race, sex, and level of education. The American leaders were asked to report their attitudes toward Arabs three times during the experiment. Their attitude scores were the sum of scores on the

Table 2
Trend Effects in Group Productivity

	Culture	Geog- raphy	Trend	F Score	p
I. Unstructured-cooperative task:					
(a) overall acceptability ratings	29.92	29.80	+	.0027	ns
(b) inclusion of American and Arab ideas	32.08	28.17	+	1.63	ns
II. Structured cooperative task:					
(a) time to complete course	60.50	65.33*	+	1.88	ns
III. Negotiation task:					
(a) rating on Arab standard	6.00	6.22*	+	0.28	ns
(b) rating on American standard	5.84	5.14	+	3.69	ns
(c) rating on feasibility	5.55	5.26	+	1.04	ns
(d) ranking on Arab standard	12.44	13.51*	+	0.63	ns
(e) ranking on American standard	16.34	13.49	+	3.87	.15
(f) product of three ratings	218.44	205.92	+	0.67	ns
(g) product of two rankings	183.89	161.61	+	1.75	ns

+ Indicates predicted direction

* Low score denotes higher level of performance

Table 3

Leadership Style and Member Relations

<u>Scale</u>	Mean		Trend High or Low LPC	F Score	p
	High LPC	Low LPC			
I. Leader's report on:					
(a) leader's effectiveness	23.28	23.83	Low	0.12	ns
(b) leader-follower relations	20.53	20.56	High	0.06	ns
(c) perceived heterogeneity	7.47	7.81	Low	0.88	ns
II. Members' report on:					
(a) leader's understanding and interest	15.57	14.26	High	5.72	.025
(b) leader's performance	14.64	12.04	High	14.09	.01
(c) favorability of leader's personality	29.18	26.61	High	5.37	.025
(d) leader's cultural know- ledge	5.00	4.60	High	1.73	ns
(e) favorableness of leader from own culture	4.82	4.99*	High	0.31	ns
III. Group Atmosphere (leaders and members)					
(a) stressfulness of situation	22.93	22.31	High	1.10	ns
(b) enjoyment of group	24.13	23.56	High	.90	ns
(c) perceived heterogeneity	6.88	6.80	High	0.07	ns

* Low score denotes better performance

Table 4
Leadership Style and Group Productivity

Mean

<u>Scale</u>	High LPC	Low LPC	Trend	F Score	p
I. Unstructured cooperative:					
(a) overall rating	27.12	32.60	Low	5.90	.10
(b) American and Arab ideas	29.33	30.92	Low	0.27	ns
II. Structured:					
(a) mean time	64.67	61.17*	Low	0.99	ns
III. Negotiation:					
(a) rating on Arab standard	6.03	6.19*	High	0.17	ns
(b) rating on American standard	6.01	4.97	High	8.04	.05
(c) rating on feasibility	5.58	5.22	High	1.57	ns
(d) ranking on American standard	12.65	13.30*	High	0.23	ns
(e) ranking on Arab standard	16.48	13.36	High	4.63	.10
(f) product of three ratings	218.22	206.14	High	0.62	ns
(g) product of two rankings	166.89	178.61	Low	0.48	ns

* Low score denotes better performance

fifteen scales.

Results in Figure 1 showed that the original attitudes toward Arabs of these two groups of Americans were similar; however, the geography-trained group became significantly more unfavorable ($p < .05$), while the culture-trained group did not change their attitudes toward Arabs. Figure 1 also shows that at all times the attitudes of the leaders in both training conditions were not significantly different from each other. After the cross-cultural interaction all American leaders became significantly more favorable toward the Arabs ($p < .01$) than after the training. Nevertheless, at the end of the face-to-face group interaction, the attitudes of the control leaders were not different from their original attitudes before training. The significant difference between original and post-meeting attitudes was found for the culture leaders ($p < .01$). (The most favorable attitude toward Arabs was shown by the culture group after the group meeting. The most unfavorable attitude was expressed by the geography leaders after receiving the training.)

The relationship between leaders' attitude and the group processes showed that the leaders with a more favorable attitude toward Arabs also saw their Arab co-workers as similar to Americans ($p < .05$). Moreover, the more favorable the leader's original attitude toward Arabs, the more successful he was in persuading his Arab counterparts to accept American standards on the negotiating issue ($r = .432$, $p < .05$). Other relationships were found to be largely insignificant. This may be due to the short time allowed for the group meeting which limited the roles of attitudinal expressions and impressions.

The study is now being written up as a Master's thesis and a technical report (Chemers and Lekhyananda). It will serve as a preliminary study for a more extensive investigation on an Arab culture assimilator study using more sophisticated culture assimilator methods based on Sub-Projects I and II and a more advanced research design.

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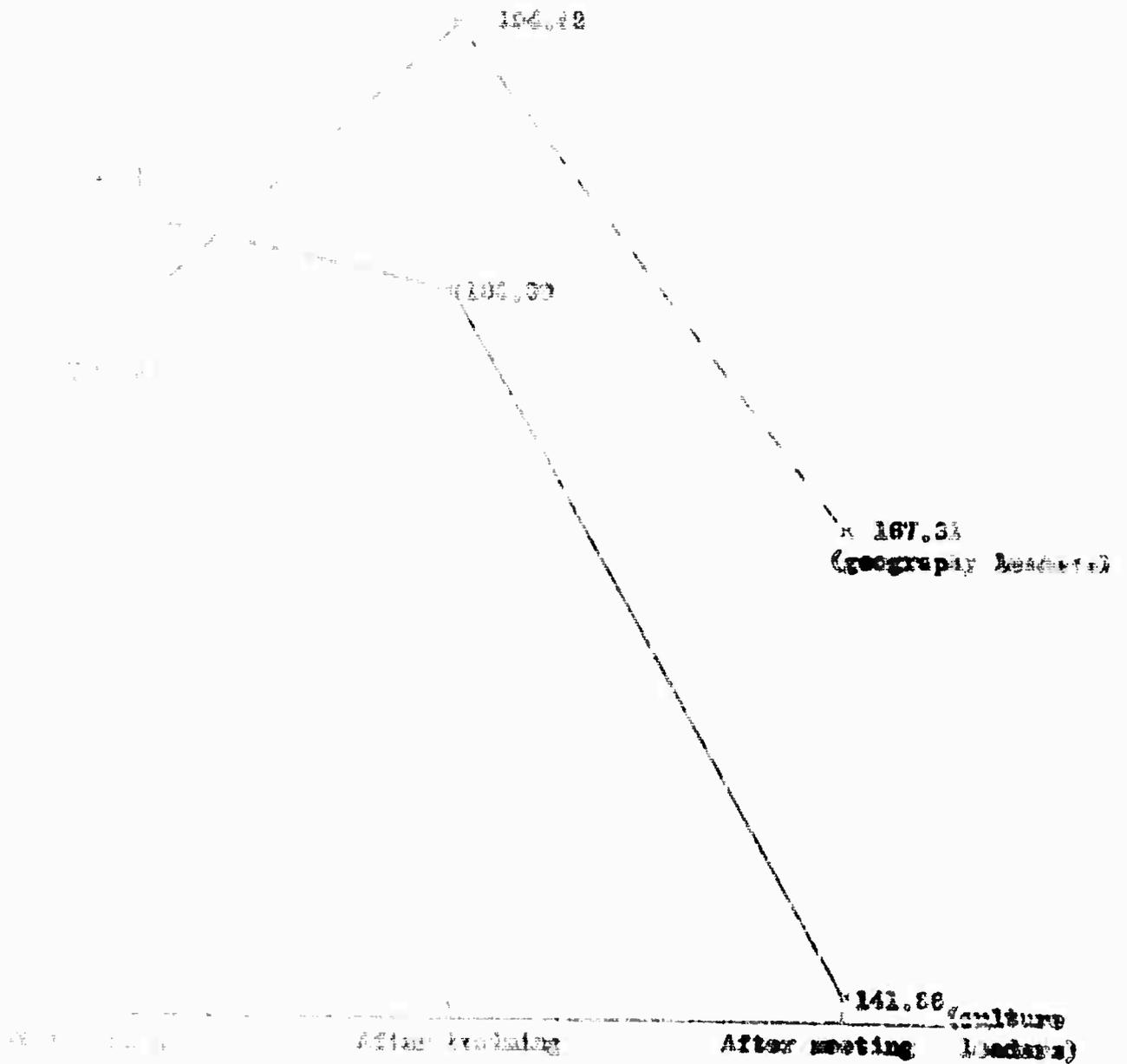


Fig. 10.

The following pages are a technical appendix to
the three page report from Sub-Project I.

Sub-Project I (H. C. Triandis and C. E. Osgood)

Intercultural Negotiations

This sub-project has been concerned primarily with (a) the development of quantitative procedures for the measurement of concept meaning, attitudes, values, and norms of interpersonal behavior which are relevant to cross-cultural contacts, and (b) the experimental investigation of the importance of these variables in negotiations situations involving interaction between persons from different cultures.

Studies A, B, and C develop quantitative procedures for the measurement of the culturally significant variables described above. Study D tests the importance and predictive validities of these variables in intercultural negotiations. Study E seeks to integrate the measures of meanings, attitudes, and norms with the work on the culture assimilator being conducted under Sub-project II.

Study A: Procedures for the Measurement of Denotative Meaning (C. E. Osgood, H. C. Triandis, K. Forster, M. Wilkens, and E. E. Davis).

Study A-2: The Measurement of Implicative Meaning (E. E. Davis, and H. C. Triandis).

a. Data. These data, together with experimental criterion variables, were collected in connection with the negotiations study D-1.

b. Analysis. Extensive analyses of these data have been performed, including studies of the relationship between implicative meaning data and criterion variables. Further analyses designed to reassess and refine the scoring techniques are now being performed.

c. Write-up. Technical report by E. E. Davis. ECD, November 30, 1965.

Study A-3: Antecedent-Consequent Meaning Procedure (H. C. Triandis, E. E. Davis, A. V. Shanmugam, Y. Tanaka, and V. Vassiliou).

a. Data. Data for the first phase have been collected and summarized for subjects from Illinois, India, Japan, and Greece. Triandis and Davis are now inspecting this data and, in consultation with the other researchers involved, will set up phase two of the study within the next few weeks. Arrangements for data collection in phase two with Illinois Ss have already been made for November, and similar arrangements have been made in the other countries. The data collection for phase two should be completed by December, 1965.

b. Analysis. The analysis of phase one data has consisted of summarization of the results. The procedures for the analysis of phase two data are being worked out and will be carried out by computers shortly after the data has been collected.

c. Write-up. Technical report by H. C. Triandis, et al. ECD not yet definite.

Study A-4: Semantic Feature Analysis. (C. E. Osgood, K. Forster, and M. Wilkens).

a. Data. Data have been collected in Illinois and Japan.

b. Analysis. Computer analysis is being performed by K. Forster in Melbourne. Osgood and Forster will continue analyses using facilities in Melbourne, but Forster will also send Fortran programs to the U. S. so that Osgood and Wilkens can carry on further analyses here.

c. Write-up. This study is in an exploratory stage. A progress report on the development and testing of the new method will be prepared by January, 1966.

Study B-1: Norms of Interpersonal Behavior through Content Analysis (E. Katz, C. E. Osgood, M. Wilkens, and H. C. Triandis).

a. Data. Through the use of content analysis and random sampling, data representing manifest behavioral intentions have been collected from fifty American and fifty Indian (Kannada) short stories. The behaviors from both cultures have been categorized and keypunched.

b. Analysis. Several analyses of the American data have already been performed (see Technical Reports Number 19 and 20). Current analyses attempting to compare the results from the two cultures have run into the difficulty of apparent non-comparability of the coding systems. In an attempt to overcome this difficulty, the data from the two cultures will be analyzed on an exploratory basis by the use of Osgood's semantic feature analysis technique.

c. Write-up. In addition to the two technical reports mentioned above, a further technical report containing a comparison of the two cultures is planned. ECD depends upon the outcome of the on-going analyses described above.

Study B-2: Behavioral and Role Differentials through Elicitation (H. C. Triandis, V. Vassiliou, E. E. Davis, and M. Nassiakou).

a. Data. Two cultures are being studied using this procedure. The American data have been collected and extensively analyzed. The Greek data have been collected and put on IBM cards. These are now under way to the U. S. by surface transportation and should arrive shortly.

b. Analysis. Extensive analyses of the American data have been performed. Only those analyses which have proved fruitful will be applied to the Greek data. Programs for these analyses are already set up and can be applied as soon as the data arrive.

c. Write-up. Technical Report by H. C. Triandis, et al. ECD Spring, 1966.

Study B-3: Interpersonal Behavioral Intentions through Semantic Feature Analysis (C. E. Osgood and M. Wilkens).

a. Data. Data from Hawaii have been collected. Illinois data will be collected October 12 and 13 (M. Wilkens and E. E. Davis). Data from Japan will be collected in November 1965 (Y. Tanaka).

b. Analysis. These data will be analyzed by means of the semantic feature analysis technique and regular factor analysis (C. E. Osgood and M. Wilkens).

c. Write-up. Technical Report by C. E. Osgood and M. Wilkens. ECD Spring, 1966.

Study B-4: Language-Free Test of Interpersonal Norms (C. E. Osgood).

The materials for this test involve animation of abstract forms representing two persons in interaction. Explorations are now being made of the feasibility of having a computer (PLATO) produce and display such animation.

Study B-5: Greek Public Opinion Study (H. C. Triandis and V. Vassiliou).

a. Data. Data on a representative sampling of the greater Athens area were collected by V. Vassiliou and is now in Illinois in revised form on IBM cards.

b. Analysis. Several analyses have been performed, including particularly the relationship between behavioral differential information and sociological and demographic data. The analysis of this data is now largely completed.

c. Write-up. Technical Report by H. C. Triandis, V. Vassiliou and E. Thomanek. A first draft of the Technical Report has been completed by Triandis, and is now being revised by him and the co-authors. ECD November, 1965.

Study B-6: The Korynth Role Differential Study (H. C. Triandis).

a. Data. 360 high-school graduates from all regions of Greece, who had just entered the Greek Army for officer's training, yielded extensive data involving the role differential and further information. Three sub-sets of data were collected and will be analyzed, both separately and in conjunction with each other. These data are being processed and shipped to the U. S. at this time.

b. Analysis. Analyses of the relationship between the role differential and the following sub-sets of data will be conducted:

1. Role differential responses in comparison with regional and social class differences of Ss.
2. Role differential responses in comparison with individual differences in value systems.
3. Role differential responses in relation to perceptions about leadership effectiveness.

c. Write-up. Three separate Technical Reports by Triandis, et al. ECD not yet determined.

Study C: Cross-Cultural Comparisons of Determinants of Behavioral Intentions

(H. C. Triandis, A. V. Shanmugam, Y. Tanaka, and E. E. Davis).

Study C-1: Cross-Cultural Comparisons of Translated Versions of Behavioral Differentials (H. C. Triandis, A. V. Shanmugam, Y. Tanaka, and E. E. Davis).

a. Data. Data were collected last year in Illinois, Japan (Tokyo) and India (Mysore), and put on IBM cards. Numerous analyses have already been conducted.

b. Analysis. Extensive factor analyses of semantic and behavioral differential scales in these three cultures have been conducted. These have been summarized by Triandis. Analyses of variance are now being performed.

c. Write-up. Technical Report by H. C. Triandis, et al. ECD, December, 1965.

Study C-2: Multi-Mode Factor Analysis of the Determinants of Inter-Personal Perception. (H. C. Triandis, L. Tucker, E. E. Davis, and Ping Koo).

a. Data. The data to be subjected to this three-mode analysis are the Japanese-American-Indian data described above. However, as a means of developing procedures, data collected by Davis and Grobstein, about which a great deal of information is already known, will be used.

b. Analysis. Preliminary analyses using the three-mode technique with the Japanese-American-Indian data were conducted several months ago and discussed with Tucker. Also, a preliminary analysis of the Davis-Grobstein data has been conducted, but not yet discussed with Tucker. Due to personnel changes in the project these analyses have been in abeyance. At the present time it is planned to continue with three-mode analyses of this data with the help of Ping Koo in consultation with Sharon Wolfe. An undergraduate assistant will assist in the data processing and the analyses will be conducted with the general supervision of Triandis and Davis, who will consult with Tucker.

c. Write-up. Technical Report by H. C. Triandis, E. E. Davis, et al. ECD Spring, 1966.

Study C-3: The Prediction of the Determinants of Behavioral Intentions
(H. C. Triandis, M. Fishbein, and Ping Koo).

a. Data. The basic data for this prediction study are the Japanese-American-Indian Data described above.

b. Analysis. The purpose here is to determine to what extent one can predict responses to complex stimuli from responses to the simple elements contained in the complex stimuli. Basically, two prediction techniques are being examined, namely, 1) an additive model (Fishbein) and 2) a weighted model based on the congruity principle (Osgood). These two predictive models are in turn being compared against an a posteriori model based on the empirical results utilizing multiple correlation techniques.

c. Write-up. Technical Report by H. C. Triandis, et al. ECD, January, 1966.

Study C-4: Social Perceptions of Negro and White American Students
(E. E. Davis and N. Grobstein).

a. Data. Data on Negro and white Illinois students were collected in 1964 by Grobstein under the supervision of Davis.

b. Analysis. Most of the analyses, including factor analyses of scales and analyses of variance, have been completed. One or two minor analyses are now being completed.

c. Write-up. Technical Report by E. E. Davis and N. Grobstein. ECD November, 1965.

Study C-5: Social Perceptions of German and American Students
(E. E. Davis and N. Viernstein).

a. Data. Pre-test data have arrived and it is expected that the data for the main test will be collected in November. The pre-test data are now being analyzed to determine factor structures of semantic and behavioral differential scales for use in the main study. Analyses of the main study results, including analyses of variance and the interrelationships with other variables, should be completed by December, 1965 or January, 1966.

c. Write-up. Technical Report by E. E. Davis. ECD February, 1966.

Study D: Studies of Intercultural Negotiations (H. C. Triandis and E. E. Davis).

Study D-1: An Exploratory Study of Intercultural Negotiations (E. E. Davis and H. C. Triandis).

a. Data. Extensive pretesting was done with white naive Illinois male Ss, and experimental negotiations between these Ss and Negro confederates were conducted on civil rights issues. In addition to pretest data, extensive process, outcome and post-test data were collected.

b. Analysis. Very extensive analyses of these data have been conducted, and the final analyses are now being completed.

c. Write-up. Technical Report by E. E. Davis and H. C. Triandis is now being completed. ECD October, 1965. In addition, an article by Triandis and Davis entitled "Race and Belief as Determinants of Behavioral Intentions" has been completed and accepted by the Journal of Personality and Social Psychology, and will appear in the December, 1965 issue. This article made use of data collected in the negotiations pre-tests described above, and offered a resolution to the long-standing Triandis-Rokeach controversy by showing that the relative influence of race and belief in determining Ss behavioral intentions was a complex function of two parameters, namely (a) the response continuum, and (b) the subject type.

Study D-2: Individual and Group Factors in Intercultural Negotiations (E. E. Davis and H. C. Triandis).

a. Data. Data have been collected from 150 white Illinois Ss, and are being collected on 150 Negro Ss in the Chicago area, using instruments designed to further develop semantic differentials and behavior differentials appropriate for pretesting in a negotiations situation. Additional personality and attitudinal data, as well as other information, is being collected from these Ss.

b. Analysis. Factor analyses of scales for the white Ss are now in progress, and will be initiated shortly with the data from Negro Ss upon the completion of collection.

c. Write-up. Since this is pre-test data, the write-up will be considered in connection with further negotiation studies which are to be carried out.

Study D-3: A Pilot Study of Interpreter Effects in Intercultural Negotiations (H. C. Triandis, V. Vassiliou, E. E. Davis and M. Nassiakou).

a. Data. Pre-test and experimental data, involving negotiations between monolingual American Ss and monolingual Greek Ss with bilingual Greek Ss acting as interpreters, have been collected.

b. Analysis. Analyses have been completed by Triandis in Greece.

c. Write-up. A first draft of a Technical Report, giving the findings of the study, has been completed by H. C. Triandis, and is now being revised by the above authors. ECD November, 1965.

Study D-4: Pilot Study of the Characteristics of Negotiators (H. C. Triandis, E. E. Davis, and L. Johnston).

The observations of Triandis in an exploratory study of negotiations in Greece (listed above), as well as observations from the Study D-1 negotiations, have led to a consideration of the importance of "negotiation sophistication" and related variables on the negotiators. Thus, it appears important to discover ways of measuring this variable so as to either control it or vary it systematically in future studies.

This study is still in the planning stage, but will be carried out during 1965-66.

Study E: Integrative Studies Relating Sub-Projects I and II

Study E-1: Exploratory Study of Barriers to Inter-Cultural Communication (H. C. Triandis).

a. Data. Interviews with high-ranking Americans and Greeks in the Athens area were conducted concerning their perceptions of each other and difficulties which exist in the adjustment of Americans in Greece. The interview material was content analyzed and presented in a second round to the Ss in the form of a questionnaire.

b. Analysis. The analysis of the data has been largely inspectional and in terms of percentages of responses to the questionnaires set up on the basis of the content analyses of the interviews.

c. Write-up. The first draft has been prepared by H. C. Triandis and will be revised shortly. ECD not determined (exact form of publication has not yet been decided upon).

Study E-2: Methodological Studies of Personality and Attitude Measurement in Cross-Cultural Comparisons (E. E. Davis).

a. Data. Responses were obtained from 276 Ss. Two sets of one hundred Likert-type items each, developed by G. Stern et al. These were the SSRC S-A Schedule, form P860 relating to personality and the SSRC S-A Schedule, form LB60 relating to ideology. In addition, data is now being collected on 150 Negro Ss and 150 white Ss in the Chicago area in connection with other data designed to further develop the semantic differential and behavior differential procedures used in the negotiations pre-test.

Plans are also being made to collect similar data from additional cross-cultural samples.

b. Analysis. Factor analyses of the two sets of 100 items yielded five factors for each of the two sets which could be clearly interpreted. The five highest loading items on each of the ten factors (five factors each for the two sets) were chosen to yield a new set of 50 items. Further factor analyses of these 50 items are now being conducted with the data from white Ss, and will be conducted shortly with data from Negro Ss which are now being collected. Furthermore, analyses of the relationships between these variables and the Semantic and Behavioral Differential data will be made.

c. Write-up. Technical Report by E. E. Davis. ECD, February, 1965.