

THE UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

WALKERS AND WATCHERS IN A GRECO-LATIN SQUARE:
A MOTION PICTURE STUDY OF PERSON PERCEPTION

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
degree of
DOCTOR OF PHILOSOPHY

BY
Z. INCI INCIKAYA TERRY
Norman, Oklahoma
1967

WALKERS AND WATCHERS IN A GRECO-LATIN SQUARE:

A MOTION PICTURE STUDY OF PERSON PERCEPTION

APPROVED BY

H. E. Dahlke
Maurice Ferner
William T. Telford
Fred B. Silvestri
Wm. W. Dowdall

DISSERTATION COMMITTEE

ACKNOWLEDGEMENT

In the accomplishment of this study I am indebted to a large number of people who gave graciously and generously of their time and resources.

I wish first of all to acknowledge the helpful direction given by the members of my dissertation committee. In particular I am grateful to the chairman of my committee, Dr. Arnold E. Dahlke for the guidance he provided throughout the study. Also I must recognize the invaluable consultation provided at critical stages in this study by Dr. James A. Nickel, Chairman of the Mathematics Department at the Oklahoma City University.

Special thanks are due to Miss Helen Gregory, Professor of Dance, and to Dr. Carl Cass, Professor of Drama, for their expert advice on the staging of the filming sequences. And without the excellent and unselfish cooperation of the twelve student actors, whose real names are not revealed in this report, this study could never have been initiated. This brief citation can hardly repay my debt of gratitude to them.

I also wish to thank Mr. Jack Morrison, Director of the University of Oklahoma Computer Center and the members of

his staff for the gracious manner in which they provided me with computer services.

Likewise, I am deeply indebted to Mr. Joe Whittle who wrote the computer program for the analysis of variance of the Greco-Latin square, and to Mr. Adil A. Mayyasi who wrote the analysis of variance program for the four-factor and the five-factor analyses. I cannot hope by this small notice to express my full gratitude for the many long hours each of them spent at every stage of the statistical analysis.

During the preparation of this dissertation I have had the benefit of the devoted assistance of Mrs. Mary Lee Raney who typed and retyped the many drafts of this report, and composed the tables and the figures. Grateful mention also must be made of Mrs. Barbara O. Churchill who transformed the final draft into this finished typed copy.

Of all those who have contributed to my graduate studies, to my research, and to this dissertation, none is more deserving of acknowledgement than my husband, Dr. Richard Terry, Director of the Systems Research Center of the University of Oklahoma. I am grateful for the intellectual guidance he provided for the design of the experiment, for his help in making and editing the films, for his consultation in the analysis of the results, and for making available to me the facilities of the Systems Research Center. As my former professor at another university, and as my constant intellectual inspiration, he deserves my

deepest gratitude.

Finally, I gratefully acknowledge the kindness and warmth of my cousin, Mrs. Selma Arel, who interrupted her professional career in Turkey in order to come to the United States to be a substitute mother for my small son, in order to ease the dilemma of a studying mother.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vii
LIST OF FIGURES.	x
Chapter	
I. INTRODUCTION	1
II. METHOD	18
III. RESULTS.	44
IV. DISCUSSION	84
V. SUMMARY.	103
REFERENCES	108
APPENDIX	118

LIST OF TABLES

Table	Page
1. Intercorrelations Among the Gordon Personal Profile Scores for Male and Female College Students in this study . . .	45
2. Intercorrelations Among the Gordon Personal Profile Scores for Male and Female College Students (Gordon, (1963) . .	45
3. Correlation Coefficients Between Gordon Personal Profile Scores and Self-Rating Scale Scores for Men (N = 100) and Women (N = 127)	46
4. Intercorrelations Among the Self-Rating Scales for Men (N = 100)	49
5. Intercorrelations Among the Self-Rating Scales for Women (N = 127)	50
6. Summary of Analysis of Variance of Greco-Latin Square for Rated Ascendancy (Tetrad 1).	54
7. Summary of Analysis of Variance of Greco-Latin Square for Rated Responsibility (Tetrad 2)	55
8. Summary of Analysis of Variance of Greco-Latin Square for Rated Emotional Stability (Tetrad 3).	56
9. Summary of Analysis of Variance of Greco-Latin Square for Rated Sociability (Tetrad 4)	57
10. Summary of Integrated Four-Factor Analysis of Variance for Rated Ascendancy (Tetrad 1)	63

List of Tables cont'd

	Page
11. Summary of Integrated Four-Factor Analysis of Variance for Rated Respon- sibility (Tetrad 2)	64
12. Summary of Integrated Four-Factor Analysis of Variance for Rated Emotional Stability (Tetrad 3).	65
13. Summary of Integrated Four-Factor Analysis of Variance for Rated Socia- bility (Tetrad 4)	66
14. Actor Means: Average Rating in Each Tetrad for Each Actor, Regardless of the Path He Walked.	67
15. Summary of Integrated Five-Factor Analysis of Variance for Rated Ascendancy (Tetrad 1)	70
16. Summary of Integrated Five-Factor Analysis of Variance for Rated Responsibility (Tetrad 2)	71
17. Summary of Integrated Five-Factor Analysis of Variance for Rated Emotional Stability (Tetrad 3).	72
18. Summary of Integrated Five-Factor Analysis of Variance for Rated Socia- bility (Tetrad 4)	73
19. Path Means: Average Rating in Each Tetrad, for the Composite of Six Actors, for Each Path	74
20. Valence Means: Average Rating in Each Tetrad, for the Composite of Six Actors, Under the Two Conditions of Valence	75
21. Means of Interactions of Valence and Gordon Ascendancy Scores for Rating Tetrad 1 (Ascendancy)	76
22. Means of Interactions of Valence and Gordon Ascendancy Scores for Rating Tetrad 2 (Responsibility)	76

List of Tables cont'd

	Page
23. Frequency of Preferences of Male Subjects on Personality Index (N = 100)	79
24. Frequency Comparison of Male Subjects (N = 60), at High and at Low Ends of Gordon Tetrads, With Respect to Preferences on Personality Index for Direct and for Indirect Paths to Liked and to Disliked Girl	81
25. Intercorrelations Among Rating Scale Scores for Actors Who Walked the Path Which Male Subjects (N = 100) indicated They Themselves Would Have Taken Toward a Girl They <u>Liked</u>	83

LIST OF FIGURES

Figure	Page
1. The Greco-Latin Square Design of This Experiment	19
2. Definition of Paths and Identification of Actor Couples for the Experimental Design	20
3. List of Preferred Responses of Subjects in Tagiuri's Study of Paths.	25
4. Lists of Items From Sixteen Rating Scales Which Form Tetrads Corresponding to the Four Gordon Scales	33
5. Schematic Presentation of the "Personality Index"	38
6. Re-arrangement of Greco-Latin Design for <u>Actor</u>	60
7. Re-arrangement of Greco-Latin Design for <u>Path</u>	60
8. Statistical Design for Four-Factor Integrated Analysis of Variance for Study of Actor Effects	61
9. Statistical Design for Five-Factor Integrated Analysis of Variance for Study of Path and Valence Effects.	69

WALKERS AND WATCHERS IN A GRECO-LATIN SQUARE: A MOTION
PICTURE STUDY OF PERSON PERCEPTION

CHAPTER I

INTRODUCTION

The Problem of Person Perception

While perception is generally defined in terms of the experiences that stem directly from sensory stimulation, it is also recognized that much of experience related to perception is more remote from sensory stimulation and involves feelings and cognitions related to perceptual objects. When these perceptual objects are other persons, we enter the more complex field of person perception which focuses on the process by which impressions, opinions, or feelings about other persons are formed (Secord and Backman, 1964). This process of perception is also referred to in the literature as "forming impressions of personality" or "judgment of personality." It is apparent from various definitions of person perception that this attribution of psychological characteristics such as traits, intentions, and emotions to other people involves the process of judgment and inference (Tagiuri, 1958) on the part of the perceiver.

It is generally agreed (Secord and Beckman, 1964; Shrauger and Altrocchi, 1964; Tagiuri, 1958) that three sets of factors interact to produce person perception: (1) the attributes of the perceiver, (2) the attributes of the stimulus person, and (3) the nature of the interaction situation which provides the context or background in which the stimulus person is perceived.

The present study, in line with the contemporary emphasis, is concerned with the relationship and the influence of these three sets of factors. It will be useful, then, to introduce this report with a brief overview of the literature relating to each of these factors. In a subsequent section this paper will examine those studies of person perception which more immediately give rise to the hypotheses which are under investigation in the present experiment.

Attributes of the Perceiver

Literature dealing with the influence of this factor on person perception has been summarized in extensive reviews by Bruner and Tagiuri (1954), Taft (1955), Shrauger and Altrocchi (1964), and Secord and Backman (1964). The emphasis in earlier studies of person perception was directed towards determining the accuracy of perception of another's personality, on the one hand, and towards investigation of the concept of assumed similarity between the judge and the

stimulus person, on the other. The methodological problems inherent in both of these approaches to the study of person perception have been demonstrated by Cronbach (1955, 1958) and Gage and Cronbach (1955).

Numerous studies have related person perception to specific traits residing in the perceiver. Among these are studies showing the influence of: age (Chowdry and Newcomb, 1952; Dymond et al., 1952; Gates, 1923; Kohn and Fiedler, 1961; Taft, 1950); sex (Dymond, 1949, 1950; Kohn and Fiedler, 1961; Taft, 1950); family background and sibling rank, intelligence, training in psychology, aesthetic ability and sensitivity, emotional stability and character integration, self-insight, social class, social skill and popularity, attitude toward social relations (review by Campbell and Yarrow, 1961; Gollin, 1958; Taft, 1955); favorability (Edwards, 1959; Levy and Dugan, 1960; Matkom, 1963; Osgood, Suci, and Tannenbaum, 1957; Steiner and Johnson, 1963; Tagiuri, 1958); hostility (Altrocchi, Shrauger, and McLeod, 1964; Berkowitz, 1959; Cohen, 1956; Eriksen, 1963; Feshbach, Singer, and Feshbach, 1963); dominance (Altrocchi, 1959; Bieri, 1962; Leary, 1957; Smelser, 1961); authoritarianism (Adorno et al., 1950; Crockett and Meidinger, 1956; Jones, 1954; Lipetz, 1960; Rabinowitz, 1956; Scodel and Freedman, 1956; Scodel and Mussen, 1953; Thibaut and Reicken, 1955); assumed similarity with relevance to social desirability

and affect (Bramel, 1962; Fiedler, Blaisdell, and Warrington, 1952; Newcomb, 1961; Secord, 1964; Secord, Backman, and Eachus, 1964).

The contemporary trend in the study of person perception is in the direction of analysis of the processes involved in knowing others, in contradistinction to the earlier trend and emphasis on veridicality or accuracy of the individual in judging personality. In the contemporary analyses of this process of impression formation, there is a variety of findings and conceptual formulations regarding the perceiver's modes of perception. One group of studies deals with cognitive structures and processes, stressing the manner in which individuals vary in the extent to which they have differentiated their conceptualizations of their social environment. Differentiation is defined as the tendency to make fine distinctions among people and to perceive them as different from one another. "Concreteness - abstractness" of thought processes and "cognitive complexity" have been proposed as factors which underlie differences in ability to attribute contradictory or incongruous traits to another person, and to make use of a large number of trait dimensions or concepts in describing others (Altrocchi, 1961; Bieri, 1961; Gardner and Schoen, 1962; Gollin and Rosenberg, 1956; Harvey, Hunt, and Schroder, 1961; Holzman and Gardner, 1959; Mayo and Crockett, 1964; Rabin, 1962; Sarbin, 1954; Tripodi

and Bieri, 1961, 1963; Wolin, 1956).

Another group of studies examines the notion of "implicit personality theory." This is a concept introduced by Bruner and Tagiuri (1954, p. 649), elaborated and named by Cronbach (1955), and organized by Kelly (1955) into a core of a theory of personality. It refers to a postulated tendency or bias in a perceiver, to have, without realizing it, a "theory" about what other people are like. Cronbach (1955) delineates the differences among perceivers in their tendencies to rate others consistently higher (or lower) on particular traits, to make more extreme (or more central) ratings on certain traits, and to associate particular traits with each other. Gross (1961) has directly tested this notion. She concluded that the concept of a unitary attitude toward the generalized other is too nonspecific to be useful. She based this conclusion on the results of her study which showed that variations in the stimulus materials themselves have a much greater influence on the judges' ratings than do response biases of the perceivers. Her study recommends that we examine the influence of the factors residing in the perceiver together with the influence of specific situations and stimulus persons. Koltuv's (1962) study dealt, similarly, with patterns of consistency revealed by trait intercorrelations among a judge's personality ratings of other people. Her results demonstrate that perceiver predispositions do, in

fact, influence person perception, especially when traits relevant to each judge are analyzed, and when the stimulus persons are unfamiliar to the perceiver. Secord and Berscheid's (1963) study also demonstrates that relations among traits are a significant element in the perception of other persons, and that these relations are relatively fixed and general for widely different stimulus persons.

Another significant consideration in evaluating differences in how people judge others is the issue of allowing the judge to use his own spontaneously selected categories vs. providing him with preselected dimensions or traits on which he is to evaluate others. There are extensive pleas for research to determine the salient dimensions used typically and in everyday life by perceivers in judging other people (Beach and Wertheimer, 1961; Bruner and Tagiuri, 1954; Cronbach, 1958; Hastorf, Richardson, and Dornbusch, 1958; Jackson and Messick, 1963; Richardson, Hastorf, and Dornbusch, 1960; Rommetveit, 1960; Tagiuri, 1958; Tajfel and Wilkes, 1964).

Attributes of the Stimulus Person

Literature focusing on the stimulus person has included studies dealing with the role of the following factors: physical appearance and body build (Kretchmer, 1925; Sheldon, Stevens, and Tucker, 1940); faces with particular physiognomic characteristics (Secord, Dukes, and Bevan, 1954; Secord

and Muthard, 1955); expressive movements, gestures, posture, voice qualities, clothing (Crider and Lasswell, 1960; Efron and Foley, 1947; Ekman, 1964; Kastenbaum, 1951; Kramer, 1962; Pear, 1931, 1957; Sarbin, 1954; Stone, 1959, 1962; Taylor, 1934); verbal cue traits presented as stimuli (Asch, 1946, 1952; Haire and Grunes, 1950; Kastenbaum, 1951; Luchins, 1948; Wishner, 1960); the order of presentation of verbal stimulus material (Anderson and Barrios, 1961; Asch, 1946; Bruner, Shapiro, and Tagiuri, 1958; Gollin, 1958; Gollin and Rosenberg, 1956; Luchins, 1957a, 1957b, 1960; Mayo and Crockett, 1964; Ostrander and Steger, 1960; Wishner, 1960); stereotyping through racial, role, or group membership information (Beilin, 1963; Pepitone and Hayden, 1955; Secord, 1959; Secord, Bevan and Katz, 1965; Veness and Brierley, 1963); and movement of the entire person along some particular path (Tagiuri, 1960). The present study is concerned particularly with the influence of movement of stimulus persons. Detailed review of the relevant studies will be given in the last part of this chapter.

The Nature of the Interaction Situation

The interaction situation is the context or background in which the stimulus person is judged. This context varies from instances where the perceiver has minimal information about and familiarity with the stimulus person to on-going interactions with highly structured and well-defined role

relations between the perceiver and the perceived.

There is a variety of theoretical constructs proposed as cognitive-perceptual processes which underlie person perception in situations where the information about a stimulus person is limited. Among these constructs is "temporal extension," a process whereby a momentary characteristic of the stimulus person is regarded as an enduring attribute (Heider, 1958; Icheiser, 1949; Secord, 1958, 1964). "Resemblances to familiar persons" in the life of the perceiver has been proposed by others (Secord and Backman, 1964) as accounting for person perception when the person is unknown. "Metaphorical generalization," a process of reasoning by analogy, has been offered as an explanatory construct by Secord, Stritch, and Johnson (1960) and Secord and Muthard (1955). "Categorization" of people in certain classes associated with certain personality attributes (Kogan and Shelton, 1960), and "stereotyping" of persons by reason of their membership in a certain social category (Secord, 1959; Secord, Bevan, and Katz, 1956) are other constructs proposed to explain the inference process.

In situations where the interactional context between the perceiver and the stimulus person is a well-established one, research shows that it is an oversimplification to assume a simple one-to-one relation between the traits of the perceiver and the traits attributed to the other person. It is

imperative here to take into consideration the influence of such factors as role-relationships between the perceiver and the perceived (Jones and deCharms, 1957; Sarbin, 1954); affect or liking relationship between the perceiver and the perceived (Backman and Secord, 1959; Heider, 1958b; Newcomb, 1961; Pastore, 1960a, 1960b; Tagiuri, 1958); status and power relationships between the two (Horwitz, 1958; Pepitone, 1958).

"Economizing processes" of inference have been proposed in explanation of the impression-formation process in face-to-face relations where the perceiver is confronted with an overload of perceptual stimuli (Secord and Backman, 1964, p. 83). These inferential sets include a "constancy or invariance" bias--similar to "temporal extension"--whereby individuals tend to be seen as constant, unchanging entities; and an evaluative bias (Heider, 1958; Osgood, Suci, and Tannenbaum, 1957), generally termed the "halo effect," whereby perceptions and impressions are organized about other persons around a predominantly positive or a predominantly negative factor. "Perceived locus of cause of action" is considered to be one of the most important of interactional contexts affecting person perception (Hastorf, 1964; Heider, 1958; Jones and deCharms, 1958; Pepitone, 1958; Strickland, 1958; Strickland, Jones, and Smith, 1960; Thibaut and Riecken, 1955). This constitutes another perceptually economizing inferential set which subsumes and interprets the notions of

responsibility, justifiability, and intentionality in actions pertinent to the perceiver and the perceived.

A review of the literature on impression formation reveals a lack of studies of (1) specific problems involving multiple interactions among the sets of variables residing in (a) the perceiver, (b) the perceived person, (c) the judgmental situation and the wider context or background against which the personality inference or judgment is made; (2) real life validation of the influence on person perception of selectively abstracted cues--i.e., verbal, schematic, etc.--presented under laboratory controlled conditions.

Background for the Present Study

This study takes as its starting point the investigation by Tagiuri (1960) of the influence of movement paths on the formation of personality impression. In line with the clear need for multivariate studies which include variables in the perceiver, the stimulus person, the judgmental situation, and context, this study examines the process of person perception as it depends upon these classes of factors.

The history of the formation of impressions of personality from movement starts with the work of Heider and Simmel (1944) and Michotte (1954). Asch's work (1946, 1952) on impression formation from verbal trait lists as data has had particular influence on most of contemporary person perception research.

The classic studies of Asch (1946, 1952) demonstrated the organized, unified nature of the process of impression formation. His basic assumption is that certain kinds of personal qualities can be directly perceived. He based this assumption on the earlier work of Heider and Simmel (1944) to be described below. His findings were that, when given lists of discrete qualities said to belong to a person, subjects were able to organize these lists of traits into relatively integrated consistent verbal pictures of a person. In the course of this impression formation process, he found that the traits become ordered into a structure where some occupied a central, and others a peripheral position for the final unified impression of a total person. The content and functional value of a trait changes with the given context, showing the Gestalt theory principle of the determination of part processes by the total configuration.

This basic experimental paradigm of Asch has been repeated with the same procedures and also with variations by numerous investigators with essentially similar results (Anderson and Barrios, 1961; Bruner, Shapiro, and Tagiuri, 1958; Gollin, 1958; Haire and Grunes, 1950; Kastenbaum, 1951; Kelley, 1950; Luchins, 1948, 1957, 1960; Mensh and Wishner, 1947; Ostrander and Steger, 1960; Veness and Brierley, 1963; Wishner, 1960).

Heider and Simmel's (1944) study, which was to become

highly influential in subsequent investigations of the impression formation process, introduced a new point of attack by focusing on the role of movement in the process of person perception. They demonstrated, similar to Asch who had used verbal data, the dependence of the response on the configurational properties of the stimulus. They showed subjects animated cartoons of three geometric figures (a large triangle, smaller triangle, and a disc moving around in and out of a large rectangle). These very simple stimuli were often interpreted by subjects as human beings in interpersonal conflict and were described with various humanlike attributes. They demonstrated that the attributed origin of movements influenced their interpretation. They were able to show that this depends in some cases, on the characteristics of the movements themselves, and in some cases, on the surrounding objects. The manner in which the object-actors were judged was closely related to this attribution of origin of movement. Thus, these investigators evidenced the reading of human character from patterns of movement or from the relationships between moving parts in abstract figures.

Shor (1957), using the motion picture produced by Heider and Simmel (1944), demonstrated that the impressions formed of an individual depend on the characteristics ascribed to another person seen to interact with him.

Heider and his students very recently (1967) repeated,

in a series of experiments, his basic paradigm of the 1944 motion picture with variations of media, utilizing in some experiments still-frame cartoons, and in others, verbal plots describing overt actions of persons. The task assigned to the perceiving subject was to explain his evaluation of the characters, and to assign reasons for the actions of the characters. Results showed integrated verbal pictures of the characters and their interactions, based on the role of movement patterns among them. The core of the verbal picture appears to be the configuration of the several characters taken together. The study suggests a relative constancy of overall perceptual structure regardless of the variability of the constituent details.

Another investigator interested in the role and meaning of movement in person perception is Michotte (1954). In his investigations of the perception of causality, Michotte employed inanimate physical objects. Through a variety of experiments he was able to describe the combinations of movement of these objects which give rise to various interpretations of human-like behavior and interactions, and to inferences about human emotions and motives. By demonstrating the extraordinary complexity and "depth" of meaning that can be conveyed by two rectangles moving variously in a straight line, Michotte showed that impressions and inferences drawn from a person's movement depend upon what he

called "functional relations" (Michotte, 1946).

Tagiuri (1960) furthered the analysis of person perception by his study of the role played by movement of the stimulus person. By movement, Tagiuri means the displacement through space of the "entire stimulus person, and not what has sometimes been called expressive movement, such as gait, gesture, handwriting, and so on"(p. 176). Movement of the stimulus person in very simple symbolic situations appeared to Tagiuri to be a very important and neglected class of stimulus cues influencing inference processes in person perception. In real life, especially in the situations where we do not have some access to the inner man, he says, "we may be failing to give explicit weight to the great many inferences we probably make from definitely external and relatively simple events of which movement is an important example"(Tagiuri, 1960, p. 181).

Tagiuri presented line figures to his college student subjects, together with the information that the figures represent the path through which a person has moved. In this "frozen path" method, the path line was shown as having a starting point at one end and a goal point at the other. His instructions stated that the movement was completely unencumbered by physical characteristics of the terrain and that it took place in daylight. The task for the subjects was to describe in their own words the personality and

character of an individual who would move in a certain way as shown by the path-figure. In some conditions of the experiment nothing was said about the goal; in others the goal was described in a single word as either desirable or undesirable or indifferent.

Using another method, Tagiuri presented a film showing a dot moving from the start to the end point along the path pattern.

Tagiuri's results show the dependence of the meaning of movement on the interpretations given to the relationship between movement and the surrounding field conditions. While a specific path of movement appears to have an intrinsic meaning of its own, the meaning changes when the goal is characterized as desirable, undesirable, or indifferent. Depending on the context--provided by the positiveness or the negativeness of the goal--interpretations given to the same movement seem to show a high consensus among the subjects. His results further indicate that "among the stimulus characteristics that appear to play a large, though not conscious, role in the inferences made about the person moving is the approach-avoidance relation a path bears to its start and end points" (1960, p. 184). Tagiuri suggests the plausible hypothesis that people in real life probably do make use of movement cues in person perception, even though they do not abstract the movement component of their judgment. Basing

his reasoning on certain analogic and metaphorical tendencies observed in human thinking, Tagiuri assumes that inferences from paths to personal characteristics, from free movement as a cue to personality impressions, represent the essence of the unique functional relationship between the person and his field.

The Present Study

This study takes as its starting point Tagiuri's (1960) investigation of the influence of movement paths on the formation of personality impressions. While Tagiuri studied movement paths in the abstract and in relation to hypothetical moving persons, this study attempts to verify the role of paths as stimulus cues in the perception of real persons. Furthermore, the present study will examine the process of person perception as it depends upon variables residing in the perceiver, the stimulus person, and the judgmental context.

Specifically, the conceptual hypotheses to be investigated in this study are:

1. Regardless of path, the personality traits ascribed to an actor walking that path will be a function of which actor he is.
2. Regardless of actor, the personality traits ascribed to him will be a function of the path he walks.
3. For both of the above hypotheses, there will be

differences in the assignment of personality traits as a function of the valences (like or dislike of the goal) of the path.

4. There will be differences in trait assignment, as outlined in the above three hypotheses, between male and female perceivers.

5. Regardless of the identity of actor, the type of path, or the sex of the perceiver, a subject's "personality" as assessed through an objective test will be related to his over-all trait assignment to the actors.

6. There will be significant interactions between the stimulus variables of path, actor, goal-valence, and the perceiver variables of sex and personality as revealed through an objective test.

CHAPTER II

METHOD

Subjects (male and female students enrolled in Psychology I at the University of Oklahoma) were shown a movie consisting of a series of six short University campus scenes, each of which showed a boy going by one of three "paths" to meet a girl. In each of the six scenes, there was (1) a different pair of actors, and (2) a different path-valence condition. Each path was presented twice: once under a valence condition where the Ss understood the boy liked the girl; once where the Ss understood the boy disliked the girl. The Subjects were divided into six groups, with 30 Ss in each group. Each group saw a different order of scenes presented, as well as a different pair of actors for each of the path-valence conditions. While all of the subjects saw all six pairs of actors and all six path-valence combinations, they did not all see all possible combinations of actors, paths, and valences. The experimental design is that of a Greco-Latin square (Fig.1) with counterbalancing of the six path-valence conditions on the one square, and counterbalancing of the six actor-pairs on the superimposed square. As Fisher (1953) points out, there is no exact solution for assembling a six-by-six

Scenes						
	1	2	3	4	5	6
Reel I	1 - 1	2 - 6	3 - 2	4 - 5	5 - 3	6 - 4
Reel II	2 - 2	3 - 4	6 - 5	1 - 3	4 - 6	5 - 1
Reel III	3 - 3	6 - 1	2 - 4	5 - 6	1 - 5	4 - 2
Reel IV	4 - 4	5 - 2	1 - 6	2 - 1	6 - 3	3 - 5
Reel V	5 - 5	1 - 4	4 - 1	6 - 2	3 - 6	2 - 3
Reel VI	6 - 6	4 - 3	5 - 4	3 - 1	2 - 5	1 - 2

Fig. 1.--The Greco-Latin Square Design of this experiment: In this design, each row corresponds to a reel shown to one group of Ss, with each block corresponding to a scene in the order of presentation. In the blocks numbers have been assigned instead of letters, where the first of a pair of numbers indicates the Path and the second indicates the Actor-couple. The paths are identified in Figure 2.

Paths	Actor-Couples (Coded names)
1. Path I (+) 2. Path I (-)	1. George - Mary 2. Paul - Margaret 3. Bill - Joan 4. Jim - Anne 5. Dick - Irene 6. Walter - Suzan
3. Path II (+) 4. Path II (-)	
5. Path III (+) 6. Path III (-)	

Fig. 2.--Definition of Paths and Identification of Actor Couples for the Experimental Design.

Greco-Latin square, but the solution can be approached empirically by randomizing the conditions on each square.

In the design of this experiment, then, each row of the square represents a different order of scenes to be presented to each group. Six reels of six scenes each were constructed, one to be shown to each group. Thus, in the total of 36 scenes, each of the actor pairs was presented once under each of the six path-valence conditions.

Selection of Actors

Criteria for the selection of actor-pairs were formulated on the basis of a need to control certain variables whose influence is not under investigation in this study.

These criteria were:

1. To control the effects of extreme population stereotypes, the actors must not be unusual in height, weight or physical appearance. They should, however, represent the variety of physique and appearance commonly encountered in ordinary life.

2. To control the effects of age differences between the actors and the viewing subjects, the actors should be chosen from the age group of the subjects, which was determined to range between 18 and 25 years. An example of the effects of age differences would be the influence of "status" and "authority" which might be ascribed to actors who are notably older than the Ss.

3. To control the effects of prior acquaintance of the subjects with the actors, the following procedures were employed:

- (a) to reduce the probability of such acquaintance, the actors would be selected from the students enrolled in the Summer session, while the Subjects would be selected from the students enrolled in the Fall session. In addition to this, the actors would be students who had completed Psychology I in a semester prior to the enrollment of the subjects in that course.
- (b) subjects who knew any of the actors would be eliminated from the study.

4. To control the effects of prior knowledge of the experimental conditions by the subjects, the films would have to be made under circumstances where future subjects would not be likely to observe the scenes being filmed. This meant that actors would have to be available on week-ends, when few students would be in the vicinity of where the film sequences were being made.

5. To control the effects of background, scenery, illumination and other environmental variables, the actors would all have to be available at the same time and at the same physical location. This was necessary since the film was to be presented as a set of candid camera shots of campus scenes.

In a preliminary film, six male and six female students from the Drama Department served as actors. They were secured through a notice placed on the bulletin board of the Drama Department of the University of Oklahoma. These films were not used later as the actual stimulus material, however, since some of the actors were recognized by a pilot group of randomly selected students. Some of these actors had been in leading roles not only in the campus theater productions, but also productions of the professional Mummers Theater of Oklahoma City. It also became very impractical to use even the less prominent drama students as actors since the filming presented scheduling conflicts with the summer theater productions of the campus. Therefore, resort was made to completely amateur actors selected from a group of students enrolled in an introductory course in Psychology in the summer term.

From among these students, six boys and six girls were selected as the actors for the films; they were within the 19-25 year age range, and exhibited no discernible peculiarities of manner or gait or any extremes in aesthetic appearance. The earlier films with the more experienced actors were utilized for instructional purposes with this group. This shortened the rehearsal period, and helped standardize the path configurations.

Presentation of Paths

Three paths were chosen from among those used by Tagiuri (1960). In a personal communication with the Experimenter, Tagiuri provided a chart summarizing the raw data he obtained for each of the line-drawn paths he used in his study. The paths selected for the present study correspond to Tagiuri's paths identified as A, C, E, and O and illustrated in Figure 3. Paths C and E are both curved, each with a different radius of curvature. It was felt justifiable to utilize these two drawings as if they were identical paths.

The particular three paths were selected with a view toward their presenting realistic and plausible schemes of movement, while at the same time, being distinctly different from each other. In order to embed the path variable in a real life situation, these three paths were actually walked by the actors.

To ensure that the actors could be easily seen during their walk along the predetermined paths, attention was given to blocking out the scenes in accordance with the requirements of good theatrical presentation. Miss Helen Gregory, Professor of Dance and Dr. Carl Cass, Professor of Drama of the University of Oklahoma, provided independent expert judgments concerning the framing of the scenes. They recommended that the camera be focused so as to have a projected rectangular field with a 40 foot diagonal which would be the straight

GOAL VALENCE PATH	A 	C 
UNSPECIFIED	WELL-REASONED AGGRESSIVE PERSEVERING DETERMINED (2)* LOGICAL PURPOSEFUL (2) RATIONAL KNOWS WHERE GOING (3) GOAL-ORIENTED PRACTICAL ALERT (2) UNIMAGINATIVE RESOLUTE AMBITIOUS DIRECT (2) ECONOMICAL GOOD CHRISTIAN DULL	CAUTIOUS (2) INTELLIGENT ESTHETIC SENSE NORMAL STARTED WRONG BUT CORRECTED SELF RATIONAL KNOWS WHERE GOING SERENE AFFECTIONATE NORMAL IMAGINATION DECIDES ON OBJECTIVES BUT DOESN'T CHOOSE BEST WAY OBSTACLE-SHY PURPOSEFUL BUT AVOIDING SOMETHING PLIABLE ARTISTIC IRRESPONSIBLE CIRCUITOUS DESIRES REGULARITY YET WITH WIDER VISION ORDERED YET TENDENCY TO FANCIFUL ROUNDAABOUT ABSENT-MINDED PENSIVE INWARD-TURNING
DESIRABLE	INITIATIVE STUCK UP STRONG HONESTY AMBITIOUS PURPOSEFUL KNOWS WHAT DOING KNOWS WHAT AFTER DETERMINATION DULL (HORSE WITH BLINDERS) DETERMINED SELF-CONFIDENT TO THE POINT DIRECT NORMAL STRAIGHTFORWARD SIGHTED HIS GOAL THE PERFECT PERSONALITY	FORCEFUL SELF-CONFIDENT (2) STABLE HONEST ROUNDED PERSON GIVES LATITUDE TO THOUGHT MORE DECISIVE THAN OTHERS YET STILL SELF-RESTRAINED VARYING PERSONALITY BUT NOT TO SUCH GREAT EXTREME (AS E) IMAGINATION LACKING OR LACKS ABILITY TO SEE SHORTEST AND MOST LOGICAL PATH TIMID PERSON WHO USES INDIRECT METHODS OF APPROACH MORE INHIBITED (THAN REST OF PATHS) STEADY BUT PERHAPS A LITTLE FRIGHTENED OF WHAT IS AT END DEPENDABLE KIND PERSISTENT POSITIVE
UNDESIRABLE	DETERMINED STRONG CHARACTER STUBBORN KNOWS WHAT DOING STRAIGHTFORWARD (2) COURAGEOUS EVEN-TEMPERED STRONG CHARACTER (GOES DIRECTLY) UNAFRAID (THOUGH DEPENDS ON SPEED) MAKES UP MIND QUICKLY DETERMINED BUT FOOLHARDY UNINFORMED OR IGNORANT HERO COMPLEX DIRECT AND FRANK STRONG TRAITS STEADY	SENSIBLE AGGRESSIVE LEVEL-HEADED GOAL DIRECTED CHANGES MIND GRADUALLY BELIEVES CAN RISE ABOVE UNPLEASANT SITUATION AND MASTER OWN FATE WANTS TO GET PERSPECTIVE ON AN OBJECT NOT ON PATH CAUTIOUS BUT ALSO DARING UNDECIDED AS TO NECESSITY OF MEETING UNDESIRABLE GOAL TAKES LONG WAY TO SOMETHING "FACES UP" TO EVERYTHING IN LIFE AVOIDED DIRECT CONTACT WITH MALICE AFORETHOUGHT CONTROLLED MASOCHISTIC SOMEWHAT RESOLUTE ABLE TO FACE REALITY

Fig. 3. Preferred Responses Given to Paths A, C, E,
(The Numbers in Parentheses Refer
Who Gave a Certain Response

		 0	
RACTER VE (2) ENT GETS WORK DONE BUT TAKES TIME IT CASUAL SURE OF SELF THOUGH PERCEPTIVE LED	FORCEFUL HAPPY DRUNK FEARFUL	ARTISTIC MANIC-DEPRESSIVE IRRESPONSIBLE EPICUREAN METICULOUS EASY-GOING IMPRACTICAL LIKING FOR SIMPLICITY REACTS STRONGLY TO MONOTONY TENDS TO EXTREME POINTS OF VIEW CAREFUL, EXTREMELY CAUTIOUS CHANGEABLE BUT NOT NECESSARILY ERRATIC LOSES DIRECTION SLIGHTLY BUT COMPENSATES FOR MISTAKES TAKES THE EASIEST PATH REMINISCENT GAY, CAREFREE LAZY (2) SHY ROMANTIC INTUITIVE RELAXED, FANCIFUL	
RSONALITY THOUGHT RATHER THAN EMOTION D ABILITIES ECT METHODS E (THAN C) BUT NOT TOO INDECISIVE BECOMING HAPPY THEN DISAPPOINTED BSEQUENTLY DEPRESSED AGAIN L ADJUSTED NFIDENT BUT MORE THAN OTHERS DENT NFIDENCE E OF SELF		RIGID DIRECT EASY-GOING DEJECTED MOOD WITHDRAWN PERSONALITY GOES TO TOP THEN DOWN BUT IS ALWAYS TRYING TO GET TO TOP STARTS WITH BURST OF ENTHUSIASM - LATER LOSES INTEREST THEN STREAMS FULL AHEAD GRADUAL WORKING UP TO PROBLEM UNCERTAIN AS TO DESIRABILITY OF GOAL IRRATIONAL FITS OF ELATION AND DESPAIR DEVIATES BETWEEN HIGHS AND LOWS FOOLS HIMSELF EASILY DISTRACTED SNEAKY RELAXED (2) DECEPTIVE	
LS OUS ESOLUTE BUT NOT SPARTAN UP RAPIDLY BUT NOT COMPLETELY UCKY INEVITABLE PITY BOUT WHAT TO DO NDECISIVE AN RISE ABOVE UNPLEASANT IONS AND MASTER OWN FATE	OBJECTIVE CAUTIOUS LOTS OF TIME	DECISIVE CAUTIOUS CHANGED MIND SURE OF SELF RIGID BEHAVIOR FAIRLY INDECISIVE NOT TOO AWARE OF GOAL HAPPY: DOESN'T WORRY EVEN ABOUT UNPLEASANT THINGS HAD MOMENTS OF COMPLETE DESPAIR ABOUT WHERE GOING BUT RECOVERED HESITATION AT FIRST THEN DEFINITE TACKLING OF PROBLEM CHANGEABLE BUT COURAGEOUS	REALISTIC ARTISTIC UNSURE MELANCHOLY BALANCED NOT TOO STABLE
* NOTE: THE NUMBERS IN PARENTHESES REFER TO THE NUMBER OF SUBJECTS WHO GAVE A CERTAIN RESPONSE.			

path to the girl in the scene. The two curved paths would be presented as departures from this diagonal line. In the actual filming, the actor entered the scene from the upper right corner of the frame and proceeded to walk toward the actress seated at the lower left side of the frame. Miss Gregory and Dr. Cass also advised the Experimenter regarding the most neutral walking behavior for the actor and waiting behavior for the goal-girl as well as their attire. The distance of filming was such that it permitted the observation of distinctly different individuals, but reduced the possibility of close scrutiny of actors. This was done so as to minimize the influence of facial expressions and distinct physiognomic cues.

Presentation of Goal Valences

The goals for the actors moving along the chosen paths are provided by the actresses. This is a further effort to translate Tagiuri's abstract experimental conditions into a real life situation and presents what may be called a minimal dyad in that the stimulus scenes depict a minimally interacting boy and girl. It also presents a departure from the usual dyadic studies in social psychology in so far as the latter utilize as one member of the dyad the interacting subject whose responses are being sought. In the present experiment, the subjects are not involved in the dyadic situation which they are judging.

A valence for each goal (actress) in each scene was

provided for the viewing subjects on the top of each of their scoring sheets. In order to make sure that Subjects read this information before watching each of the six scenes, the Experimenter orally called their attention to notice the feelings of the boy for the girl in the upcoming scene. The instructions attributed to the actors a "first impression" of either "liking " or "disliking" the girl whom he has been asked to meet. In this report, "liking" is referred to as positive valence, "disliking" as negative valence. (For purposes of filming, the actors were neither questioned nor instructed regarding their like or dislike of the girl. For them there was simply an identical repetition of each of the three paths according to a prearranged sequence.)

Filming Procedures

The filming followed two days of rehearsals and was carried out in the same order and with the same predetermined actor-couple combinations set out by the design of the experiment. Thus, each row of the Greco-Latin square was turned into a reel of film sequences to be shown to one group of subjects. In this manner, the experimental design provided a counterbalancing of acting conditions for the actors themselves, and possibly minimized order effects (such as fatigue or boredom) which they might have introduced into their scenes by their manner or expression.

The main criterion for the location at which the films

were to be made was simply that it be an outdoor campus site which would make it natural and plausible for a boy to meet a girl, as might be observed with a "candid camera." In addition to this, it had to be a location that was unbroken by the presence of sidewalks and other physical barriers like trees which might predetermine the path. The main expanse of lawn on Boyd Street in front of the University of Oklahoma was found to meet these requirements.

The six boy and six girl actors were rehearsed on location. The frame of the scenes, as well as the different paths, were blocked out with small wooden pegs visible only to the actors. In the two days of rehearsals, they were trained, according to the suggestions of the Drama Faculty, to walk each path at the same rate of movement and to repeat all of the paths with gross bodily movements as identical as possible to minimize the probability of presenting unique expressive gestures or mannerisms on any single appearance. They were clothed in a manner to eliminate the portrayal of a particular socio-economic or aesthetic characteristic. The boys wore slacks and white shirt with no tie, as appropriate for summer attendance at classes. The actresses were dressed in colorful dresses and skirts and blouses typical of a summer coed's attire. Since the angle of the filming minimized their faces and the shapes of their figures, aesthetic variations of their appearance and facial features were not thought to present a methodological - --

problem. Each actress was instructed to sit on the lawn and remain occupied with books and notebooks provided as props, and when the actor arrived, to look up and appear to be saying a uniform and pleasant "hello" to the boy.

Each reel was composed of six half-minute scenes depicting a boy approaching and meeting a girl. As can be seen from Figure 1, each of the six reels contained six different actor-couples but all six of the stimulus conditions (three paths with two valences each). This is to say, each reel contained: Path I with a positive valence (Condition I); Path I with a negative valence (Condition II); Path II with a positive valence (Condition III); Path II with a negative valence (Condition IV); Path III with a positive valence (Condition V); Path III with a negative valence (Condition VI). The order in which these conditions appear is different for each reel, in accordance with the rows and columns of the Greco-Latin square.

Prior to the filming, all actors and actresses gave their written permissions for the films to be shown at any place and time as the Experimenter wished.

Instruments

To expedite the collection of data in this experiment, a Subject's Response Booklet (See Appendix A) was assembled. This thirteen page booklet, which was stapled in a different order for each group of subjects so as to be appropriate for the film sequence (reel) he was viewing, contained, besides an

an explanation of the nature of the experiment and basic instructions, the following instruments in this order:

1. Rating scales (with appropriate indication of goal valence) to be used in describing the male actors.
2. Gordon Personal Profile
3. Self-rating Scale
4. Personality Index
5. Sociological Questionnaire
6. Line drawings of paths, for eliciting subject's free-responses.

Each of these instruments is described in detail in the following paragraphs.

Rating Scales. A seven-point rating scale was developed on the basis of items obtained from a content analysis of the adjectives assigned by Tagiuri's subjects to the paths selected for the present study. In Tagiuri's study these adjectives describe the personalities of people who would walk the various paths which he presented as line drawings. In the present experiment, adjectives selected from his lists were used to describe a boy who walks over to meet a girl. In line with the suggestions of Orne (1959, 1962) and Rosenthal (1961), however, the path variable was embedded in the film as an integral part of the action; it was not specifically called to the subjects' attention.

The responses of Tagiuri's subjects (Fig. 3) for each

of the selected paths to be used in the present study were written one each on separate slips of paper. These adjectives included all of the subjects' responses to the four paths, A, C and E (which were combined into one in the present study), and O, when each of these paths was presented as leading to (1) a desirable goal, (2) an undesirable goal, and (3) an unspecified goal.

The adjectives were sorted into categories (based on relatedness and similarity in meaning), and subjected to the scrutiny of eight independent judges selected from among the Experimenter's acquaintances. Since the items fell into categories of relatedness and similarity in meaning and since there seemed to be almost complete consensus in this content analysis, no need was seen to carry out a more formal assignment. The Experimenter discarded only a few of the words or phrases which seemed to be extremely unique characterizations that did not justify the creation of a category due to their rarity. Examples of the categories formed are such items as: Persistent: stubborn, ambitious, strong-willed, persevering. Wavering: circuitous, roundabout, changeable but not erratic, changes mind, pliable, irresponsible, absent-minded, reminiscent. Following the content analysis, the categories were scaled as bi-polar traits, using for the poles the category names obtained by the informal sorting. This provided the logical semantic opposites for the trait in question, while

incorporating the separate adjectives and phrases supplied by Tagiuri's lists.

By adding a few adjectives to those obtained by the content analysis of Tagiuri's data, it was possible to construct four sets of four traits each, or a total of sixteen bipolar scales. These four sets correspond to the four major traits of the Gordon Personal Profile to be described in the next section. The rating scales are presented in Appendix 1.

On the subjects' scoring sheets, these sixteen bipolar scales were alternated in polarity direction to prevent the formation of position preferences. The order of presenting the scales was varied systematically so that each descending set of four scales is composed of one bipolar scale corresponding to each of the four Gordon scales. For instance, Scales 1, 5, 9, 13 would correspond to the Ascendency tetrad of Gordon; Scales 2, 6, 10, 14 would correspond to the Responsibility tetrad and so on. The tetrads corresponding to the Gordon Scales are presented in Figure 4. The selection of a seven-point scale as an optimal range of judgmental discrimination was based on recommendations in the scaling literature. Osgood (1957) summarizes the literature with the general conclusion that over a large number of subjects in many different experiments it has been found that with seven alternatives all of them tend to be used and with roughly equal frequencies (p. 85).

Ascendancy (A)	Responsibility (R)	Emotional Stability (E)	Sociability (S)
1. Weak-Strong	2. Indecisive-Decisive	3. Unstable- Stable	4. Cautious- Daring
5. Unsure-Self- confident	6. Wavering-Persistent	7. Sad-Happy	8. Cold-Warm
9. Submissive- Dominating	10. Fearful-Brave	11. Rigid Relaxed	12. Unsociable- Sociable
13. Dependent- Independent	14. Emotional-Rational	15. Excitable-Even- tempered	16. Shy-Outgoing

Fig. 4.--Lists of items from sixteen rating scales which form tetrads corresponding to the four Gordon Scales.

Scoring of the Scale Data. The raw data obtained by the use of these seven-point scales are a collection of check-marks against bipolar scales without interval numbers. For ease of scoring, the seven points were assigned, after the experiment, numbers ranging from the weak side (1) to the strong pole of that trait (7). A person's score on an item, then, is simply the digit corresponding to the scale position he has checked.

As a compromise in methodology between the use of forced-choice experimenter-selected and specified categories of judgment, and a totally free-response approach which makes quantitative analysis very difficult, the task for the subjects was to choose from these sixteen scales as he saw fit and felt that they were relevant in his desired ratings of the actors personality. And on those dimensions the subject felt were relevant, he was asked to check the amount of that trait.

It is suggested here that the adjectives selected for these rating scales may meet, in some sense, the objections of authors (e.g., Beach and Wertheimer, 1961; Bruner and Tagiuri, 1954; Hastorf, Richardson and Dornbusch, 1958; Tagiuri, 1958) who argue that experimenter-selected categories are not as relevant as subject-selected ("free-response") categories in revealing subjects' impressions of persons. Insofar as the rating scales employed here are based on

responses of college students in Tagiuri's (1960) study to the abstract forms of the paths used in the present study, it is not improbable that they may not differ too widely from the "free-responses" which the subjects of the present study might have given. This point should not be pressed too far, but it does deserve reflection. It is based on an undemonstrated but not unreasonable assumption that the Harvard students of 1960 were in many ways comparable to the University of Oklahoma students of 1967.

Gordon Personal Profile. Since it was the intention of this study to investigate the relationship between the judging subject's own personality and the first impression judgments of personality of the stimulus persons (actors), a search was undertaken to find a personality test that would not only be practical in its administration, scoring, interpretation, but also would tap those aspects of personality that would be especially relevant for interpersonal situations. For purposes of this study, the Rorschach test, for instance, would have been inappropriate not only for its complexity of administration, scoring, and interpretation, but also because such an instrument would not have yielded a specific workable Sociability or Ascendency or Dominance score that would allow for comparative evaluation among subjects. Furthermore, we wanted a personality test which would be at a different level (Level 3, Leary, 1957) of informativeness than

a self-rating type of (Level 2) instrument with which it was going to be supplemented.

The Gordon Personal Profile (1963 Revision) appeared to be an especially suitable instrument for our purposes. Its essential features will be detailed below. An analysis of its items also appeared to be so similar to the contents of concepts covered by Tagiuri's list of adjectives that by the addition of a few more adjectives to those compiled from Tagiuri's list, we were able to establish sixteen pairs of bipolar adjectives to correspond to the coverage of the four Gordon tetrads.

The Gordon Personal Profile as described in the Manual for the 1963 Revision presents measures of four personality traits: Ascendancy, Responsibility, Emotional Stability, and Sociability. Each of these traits is represented in a tetrad which is a set of four descriptive phrases. Two of the phrases in each tetrad are considered by typical individuals to be equally complimentary; two are considered to be equally uncomplimentary. The Profile contains eighteen of these tetrads. Through forced-choice technique, the respondent marks one item in each tetrad as being most like himself and one as being least like himself. Thus, the respondent cannot mark all items favorably, as in the conventional self-report inventories. Gordon considers that this renders his Profile less susceptible to distortion by an individual who wants to make a good score.

This test was selected for this study because it purports to tap dimensions which are relevant to the description of interpersonal aspects of personality and is appropriate for use with college age adults. Most respondents complete this test between seven to fifteen minutes. In a test with 200 college freshmen, the Ruder-Richardson reliability coefficients ranged from .74 to .85 for the four tetrads. The split-half reliability with 140 college students was better than .86, while the test-retest reliability was .85. (Gordon, 1963).

Self-rating Scale. This is the scale of sixteen bipolar adjectives previously described as a scale for rating the actors.

Personality Index. To determine how the subject perceived himself in relation to the action in the film, he was shown drawings of the three paths, and asked which path he, himself, would have taken (a) under conditions where he liked a girl, and (b) under conditions where he disliked a girl. Each subject's scoring sheet yielded two check marks showing his choices. These check marks were converted into a score from 1 - 9 (Fig. 5). The resulting score is termed here the "Personality Index."

Sociological Questionnaire. To insure the protection of the subjects' privacy and elicit maximum candor, the first item in this instrument repeats, in capital letters, the instructions printed at the start of the experiment that no

Personality Index	1	2	3	4	5	6	7	8	9
Going to a <u>Disliked</u> Girl									
Going to a <u>Liked</u> Girl									

Fig. 5.--Schematic Presentation of the "Personality Index"

names are wanted. This questionnaire contains items concerning age, sex, socio-economic status, education, etc., of the subjects. The last item attempts to elicit some spontaneous information about their own bases of evaluating people in general. For details refer to Appendix 1. (This will not be analyzed in this study.)

Free-response to Line Drawings. Here the three paths used in the experiment are presented as line drawings and essentially the same questions as asked by Tagiuri are presented to the subjects. Their task is to describe in their own words the personalities of boys taking these paths under the conditions of approach to (a) a liked girl and (b) a dis-liked girl. This instrument presents the variables of path, goal-object, and goal-valence. (This will not be analyzed here.)

Selection of Subjects. Subjects were recruited in the following manner. The Experimenter with prior arrangement and permission of the instructors, went to six sections of Psychology I classes and talked to the students. The text which she memorized and delivered was as follows:

We have made a short film last summer on this campus, and I am here to ask you all to please come and see it and express your opinions about it. As you probably know by now, without the kind participation of Psychology I students all over the United States there would be no scientific knowledge gained for the field of psychology . . . so, I would appreciate it very much if you would be kind enough to show up to view my film. Now, I am also very glad to remind you, as your instructor must have told you,

that there is a small reward in it for you in being a subject in these psychology experiments: I think you get a certain bonus in your course grade for every hour you spend in these experiments, (turning to the instructor) do they not, Mr. _____? (Instructor here spells out the exact nature of the grade increment). Of course I hope all of you are A students and you don't need any such, and you simply come and look at my short film out of your kindness and wish to help out a fellow student. Needless to add, you are entirely free to participate in this particular project, but I should hope you won't find it too uninteresting a job. It won't take much more than an hour of your time. Now, let me pass out these sheets of scheduled showings, and if you are interested and wish to come, please write your names for the particular session that will be convenient for you. As you will notice, there will be six showings on these dates and in this locale.

As this procedure was found to take up quite a bit of class time, in the later sections, the Experimenter said:

Now, let me write down on the board when and where it is going to be shown, and those of you who are interested, please be kind enough to write your name on a piece of paper, indicating the day and the session which is most convenient for you. I certainly would appreciate it if you all come, and please folks, if you say you will come, do come, OK?

On the sign-up sheets which were passed out to the students were these words:

Students who wish to participate in a social-psychology experiment (watching a movie), please sign up below:

Time: _____

Place: _____

From the six sections recruited in this informal manner, 85% turned up for the films which made a total of 238 students (108 boys and 130 girls).

Instructions and Experimental Procedures. The following text was the first page of the response booklets passed

around. The Experimenter asked the subjects in each group to follow her along from the page as she read them out loud, in several places supplementing the text with additional statements and repetitions for purposes of stress and clarification. The impromptu appearing additional comments will be indicated in parentheses.

IN THE EXPERIMENT WHICH FOLLOWS YOU ARE TO REMAIN ENTIRELY ANONYMOUS SO THAT YOU WILL FEEL FREE IN YOUR JUDGMENTS. DO NOT WRITE YOUR NAME ANY PLACE IN THIS BOOKLET.

WHAT THE EXPERIMENT IS ABOUT

You are probably all familiar with the "Candid Camera" program of TV. This experiment you are participating in is very similar to and considerably suggested by the Candid Camera show.

Its purpose is to find out something about how people form impressions of the personality of others with whom they are not yet acquainted.

Here is the way our candid camera was used: We selected six coeds--all of about the same age and equally attractive--and requested them to participate in an experiment. Each girl was asked to sit in a predetermined spot on the campus lawn--this was done on different days. She was instructed that she had nothing to do but sit there and wait to meet a boy who would be sent over to her. Once our stooge-girl was seated on the lawn, we walked over to the sidewalk and waited for a boy to come along. We stopped him and pointed out the girl to him. We asked him for his first impressions of her--did he think she was a person he might like. Some boys said "definitely yes," and some said, "definitely no." In other words, some boys in their first impressions expressed a like and some boys a dislike for this girl seated at some short distance whom they did not know.

Whether or not a boy liked a girl, he was asked if he would be willing to meet her anyway. Some absolutely refused; those, naturally, will not be seen in our movie. Others went along with the request. (Here the Experimenter added: "And

in cases where a certain boy looked over and said, 'Hey that's Sally, I know her,' we thanked him and said in so many words, 'OK, go on, see you around.' These boys, then, were not filmed either.")

In the film which is going to be presented to you, you will see six separate shots of a boy meeting a girl. (These are very short scenes.) Each boy is different, and each girl is different in each scene. Whether a boy expressed a like or a dislike for the girl, that information is indicated on each of your six scoring sheets.

Now, your task is to observe in each scene a boy meeting a girl. By first looking at your scoring sheet before watching a scene, you will know whether he liked or disliked the girl. After you have watched a scene, you are to fill out a rating scale indicating your first impressions of that boy's personality. (Remember now, it is the boy's personality that we are after . . . and by the way, if it turns out that you personally happen to know any of these six boys, please say so-- out loud, or write it down on your sheet, since then your judgments, naturally, would not be first impressions which is what we are after.)

Now, please turn the page and read the specific instructions.

The second page of the booklet contained instructions regarding the marking of the scales (Appendix 1).

With the start of the presentation of the stimulus films, the Experimenter again supplemented the written "The boy likes this girl" or "The boy dislikes this girl" caption at the top of each scoring sheet, by announcing, before the lights were turned off for the showing of each scene, "Please notice the feelings of the boy . . . did everybody? Ready for the next young man?" to insure the perception of the valence variable so crucial to the experimental interest in the situational context.

At the end of the experiment, along with the thanks

of the Experimenter, they were requested to please not discuss the nature of the film with their friends who might well be the future subjects asked to view the same film.

CHAPTER III

RESULTS

Measuring Instruments

Comparison of Tables 1 and 2 reveals that the inter-correlations among the four Gordon scales for college men and women in this study are consistent with the normative data for college men and women presented by Gordon in his 1963 Manual.

Table 3 shows the correlation coefficients between Gordon Personal Profile scores and Self-rating scale scores for men and women. While the sixteen rating scales were developed from the free-response categories provided by Tagiuri's tables, it is of interest to observe that, in general, these category items exhibit positive and significant, though moderate, relationships to comparable items on a standardized personality test. This suggests some comparability of content between the Rating Scales and the Gordon Personality Profile.

For men, an r of .26 is required for significance at the .01 level, while an r of .20 is required for significance at the .05 level. Out of 64 correlations for men in Table 3,

Table 1

Intercorrelations Among the Gordon Personal Profile
Scores for Male and Female College
Students in this Study

Men (N = 100)				Women (N = 127)			
	<u>A</u>	<u>R</u>	<u>E</u>		<u>A</u>	<u>R</u>	<u>E</u>
R	.17			R	.01		
E	.31	.30		E	.01	.46	
S	.67	.07	.13	S	.68	-.00	-.12

Table 2

Intercorrelations Among the Gordon Personal Profile
Scores for Male and Female College
Students (Gordon, 1963)

Men (N = 315)				Women (N = 640)			
	<u>A</u>	<u>R</u>	<u>E</u>		<u>A</u>	<u>R</u>	<u>E</u>
R	-.01			R	.04		
E	.09	.60		E	.09	.56	
S	.65	.00	-.09	S	.64	-.01	-.13

Table 3

Correlation Coefficients Between Gordon Personal Profile
Scores and Self-rating Scale Scores for
Men (N = 100) and Women (N = 127)

Self-rating Scale	Gordon Personal Profile							
	Ascend- ancy		Responsi- bility		Emotional Stability		Sociability	
	M.	F.	M.	F.	M.	F.	M.	F.
1. Strong	.35	.39	.23	.31	.20	.25	.33	.11
2. Decisive	.36	.44	.29	.27	.15	.19	.12	.18
3. Stable	.29	.31	.35	.29	.33	.21	.31	.19
4. Daring	.36	.38	.12	-.12	.25	-.04	.33	.24
5. Self- confident	.42	.59	.36	.19	.23	.00	.39	.35
6. Persistent	.32	.23	.32	.34	.17	.03	.16	.05
7. Happy	.18	.27	.21	.31	.23	.20	.26	.30
8. Warm	.27	.29	.09	.02	.07	-.00	.44	.38
9. Dominating	.41	.44	.25	-.02	.11	-.09	.18	.21
10. Brave	.18	.47	.21	.35	.03	.14	.14	.30
11. Relaxed	.33	.49	.23	.26	.33	.28	.27	.31
12. Sociable	.36	.51	.10	.11	.12	-.09	.63	.60
13. Independent	.17	.28	.15	.43	.19	.20	.04	.12
14. Rational	.09	.02	.27	.44	.32	.32	.01	.01
15. Even- tempered	.29	.00	.26	.33	.35	.31	.11	-.05
16. Outgoing	.45	.60	.14	.03	.18	-.13	.59	.63

Note: (1) The self-rating items have been named for the positive pole of the bipolar factor. For example, the Weak-Strong dimension is called strong.

(2) Underlined items in a column are correlations between Gordon scores and Rating scale items which are grouped as tetrads used for the analysis of variance.

31 are significant at the .01 level and 9 at the .05 level. For women, the situation is parallel. An r of .23 is required for significance at the .01 level, while an r of .18 is needed for significance at the .05 level. In this table, 36 coefficients out of a total of 64 are significant at the .01 level, and 8 are significant at the .05 level. The underlined items in the columns are correlation coefficients between the Gordon Scale tetrad scores and the Rating Scale items which are grouped as tetrads corresponding in name to the Gordon tetrads at the top of the columns. It is apparent that these particular correlations are generally higher, both for men and for women, than the correlations between different tetrad items. For women, 14 out of 16 of these coefficients are significant at the .01 level, while 2 are significant at the .05 level. For men, 13 out of 16 are significant at the .01 level, while 3 are significant at the .05 level. While these correlations are of moderate size, they do lend some justification for the use of tetrad scores, based on the 16 item rating scales, in the ensuing statistical tests. The correlations between each Self-rating tetrad item and the corresponding Gordon Personality Profile tetrad provide, then, a measure of internal consistency which meets the requirements for cluster scoring as outlined by Cronbach (1953).

As a further test of internal consistency in the rating scales, the item intercorrelations of the 16 scales were

calculated on the basis of subjects' Self-rating data. These appear in Tables 4 and 5. For men, in Table 4, an r of .26 is significant at the .01 level, and an r of .20 is significant at .05 level. Out of 120 correlation coefficients, 47 are significant at the .01 level, while 20 are significant at the .05 level. For women, in Table 5, an r of .23 is significant at the .01 level, and an r of .18 is significant at the .05 level. Out of 120 coefficients, 70 are significant at the .01 level, while 15 are significant at the .05 level. Further justification for grouping rating items into tetrads is provided here since the correlation coefficients are for the most part higher between items within the same tetrad than between items from different tetrads.

The Rating Scales comprise the chief instrument used by subjects in describing actors in this study. The final scores on each Rating Scale sheet consist of four tetrad scores. A tetrad score is the sum of the ratings assigned to each of the items composing a tetrad. The sum of ratings was chosen as the tetrad score rather than the average rating, since the latter fails to distinguish those who may have omitted checking a tetrad item--i.e., the average is based on items actually checked, so that an individual who checks only one or two items might be assigned the same score as one who checks them all.

Table 4

Intercorrelations Among the Self-rating
Scales for Men (N = 100)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1															
2	.33														
3	.35	.35													
4	.36	.15	.22												
5	.48	.31	.50	.54											
6	.17	.26	.18	.14	.32										
7	.24	.29	.56	.13	.37	.04									
8	.07	-.14	.34	.18	.35	.25	.21								
9	.37	.26	.16	.21	.43	.30	.05	.15							
10	.33	.19	.16	.12	.15	.26	.04	.01	.22						
11	.25	.00	.25	.28	.26	.06	.23	.25	.33	.16					
12	.40	.26	.46	.18	.36	.15	.54	.36	.19	.09	.22				
13	.26	.22	.25	.15	.20	.13	.21	-.06	.24	.27	.11	.17			
14	.22	.18	.22	.17	.29	.13	.08	-.00	.08	.19	.32	.02	.15		
15	.02	.20	.17	.09	.21	.28	.13	.18	.30	.08	.42	.14	.12	.50	
16	.27	.12	.27	.31	.48	.18	.31	.34	.27	.09	.26	.46	.19	.06	.08

Table 5

Intercorrelations Among the Self-rating
Scales for Women (N = 127)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1															
2	.47														
3	.47	.38													
4	.14	.01	-.00												
5	.53	.46	.46	.30											
6	.27	.38	.28	.10	.42										
7	.21	.19	.45	.10	.32	.21									
8	.07	.05	.08	.20	.13	.15	.38								
9	.26	.29	.19	.22	.41	.23	.06	.08							
10	.44	.36	.38	.25	.40	.36	.12	.10	.39						
11	.42	.27	.31	.36	.49	.27	.44	.29	.21	.43					
12	.15	.13	.28	.24	.30	.26	.40	.48	.21	.22	.42				
13	.56	.46	.40	-.04	.30	.28	.23	.05	.24	.46	.25	.08			
14	.29	.26	.28	.23	.12	.30	.22	-.14	.01	.22	.15	-.06	.34		
15	.23	.01	.24	.02	.05	.11	.30	.03	.17	.13	.25	.00	.09	.50	
16	.20	.22	.18	.35	.34	.32	.32	.40	.45	.32	.37	.64	.20	-.05	.11

Statistical Hypotheses

The five major hypotheses of this study were stated at the end of Chapter I. Here they will be restated as null hypotheses, to be tested by means of analysis of variance.

Hypothesis 1: Regardless of path, the personality traits ascribed to an actor walking that path will be a function of which actor he is.

This is reformulated as the null hypothesis: $(M = u)$

$$H_0: M_{A_1} = M_{A_2} = M_{A_3} = M_{A_4} = M_{A_5} = M_{A_6},$$

where M_A is the mean personality rating assigned to an actor designated by the numerical subscript.

Hypothesis 2: Regardless of actor, the personality traits ascribed to him will be a function of the path he walks.

This is reformulated as the null hypothesis:

$$H_0 = M_{P_{i1}} = M_{P_{i2}} = M_{P_{i3}},$$

where M_P is the personality rating assigned to an actor (i) on a path designated by the numerical subscript. ($i = 1$ to 6)

Hypothesis 3: There will be differences in assigned personality traits as a function of the valences (like or dislike of the goal) of the path.

This is restated as the null hypothesis:

$$H_0: M_{V_{1jk}} = M_{V_{2jk}},$$

where M_{V_1} is the mean personality rating assigned to an actor (j) under conditions of a positive valence path (liked goal), M_{V_2} is that rating assigned to an actor (j) under conditions of a negative valence path (disliked goal), and k is the path. (j = 1 to 6; k = 1 to 3)

Hypothesis 4: There will be differences in trait assignment between male and female viewers.

This is restated as the null hypothesis:

$$H_0: M_{S_{1j}} = M_{S_{2j}},$$

where $M_{S_{1j}}$ is the mean rating of an actor (j) by a male viewer, $M_{S_{2j}}$ is the mean rating assigned by a female viewer. (j = 1 to 6)

Hypothesis 5: Regardless of the identity of the actor, the type of path, or the sex of the perceiver, a subject's personality as assessed through an objective test will be related to his over-all trait assignment to actors.

This may be reformulated as the null hypothesis:

$$H_0: M_{G_1} = M_{G_2}$$

where M_{G_1} is the mean of all personality ratings assigned to actor (i) by subjects with high scores on a Gordon scale, and M_{G_2} is the mean assigned to actor (i) by subjects with low scores on a Gordon scale.

In addition to these hypotheses, it is anticipated, on the basis of the literature on person perception, (Hypothesis 6) that there may be significant interactions between

the stimulus variables of path, actor and goal valence, and the perceiver variables of sex and personality. This will not be formally stated as a null hypothesis, since it is questioned whether the design of the present experiment will permit a clear-cut test of it.

Analysis of Variance of Greco-Latin Square

Four sets of rating scale tetrad scores (Ascendancy, Responsibility, Emotional Stability and Sociability) were obtained from 180 subjects (105 females and 75 males) for the six actors, each of whom walked three paths (one time with a positive goal, one time with a negative goal). The subjects were among those who remained after elimination of incomplete protocols. For the analysis of variance, they were formed into six equal groups ($N = 30$) by the use of random number tables. The design of the experiment is displayed in Figure 1.

The analysis of this experiment was carried out by the methods described in Winer (1962, pp. 546-549). It was programmed and executed on an IBM 360-40 computer.

Tables 6, 7, 8 and 9 contain the results of the analysis of variance of the Greco-Latin square. It will be observed that, for each of the Rating Scale tetrads, Ascendancy, Responsibility, Emotional Stability and Sociability, the F -ratios for path and actor main effects are all statistically significant at the $p .001$ level. Scenes, an order effect,

Table 6
Summary of Analysis of Variance of Greco-Latin
Square for Rated Ascendance (Tetrad 1)

Source of Variation	df	MS	F
Groups (Reels)	5	65.75	.655
Subjects Within Groups	174	100.33	
Scene	5	114.82	8.969*
Path	5	1332.52	104.094*
Actor	5	765.56	59.804*
Residual	15	140.84	
Error (Within)	<u>870</u>	12.80	
TOTAL	1079		

*Significant at $p < .001$ level.

Table 7

Summary of Analysis of Variance of Greco-Latin
Square for Rated Responsibility (Tetrad 2)

Source of Variation	df	MS	F
Groups (Reels)	5	161.65	1.664
Subjects Within Groups	174	97.10	
Scene	5	19.14	154.732*
Path	5	1754.10	41.193*
Actor	5	466.99	15.393*
Residual	15	174.50	
Error (Within)	<u>870</u>	11.33	
TOTAL	1079		

*Significant at $p < .001$ level.

Table 8
 Summary of Analysis of Variance of Greco-Latin
 Square for Rated Emotional Stability
 (Tetrad 3)

Source of Variation	df	MS	F
Groups (Reels)	5	173.96	2.429*
Subjects Within Groups	174	71.61	
Scene	5	58.49	3.578**
Path	5	868.80	53.146***
Actor	5	603.54	36.920***
Residual	15	74.50	
Error (Within)	<u>870</u>	16.34	
TOTAL	1079		

*Significant at $p < .05$ level.

**Significant at $p < .01$ level.

***Significant at $p < .001$ level.

Table 9

Summary of Analysis of Variance of Greco-Latin
Square for Rated Sociability (Tetrad 4)

Source of Variation	df	MS	F
Groups (Reels)	5	53.15	.511
Subjects Within Groups	174	103.88	
Scene	5	256.69	28.580*
Path	5	1329.74	148.056*
Actor	5	934.64	104.064*
Residual	15	103.19	
Error (Within)	<u>870</u>	8.98	
TOTAL	1079		

*Significant at $p < .001$ level.

also show a significant F-ratio in all four tetrads. The interpretation of the findings, however, is not unequivocal. The mean squares due to scenes is confounded by differences due to actors and to paths which are both embedded in scenes. While the F-ratio for scenes suggests significant order effects, this cannot be ascertained simply by the analysis of the Greco-Latin square. In addition to this, it is not possible to state unequivocally that a large influence on person perception is exerted by paths and by actors, each taken singly, since the highly significant F-ratios ($p < .001$) level suggest the probability of interaction among the main effects of the analysis. An integrated analysis of variance should reveal interactions, if any exist, since this form of analysis accounts not only for the variance of both nested and nesting factors, but also for the variance of fixed as well as random factors.

It may be only cautiously stated, then, that the Greco-Latin square analysis of variance offers support for Hypotheses 1 and 2 of this study, in that highly significant differences are suggested both between actors and between paths.

Since the mean squares for scenes is confounded by differences due to actors and paths, both of which are embedded in scenes, it is probable that scene variance is not a simple measure of order effects in this experiment. If

it is defensible to regard order effects of questionable significance in the results, perhaps it is justifiable to treat the Greco-Latin square as a means of counterbalancing rather than as the chief design for the analysis of variance. If it may be so regarded, then the question arises as to other possible ways in which the variance might be analyzed. Two analyses would be of immediate interest to the hypotheses of this study.

Four-Factor Integrated Analysis of Variance

The squares of the Greco-Latin design were rearranged (Figure 6) on the basis of the assumption stated above, into a four-factor design to test the following hypotheses.

1. (Actors) $H_0: M_{A_1} = M_{A_2} = M_{A_3} = M_{A_4} = M_{A_5} = M_{A_6}$
4. (Sex) $H_0: M_{S1j} = M_{S2j}$
5. (Personality) $H_0: M_{G1} = M_{G2}$

This design compares the differences among the six actors regardless of the paths they walked; and it partitions the variance between high and low scores on the Ascehdancy tetrad of Gordon, as well as between male and female viewing subjects. The statistical design is shown in Figure 8. where subjects are nested in Gordon tetrad and sex. Subjects are random factors, while all other factors are fixed. In the design there are six actors.

Rearranged Within Reel Number:	Scenes					
	1	2	3	4	5	6
1	1 - 1	3 - 2	5 - 3	6 - 4	4 - 5	2 - 6
2	5 - 1	2 - 2	1 - 3	3 - 4	6 - 5	4 - 6
3	6 - 1	4 - 2	3 - 3	2 - 4	1 - 5	5 - 6
4	2 - 1	5 - 2	6 - 3	4 - 4	3 - 5	1 - 6
5	4 - 1	6 - 2	2 - 3	1 - 4	5 - 5	3 - 6
6	3 - 1	1 - 2	4 - 3	5 - 4	2 - 5	6 - 6

Fig. 6.--Re-arrangement of Greco-Latin design for Actor--which is the second of the pair. (First of the pair is path.)

Rearranged Within Reel Number:	Scenes					
	1	2	3	4	5	6
1	1 - 1	2 - 6	3 - 2	4 - 5	5 - 3	6 - 4
2	1 - 3	2 - 2	3 - 4	4 - 6	5 - 1	6 - 5
3	1 - 5	2 - 4	3 - 3	4 - 2	5 - 6	6 - 1
4	1 - 6	2 - 1	3 - 5	4 - 4	5 - 2	6 - 3
5	1 - 4	2 - 3	3 - 6	4 - 1	5 - 5	6 - 2
6	1 - 2	2 - 5	3 - 1	4 - 3	5 - 4	6 - 6

Fig. 7.--Re-arrangement of Greco-Latin design for path--which is the first of the pair. (Second of the pair is actor.)

Sex	Gordon	Subjects (R)	Actor
			A_j
s_1	G_1	1 18	X_{SGAR}
	G_2	1 18	
s_2	G_1	1 18	
	G_2	1 18	

Fig. 8--Statistical design for four-factor integrated analysis of variance for study of actor effects.

The subjects consist of the 18 highest and 18 lowest scorers in the Gordon Ascendancy tetrad both for males and for females. Thus there are 36 males and 36 females among the subjects. The Ascendancy tetrad was selected as the dichotomizing criterion since it showed the highest correlation with self-ratings and also distinguished path preferences to be described later in this chapter.

This four-factor integrated analysis of variance, as well as the five-factor analysis to be described next, was conducted according to the methodology proposed by Dahlke⁴, and programmed for calculation on an IBM 1620 computer.

The results of the four-factor analysis of variance for each of the four rating tetrads appear in Tables 10 through 13. For each of the rating scale tetrads, a significant F-ratio is found for the actor main effect. Corresponding means are shown in Table 14. Inspection of these means reveals that Actors 1 and 4 are rated strongest in all four of the traits; Actor 2 is rated weakest, while the others are rated in the middle. None of the other main effects (sex and Gordon) or interactions shows a significant F-ratio. The results of these four separate analyses of variance provide support for Hypothesis 1, but fail to support Hypotheses 4 and 5. It appears warranted, then, to infer that, regardless of path, the personality traits ascribed to an actor walking

⁴See Dahlke, A.E., Integrated Approach to Analysis of Variance, Mimeographed paper, University of Oklahoma, 1965.

Table 10

Summary of Integrated Four-Factor Analysis
of Variance for Rated Ascendance
(Tetrad 1)

Source of Variation	df	MS	F
Sex (S)	1	205.570	3.112
Gordon (G)	1	102.090	1.549
Actors (A)	5	322.444	9.791*
Subjects (R)	68	65.909	
S x G	1	37.920	0.575
S x A	5	15.814	0.480
G x A	5	54.742	1.662
S x G x A x R	340	32.932	
G x A x S	5	4.634	0.141

*Significant at $p < .001$ level.

Table 11

Summary of Integrated Four-Factor Analysis of
Variance for Rated Responsibility
(Tetrad 2)

Source of Variation	df	MS	F
Sex (S)	1	190.669	3.018
Gordon (G)	1	138.947	2.199
Actors (A)	5	189.064	5.486*
Subjects (R)	68	63.174	
S x G	1	101.110	1.600
S x A	5	17.630	0.512
G x A	5	16.620	0.482
S x G x A x R	340	34.460	
G x A x S	5	21.152	-.614

*Significant at $p < .001$ level.

Table 12
Summary of Integrated Four-Factor Analysis of
Variance for Rated Emotional
Stability (Tetrad 3)

Source of Variation	df	MS	F
Sex (S)	1	178.900	2.557
Gordon (G)	1	0.000	0.000
Actors (A)	5	214.010	8.939*
Subjects (R)	68	69.950	
S x G	1	46.680	0.667
S x A	5	13.936	0.582
G x A	5	9.972	0.416
S x G x A x R	340	23.941	
G x A x S	5	28.604	1.195

*Significant at $p < .001$ level.

Table 13
 Summary of Integrated Four-Factor Analysis
 of Variance for Rated Sociability
 (Tetrad 4)

Source of Variation	df	MS	F
Sex (S)	1	98.230	1.704
Gordon (G)	1	1.120	0.019
Actors (A)	5	462.764	14.889*
Subjects (R)	68	57.645	
S x G	1	41.570	0.721
S x A	5	37.888	1.219
G x A	5	15.700	0.505
S x G x A x R	340	31.079	
G x A x S	5	14.618	0.470

*Significant at $p < .001$ level.

Table 14

Actor Means: Average Rating in Each Tetrad for
Each Actor, Regardless of the Path He Walked

Tetrad	Actors					
	1	2	3	4	5	6
1. *Ascendancy	17.80	12.51	15.37	18.25	14.94	14.88
2. *Responsibility	16.43	12.22	14.18	16.56	14.80	14.22
3. *Emotional Stability	15.68	12.86	16.40	18.16	15.97	15.30
4. *Sociability	18.40	12.90	16.33	20.50	16.56	16.15

*Actor main effects significant at $p < .001$ level.

that path will be a function of which actor he is.

Five-Factor Integrated Analysis of Variance

A second rearrangement (Figure 7) of the Greco-Latin square permitted investigation of the following hypotheses:

2. (Path) $H_0: M_{P_1} = M_{P_2} = M_{P_3}$
3. (Valence) $H_0: M_{V_{1jk}} = M_{V_{2jk}}$
4. (Sex) $H_0: M_{S_{1j}} = M_{S_{2j}}$
5. (Personality) $H_0: M_{G_1} = M_{G_2}$

This statistical design, which is displayed in Figure 9, compares the mean differences in tetrad scores assigned the same actors when they walked each of three paths under two valence conditions. As in the previous design, the variance is further partitioned between high and low Gordon ascendancy scores of the perceivers and between sexes. As will be observed from Figure 9, the statistical design shows subjects nested in Gordon scores and in sex. Subjects are random factors, while the other factors are fixed.

The subjects in this experimental design are identical with those in the four-factor analyses.

The results of the five-factor analysis of variance for each of the four rating tetrads appear in Tables 15 through 18. It will be observed that the analysis of Ascendancy and Responsibility (Tables 15 and 16) shows significant main effects of Path, and significant interactions of valence

			Valence					
			V ₁			V ₂		
			Paths			Paths		
Sex	Gordon	Subjects (R)	P ₁	P ₂	P ₃	P ₁	P ₂	P ₃
S ₁	G ₁	1 ⋮ 18	X _{VPSGR}			X _{VPSGR}		
	G ₂	1 ⋮ 18						
S ₂	G ₁	1 ⋮ 18						
	G ₂	1 ⋮ 18						

Figure 9.--Statistical Design for Five-Factor Integrated Analysis of Variance for Study of Path and Valence Effects.

Table 15

Summary of Integrated Five-Factor Analysis for
Rated Ascendance (Tetrad 1)

Source of Variation	df	MS	F
Valence (V)	1	0.240	0.010
Path (P)	2	1586.010	43.226**
Sex (S)	1	205.570	3.119
Gordon (G)	1	102.090	1.549
Subjects (R)	68	65.909	
V x P	2	11.560	0.505
V x S	1	65.320	2.909
V x G	1	161.320	7.185*
V x G x S x R	68	22.451	
P x S	2	2.480	0.067
P x G	2	10.525	0.287
P x G x S x R	136	36.690	
S x G	1	37.920	0.575
P x S x V	2	10.090	0.440
P x G x V	2	2.260	0.099
S x G x V x P x R	136	22.906	
S x G x P	2	26.705	0.728
S x G x P x V	2	13.445	0.587

**Significant at $p < .001$ level.

*Significant at $p < .01$ level.

Table 16

Summary of Integrated Five-Factor Analysis for
Rated Responsibility (Tetrad 2)

Source of Variation	df	MS	F
Valence (V)	1	0.148	0.006
Path (P)	2	1853.065	59.575**
Sex (S)	1	205.565	3.208
Gordon (G)	1	116.148	1.813
Subjects (R)	68	64.074	
V x P	2	0.560	0.023
V x S	1	42.820	1.807
V x G	1	122.460	5.167*
V x G x S x R	68	23.699	
P x S	2	2.900	0.093
P x G	2	1.175	0.038
P x G x S x R	136	31.104	
S x G	1	85.330	1.332
P x S x V	2	7.510	0.314
P x G x V	2	11.230	0.469
S x G x V x P x R	136	23.924	
S x G x V	1	12.680	0.535
S x G x P	2	6.585	0.212
S x G x P x V	2	7.005	0.293

**Significant at $p < .001$ level.

*Significant at $p < .05$ level.

Table 17

Summary of Integrated Five-Factor Analysis for
Rated Emotional Stability (Tetrad 3)

Source of Variation	df	MS	F
Valence (V)	1	305.020	15.758**
Path (P)	2	724.695	31.875**
Sex (S)	1	190.670	2.838
Gordon (G)	1	1.020	0.015
Subjects (R)	68	67.183	
V x P	2	34.940	1.660
V x S	1	19.170	0.990
V x G	1	79.220	4.093
V x G x S x R	68	19.357	
P x S	2	27.920	1.228
P x G	2	33.965	1.494
P x G x S x R	136	22.734	
S x G	1	52.780	0.786
P x S x V	2	1.360	0.065
P x G x V	2	17.780	0.845
S x G x V x P x R	136	21.046	
S x G x V	1	0.840	0.043
S x G x P	2	56.780	2.497
S x G x P x V	2	23.780	1.130

**Significant at $p < .001$ level

Table 18

Summary of Integrated Five-Factor Analysis for
Rated Sociability (Tetrad 4)

Source of Variation	df	MS	F
Valence (V)	1	389.120	12.040**
Path (P)	2	1124.475	35.848**
Sex (S)	1	104.040	1.809
Gordon (G)	1	1.820	0.032
Subjects (R)	68	57.517	
V x P	2	26.600	0.923
V x S	1	5.790	0.179
V x G	1	122.450	3.789
V x G x S x R	68	32.317	
P x S	2	11.920	0.380
P x G	2	19.180	0.611
P x G x S x R	136	31.367	
S x G	1	45.360	0.789
P x S x V	2	0.455	0.016
P x G x V	2	6.530	0.226
S x G x V x P x R	136	28.819	
S x G x V	1	2.090	0.065
S x G x P	2	23.770	0.758
S x G x P x V	2	10.715	0.372

**Significant at $p < .001$ level.

Table 19

Path Means: Average Rating in Each Tetrad, for
the Composite of Six Actors, for Each Path

Tetrad	P a t h					
	P ₁ ⁺	P ₂ ⁺	P ₃ ⁺	P ₁ ⁻	P ₂ ⁻	P ₃ ⁻
1. *Ascendancy	19.47	14.98	12.50	18.80	15.43	12.58
2. **Responsibility	18.54	14.20	11.51	18.70	14.12	11.54
3. **Emotional Stability	19.56	16.12	14.16	16.84	14.56	13.40
4. **Sociability	21.19	17.22	14.81	18.33	15.59	13.61

* Path main effects significant at $p < .01$ level.

** Path main effects significant at $p < .001$ level.

Table 20

Valence Means: Average Rating in Each Tetrad,
for the Composite of Six Actors, Under
the Two Conditions of Valence

Tetrad	V a l e n c e	
	V+	V-
1. Ascendancy	15.65	15.60
2. Responsibility	14.75	14.79
3. *Emotional Stability	16.62	14.93
4. *Sociability	17.74	15.84

*Valence main effects significant at $p < .001$
level.

Table 21

Means of Interactions of Valence and Gordon
Ascendance Scores for Rating Tetrad 1
(Ascendance)

The Interaction is Significant at $p = .01$ Level.

	High Gordon	Low Gordon
Positive Valence	15.77	15.52
Negative Valence	14.50	16.70

Table 22

Means of Interactions of Valence and Gordon
Ascendance Scores for Rating Tetrad 2
(Responsibility)

The Interaction is Significant at $p < .05$ Level.

	High Gordon	Low Gordon
Positive Valence	14.76	14.74
Negative Valence	13.74	15.84

and Gordon score. On the other hand, analysis of Emotional Stability and Sociability reveals (Tables 17 and 18) significant main effects for both path and valence. Inspection of the path means in Table 19 permits the generalization that whatever the valence, path 1 (straight line) is considered strongest in each of the four traits, path 2 (parabola) is next strongest, while path 3 (S-shaped) is weakest. The means for valences are presented in Table 20, while the interaction means are given in Tables 21 and 22. It appears from these results that positive valence (liking for the girl at the end of the path) contributes more to the subjects' impression of emotional stability and sociability in the actors than does negative valence (dislike of the girl).

It would appear then, that the results of this five-factor analysis of variance lend considerable support to Hypotheses 2 and 3, and none at all to Hypotheses 4 and 5. The interaction between valence and Gordon score, is an interesting finding in view of the interaction hypothesis (6). Since these are two isolated interactions out of eight analyses of variance, however, they need rather than offer explanation.

Results with Abstract Path Figures

It will be remembered that the Personality Index refers to a subject's choice of which path he himself would have taken if (a) he were going to a girl he liked, and (b) he were

going to a girl he disliked.

It became apparent to this investigator by hindsight that one could not be sure whether a female subject would have interpreted this question to mean how she, as a girl, would have gone to another girl, or what path she would have taken were she a man. Therefore, no interpretations are given to the results of female subjects on this portion of the experiment. For men, an examination of the distribution of their choices for these two "preferred paths,"--one under like, and one under dislike condition--from among nine possible combinations revealed that it is not a chance affair. A chi square one sample test ($M = 100$) yields a value of 97.649. This value is significant at beyond the .001 level, with 8 df. (Table 23).

On the basis of this finding revealed by the use of the Personality Index, two procedures were carried out in order to further examine these two "preferred" paths for male subjects.

The first of these procedures was a chi square test aimed at determining what if any relationship exists between the personality of a male subject as revealed through the Gordon Personal Profile and his selection of a particular path combination from among nine possibilities. The second was a correlational study of the ratings which men gave actors who walked their own preferred path under conditions

Table 23

Frequency of Preferences of Male Subjects
on Personality Index (N = 100)

	1	2	3	4	5	6	7	8	9
Going to a <u>Disliked</u> Girl									
Going to a <u>Liked</u> Girl									
Number of Ss Preferring Combination	4	32	4	14	29	9	3	3	2

Chi Square = 97.649
df = 8

Significant at p .001 level.

of "liking" a girl.

The results of the chi square test are found in Table 24. From among the total of 100 male subjects, those 30 scoring at the highest and those 30 scoring at the lowest ends of each of the four Gordon scales were selected. The nine possible path combinations were grouped into three essential categories. The first category corresponds to those preferred paths which are the same--whether direct, curved or S-shaped--for both liked and disliked girl conditions. This category contains Indices 1, 5, and 9. The second category is comprised of those selections where the approach to a liked girl is via a more direct path than to a disliked girl, with Indices 2, 7, and 8. The third category consists of those combinations where the approach path to a disliked girl is more direct than that to a liked girl, with Indices 3, 4, and 6. A chi square test for two independent samples yields significant differences when the boys are divided into high Ascendancy and low Ascendancy groups ($\chi^2 = 7.56$, $df = 2$; significant at the .05 level), but the Responsibility, Emotional Stability, and the Sociability scales of the Gordon do not appear to distinguish selection of paths as grouped into these three categories.

Once it had been established that the selection of a "preferred path" by a male subject was not random, it was of some interest to examine in some detail the personality

Table 24

Frequency Comparison of Male Subjects (N = 60), at High and at Low Ends of Gordon Tetrads, with Respect to Preferences on Personality Index for Direct and for Indirect Paths to Liked and to Disliked Girl

Tetrad	Prefer More Direct Path to Liked Girl (Index: 2,5,8)	Prefer Same Path to Both Liked and Disliked Girl (Index: 1,5,9)	Prefer More Direct Path to Disliked Girl (Index: 3,4,6)	Chi Square
<u>Ascendance</u>				
High	11	14	5	7.56*
Low	6	9	15	
<u>Responsibility</u>				
High	13	10	7	2.54
Low	8	9	13	
<u>Emotional Stability</u>				
High	11	13	6	4.43
Low	10	7	13	
<u>Sociability</u>				
High	11	13	6	.98
Low	11	10	9	

*Significant at p .05 level.

df = 2

Two-way chi square for independent samples.

ratings which each subject had assigned the actor who walked this particular path in the motion picture. Specifically, a question was posed as to the relationships among these items: are the intercorrelations among the sixteen ratings of the actor who walked the preferred path of comparable order to the intercorrelations among the sixteen self-ratings?

In Table 25 are the intercorrelations among the sixteen rating scales for all actors who walked the preferred path to a "liked girl." A comparison of this table with Table 4 which is the Self-rating intercorrelations for men, will reveal that these "preferred path" correlations, almost item by item, are higher than those for self-ratings. That is to say, that in general, there are higher item intercorrelations both in (a) internally consistent clusters or tetrads of items related to a trait, such as Ascendancy or Sociability, etc., and also, (b) among all items across the four traits such as Ascendancy, Sociability, etc. Out of 120 item intercorrelations, 83 are significant at or beyond the .01 level in the "preferred path" actor ratings, as against 47 r's significant at this level for the self-rating intercorrelations for male subjects. Similarly for the .05 level, whereas 93 r's are significant in the "preferred path" actor, only 67 are significant for Self-rating intercorrelations.

Table 25

Intercorrelations Among Rating Scale Scores for Actors Who Walked
the Path which Male Subjects (N = 100) Indicated They
Themselves Would Have Taken Toward
a Girl They Liked

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1															
2	.65														
3	.50	.66													
4	.49	.71	.62												
5	.49	.77	.62	.72											
6	.47	.65	.53	.60	.58										
7	.61	.53	.45	.50	.51	.35									
8	.30	.31	.32	.34	.27	.39	.42								
9	.50	.50	.46	.51	.52	.35	.50	.32							
10	.50	.68	.57	.65	.62	.65	.50	.42	.52						
11	.39	.57	.46	.51	.69	.51	.34	.31	.41	.52					
12	.52	.58	.39	.52	.42	.37	.48	.37	.48	.55	.47				
13	.12	.23	.24	.13	.18	.17	.09	-.07	.18	.29	.15	.09			
14	.07	.23	.19	.22	.20	.24	.14	.03	.19	.32	.19	.05	.23		
15	.03	.10	.11	.09	.10	.20	.06	.11	.01	.20	.06	.03	.17	.34	
16	.43	.71	.53	.66	.68	.57	.41	.21	.36	.68	.59	.56	.35	.31	.28

CHAPTER IV

DISCUSSION

In order to control order effects between paths and between actors, as well as between path-actor combinations, the basic design of this experiment was developed as a Greco-Latin square. Figure 1 displays the arrangement of the main variables of path and actor in each of 36 blocks. Because a 6 x 6 Greco-Latin square admits of no exact counterbalancing, the solution to the problem of order effects was arrived at by minimizing the occurrence of either main variable in the same position in any two rows of the design. Inspection of Figure 1 reveals that the order effects are in fact minimal.

The control of order effects was achieved, however, not without some cost to the replications of the experiment. Ideally, the design should have been complete factorial where every subject saw in a different sequence each of the 36 half-minute scenes of the motion picture. The consequence of this arrangement would have been the elimination of the main effects of order (scenes and groups), so that the variance in the Greco-Latin square analysis would have been partitioned only

between subjects, paths and actors, with some residual and error variance. But the complete factorial design would have placed an unrealistically heavy burden on each subject, who was required to make 16 sets of scale discriminations for each scene. Instead of making a total of 96 sets of discriminations as he did in the present design, the subject would have been required to make 576 sets of discriminations. The experimenter felt that such a procedure would exhaust the reliability of the subject early in the experiment, and thus increase the amount of error variance in the results. Therefore the less statistically elegant incomplete blocks design was chosen for this study.

The results of the Greco-Latin square analysis of variance do not admit of any simple interpretation, since one main effect of order (scenes) yields an F-ratio significant at better than the $p .001$ level for each of the four separate analyses of rating tetrad scores. In only one tetrad (Emotional Stability) does the other order effect (Groups) show a significant F-ratio, and this is at the $p .05$ level. While these findings do not negate the value of the significant results for the two main variables, path and actor, in the experiment, they add to the problem of clear-cut interpretation. It was considered likely, at the time the data were being rearranged for separate analyses of (a) actor and subject variables on the one hand, and

(b) path, valence and subject variables, on the other, that the very high F-ratios both for actor and for path were related to interactions with other variables hidden in the Greco-Latin design. Subsequent analyses did not support this hypothesis, except for the interaction of valence and subject's personality.

It may be said, consequently, that the Greco-Latin square analysis of variance lends at least tentative support to the actor hypothesis (1) and the path hypothesis (2) of this study.

The logic underlying the rearrangements (Figures 6 and 7) of the data for the next two analyses of variance designs (Figures 8 and 9) deserves some comment. The basic assumption here is that it is justifiable to regard the Greco-Latin square design as simply a means of counterbalancing for actor order of presentation, on the one hand, and for path order of presentation on the other.

If one were to collect into each of six sets all scores assigned by all subjects to a single actor, no matter what path they saw him walk, then the design becomes by statistical fiction a complete factorial design in which each subject saw all actors. The six separate groups are thereby collapsed into one group which shows a different mean personality tetrad for each actor. The resulting design is the four-factor analysis of variance (Figure 8) of actor

and subject variables.

On the other hand, if one were to collect into each of six sets all scores assigned by all subjects to all actors who walked a single path, no matter who the actors were, then the design becomes, as it did in the previous instance, a complete factorial design in which each subject saw all paths. The six separate groups of the original design are again collapsed into a single group which shows a different mean personality tetrad for each path (where each path was walked by all actors). The design which results is the five-factor analysis of variance (Figure 9) of path, valence and subject variables. It will be observed that this design calls for partitioning the variance associated with each of the paths into a positive and a negative valence.

A further value of these two complete factorial designs is that they permit the assessment of interactions among the main effects, in line with the modern emphasis suggested by Shrauger & Altrocchi (1964); Hastorf (1962); Gross (1961); Koltuv (1962); Secord (1958); Singer & Feshbach (1962); Secord, Backman, and Meredith (1962); Cohen (1956); Jones & Daugherty (1959); Levy (1961, 1963); Gollin (1958); and Benedetti & Hill (1960).

The results of the four-factor analysis of variance Tables 10, 11, 12, and 13) demonstrate, as did the results of the Greco-Latin square analysis, that the main variable of

actor has a significant effect in person perception. Inspection of the actor means in Table 14 reveals that Actors 1 and 4 are rated strongest in all 4 of the traits; Actor 2 is rated weakest, while the others are rated in the middle. It is of interest to examine the physical differences among the actors which may account for the findings. As it turns out, the only characteristic in common which Actors 1 and 4 share is leanness of appearance, with Actor 1 (George) being 6 feet in height, while Actor 4 (Jim) 5'10". Jim was rated slightly higher than George. These two actors stood out, then, in only one characteristic, their slimness, which was enhanced by the fact that they wore trousers which were narrower in the legs than the trousers of the other actors. It is not clear why slimness and perhaps trimness of appearance should lead the viewing subjects to consider these actors more ascendant, more responsible, more emotionally stable, and more sociable than the others. It should be noted again that the viewing subjects' rating of these actors is given without regard to the path which they walked. While this study does not demonstrate conclusively that these two actors each approached what might be called an ideal person, it is possible that their physical attributes led the subjects to consider them to be strong in all four of the positive traits.

The main physical difference between these two actors

and Actor number 2 (Paul) who received the lowest average ratings, would seem to be on this same dimension of slimness-trimness. Paul is taller than Jim, and while he is not fat, he is slightly plump and round-faced. His trousers are not tight-fitting as are those of the other two, and he walks somewhat less erect. It is suggested that the physical characteristic of slimness-trimness may have led the viewers to perceive these persons as very different in their personality attributes. If the assumptions underlying this design are correct, and the experimenter believes they are, one must reject the null hypothesis and consider that, (Hypothesis 1) regardless of path, the personality traits ascribed to an actor walking that path will be a function of which actor he is. This finding is consistent with the literature on the role of the stimulus person in person perception. Specifically, it is in accord with results of studies by Secord, Dukes & Bevan, 1954; Secord & Muthard, 1955; Crider & Lesswell, 1960; Ekman, 1964; Kramer, 1962; Sarbin, 1954; Stone, 1959, 1962.

The results of the five-factor analysis of variance (Tables 15, 16, 17, 18) lend further plausibility to the results of the Greco-Latin square analysis, in that they reveal that the main variable of path has a significant effect in person perception. Inspection of the path means in Table 19 permits the generalization that whether the valence is

positive (+) or negative (-), path 1 (straight line) is considered strongest in each rated trait, path 2 (parabola) is next strongest, and path 3 (S-shaped) is weakest. These findings are consistent with those of Tagiuri's (1960) study, where the hypothetical persons walking these three paths are described by quite different sets of adjectives. Among the positive traits ascribed by his subjects to a hypothetical person on path 1 (straight line) are strong character, determined, steady, even-tempered, courageous, straightforward, direct and frank, makes up mind quickly, and the perfect personality. The negative traits are stuck up, dull (horse with blinders), uninformed or ignorant, hero complex, determined but fool-hardy, and (perhaps) stubborn. 85% of the responses of Tagiuri's subjects indicated strong positive traits for this path, regardless of the valence. It would appear that in general these findings, qualified by the negative traits, are consistent, on the whole, with a person who is ascendant, responsible and emotionally stable. They are not supportive, however, of the finding of high sociability in the present study.

As for path 2 (parabola), Tagiuri's subjects used such positive descriptions as forceful, aggressive, level headed, rounded person, sensible, able to face reality, kind, cautious but also daring, fairly well adjusted, not too confident but more than others, and lofty ideals. Negative

traits ascribed here include timid person who uses indirect methods of approach, varying personality, less stable, indecisive, and cautious. It would seem that the hypothetical person on path 2, then, is described on the whole as less direct than the person on path 1 and perhaps as less strong. 72% of all the responses of Tagiuri's Subjects indicate strong positive traits in relation to this path, regardless of valence.

In Figure 3 the responses of Tagiuri's subjects to the person on the S-shaped path include very few of those terms used in describing the persons on paths 1 or 2. Among the positive traits are: direct, easy-going, relaxed, decisive, sure of self, happy, realistic balanced. Among the negative traits are: rigid, dejected mood, withdrawn personality, irrational fits of elation and despair, sneaky, deceptive, unsure, fairly indecisive, melancholy, not too stable. 39% of all the responses of Tagiuri's Subjects for this path condition, regardless of valence, indicate strong positive traits.

The present design (Figure 9) also permitted partitioning of the variance between positive and negative valence. In two of the four analyses of this design, valence is revealed to be a significant main effect, while it has significant interaction with the subject variable of personality (Gordon "ascendance") in the other two analyses. None of the subject variables shows significant main effects, nor are any other

interactions significant.

The five-factor analysis of variance may be said to provide support for Hypothesis 2, that, regardless of actor, the personality traits ascribed to him will be a function of which path he walks; and for Hypothesis 3, that there will be differences in the assignment of personality traits as a function of the valences (like or dislike of the goal) of the path. The results of these four analyses provide no support for Hypotheses 4 and 5 concerning perceiver (subject) variables; and little or doubtful support to an interaction hypothesis.

The findings on the importance of movement path in person perception here are consistent with results of studies by Tagiuri (1960); Heider and Simmel (1944); Heider (1967) and Michotte (1954). It is interesting to observe that, while these authors studied abstract paths taken by hypothetical persons, their findings are confirmed by the present study of concrete movement paths of real persons shown walking in a motion picture. Perhaps Tagiuri's (1960) assumption is warranted, that "inferences from paths to personal characteristics . . . represent the essence of the unique functional relationship between the person and his field." p. 194.

It is curious to note that valence is a significant main effect with positive valence showing a larger mean than negative valence in both the analysis of the emotional stability tetrad and the analysis of the sociability tetrad, but not

in the other two analyses. Table 20 shows the means of the traits for each of the valences. Could it be that like or dislike (positive or negative affect) for another person towards whom one walks is relevant mainly for the dimensions of emotional stability and sociability, and little or not at all relevant for the dimensions of ascendance and responsibility? The results suggest that this interpretation is plausible, but they do not demonstrate it conclusively. Some other statistical method such as, perhaps, factor analysis, is required for demonstrating relationships between path and ascribed personality traits.

The finding of significant main effects of valence in two of the analyses is in line with the role of positive and negative affect in the studies of person perception reported by Heider (1967); Tagiuri (1960); and Secord and Berscheid (1963). The finding of a significant interaction between Gordon ascendance and valence suggests that further investigation of personality effects may be fruitful. Tables 21 and 22 reveal that high Gordon scorers (ascendant individuals) tend to assign high scores both in ascendancy and in responsibility to actors walking toward a liked (positive) goal, while low Gordon scorers (less ascendant individuals) assign these high scores to actors walking towards a disliked (negative) goal. Observation of these tables also reveals that the main source of the interaction is probably between the Gordon scores and the negative valence, since it is here, rather than in the

positive valence that large differences occur between high and low Gordon scorers.

That the subjects were probably not consciously using path cues in arriving at personality ratings of actors is suggested by a qualitative examination of their responses to the question, "How do you judge people?" Even after the movement path variable was bared for the subjects, verbally as well as schematically, it was interesting to note that in the following page on the subject's scoring booklet not one single person out of a total of 227 mentioned the dimension of movement path as playing a role in their personality judgments. On the other hand, an overview examination of the "spontaneous" descriptions of people in relation to the six paths presented as line drawings, indeed revealed the effects of having been previously exposed to a particular set of sixteen bipolar adjectives seven times. These "spontaneous descriptions" almost invariably contained the very same adjectives as were provided in the experiment. The "social psychology of the psychological experiment" literature would lead one to expect prior experience to operate in the same way with respect both to verbal descriptions and to the use of movement as a criterion in judging people. This is not the case.

This would seem to indicate, in support of Tagiuri's 1960 speculation that the "movement" component of personality judgment is perhaps indeed an unconscious one and is not spon-

taneously, or even with experimental prodding, verbalized even after it is made explicit for the judge. Since the statistical results of this experiment suggest that the path cue is indeed operating as a factor in the personality judgments when it is presented as part of an integrated stimulus complex, Tagiuri's assumption regarding the unavailability of this variable to conscious awareness is perhaps justified. This is an interesting result in so far as movement is a truly and grossly overt aspect of behavior, as overt as the physical person himself as a stimulus.

The results concerning the stimulus variables of this study--path, valence, and actor--suggest that each of these factors plays a statistically significant role in person perception. However, this is not to say that each of these main effects, taken singly, is responsible for the ensuing personality impression. It is suggested that the very simultaneity and concomitance of these main variables is responsible for the resulting impression. This study has merely attempted to study a very narrow and controlled aspect of real life--persons walking three distinct paths when these paths are ascribed some emotional value--i.e., liked or disliked girl as the path goal. What is apparent is that both in real life and in so standard and as simple a context as these films, person perception does not depend simply on one single stimulus variable presented at a time in isolation.

The independent variables that are strictly under the control of the experimenter are necessarily confined to the laboratory. This control is best achieved when the stimuli are presented in isolation, and are hypothetical or abstracted stimulus cues. However, if interest is directed to the problem of person perception as it occurs outside the laboratory, then of necessity one must study the simultaneously interacting stimulus cues, and attempt to resolve the confounding statistically. The very interactions among the main variables manipulated in this experiment's design are what this experiment attempted to show. While the effects of the main variables in this study are sizable, the interactions among them must also be taken into account if one wishes to make statements which describe person perception as it occurs naturally.

While the results of the eight separate analyses of variance (two analyses for each of the rating tetrads) did not bear out the expectations of Hypothesis 4 on the role of the viewer's personality in his perception of other persons, some indirect support is provided for this hypothesis by examining other data in the study. Specifically, the path preferences on the Personality Index show interesting relationships with personality characteristics of subjects as measured on the Gordon Personal Profile.

Here, significant differences in person perception

that are associated with perceiver personality traits have been shown by chi square tests of path preferences. The Ascendancy trait on the Gordon Scale distinguishes path preferences better than the other traits. It appears that a high or a low scorer on this trait, as far as this sample of young men are concerned, will take one path to a liked girl and a different path to a disliked girl.

Also, more high Ascendant boys than low Ascendant boys will use the same path in both emotional instances. Further, more high Ascendant boys than low Ascendant boys will prefer a more direct path to a liked girl than to a disliked girl. Conversely, more low Ascendant boys than high Ascendant boys will prefer a more direct path to a disliked girl than to a liked girl. While it is difficult to interpret the meanings of these specific findings, two things are suggested by the statistical importance of this non-chance choice. One is that, in the American society, the dimensions of independence, dominance, self-confidence, decision-making, leadership are foremost in the scale of values as well as a most vocalized concern of males. It is not surprising then, to find the most differentiating results on such a dimension which is relevant to the group and relevant to the individual. The other is that the separation of interpersonal behavior on the basis of positive and negative affect is perhaps a most fundamental criterion of classification of others.

Another finding of this study is that the Personality Index provides data which might be construed as supporting the "implicit personality theory" notion of previously mentioned writers, and especially as it is delineated in the Koltuv monograph (1962). Here reference is to the present finding that the "preferred-path" actor item intercorrelations were consistently higher than the Self-rating item intercorrelations. This appears to indicate that evaluation of oneself is less distinguishable, less well-defined and less-cohesive than an evaluation of another person. It will be remembered that the design of this experiment made sure that all of the actors presented in the films were unfamiliar persons for the viewing subjects. If one equates Koltuv's "familiar person" with "oneself," and her "unfamiliar person" with this experiment's clearly unfamiliar "actor" for the subject, then the results would appear to suggest a parallel to Koltuv's experimental findings of higher intertrait correlations for less-familiar others. This implies a reliance on a stereotypical "implicit personality theory" in the subject's judgments, and lower intertrait correlations in the personality ratings of familiar people regarding whom one happens to possess more information.

While the subjects clearly made use of the rating scale language in their "spontaneous" verbal descriptions of the hypothetical persons who would walk the paths indicated

in the line drawings, it does not follow that these words were simply borrowed for the occasion. It will be recalled that the adjectives in the rating scales were chosen on the basis of a compromise between the totally experimenter determined categories of judgment and complete free-response. Because we got our dimensions from the free-response data of Tagiuri's subjects in response to the same variable--namely movement path--and because it is not unreasonable to assume that Tagiuri's subjects were comparable, in terms of experience, to the subjects of this study, the verbal categories may well be common between the scales and the subjects "spontaneous language." While this is an undemonstrated assumption, it furnishes a caution to the interpretation of the subjects' responses as being simply parroted from the rating scales.

Suggestions for Future Research

1. Because this study was based on an incomplete blocks Greco-Latin-square design, it was not possible in the subsequent rearrangements of blocks into complete factorial designs, to examine together the possibly interacting stimulus variables of path, valence and actor. It is to be recommended, therefore, that a smaller set of rating scales be devised so that the subject's task in a complete 6 x 6 factorial design not be overwhelming. If the interest in interactions is justified on the basis of the literature, and if

order effects among a set of person-perception stimuli can be regarded as negligible, then it is recommended that the Greco-Latin square design be avoided in any future studies of person-perception hypotheses investigated here. It is well known that the Greco-Latin design precludes any analysis of interactions, unless one splits the double squares and rearranges the data as was done here.

2. It is further recommended that a study be carried out using the basic path-actor-valence methodology of this study (revised as suggested above) but varying the sex of the-actor as well as that of the goal person. Thus, a boy would walk to (a) a girl, and to (b) a boy; a girl would walk to (a) a girl, and to (b) a boy. The interest here would be to see if the same act, when performed in different sex dyadic relationships, would be perceived the same way.

3. The classes of stimulus person deserve some attention in future research. Difference in age, race, nationality, socio-economic class, occupation, and role relations, between actors and goal persons might well reveal variables which modify the role of path in person perception.

4. The same variables as above, but in the viewing subjects rather than in the actors, might reveal a more important role of subject variables in person perception.

5. The context of the film also could be varied in future studies, so that the action would appear in some scenes

to be in personally relevant arenas of life, in others in personally irrelevant arenas. Likewise, the context in which the film is shown could be varied--e.g., under classroom conditions, in a movie theater, in a factory conference room, at a cocktail party; or just before or just after some significant personal event for the viewer, such as an examination, a football game, or a vacation. If the experimenter would involve the subject either through personally relevant filmed contexts, or through personally relevant showing contexts, it is probable that subject variables would be demonstrated as significant main effects in person perception.

6. Finally, since movement path appears in this study to be a significant factor in person perception, it is recommended that a study of other types of human movement be carried out. Since the personalities of the actors were viewed differently as they walked different paths, it is to be expected that the same person would be perceived differently while performing different actions--e.g., when he is riding a bicycle as compared to when he is mowing the lawn.

7. Any study which employs groups of subjects or sets of actors other than college students should take care not simply to use the rating scales developed for this present study. The meaningfulness and personal relevance of the rating categories to the raters must be ensured by sampling the verbal descriptions which the class of viewing

subjects spontaneously applies to the stimuli. While the rating scales for the present study were developed from sets of spontaneous verbal descriptions given by the Harvard sample of the population of American college students, it is recommended that future studies using other populations develop scaling categories from lists of adjectives used by these populations.

In summary, there are virtually unlimited possibilities for further research on the problem of person perception. The present study supports recommendations for design modifications which may permit more detailed analysis of the roles of perceiver variables, stimulus person variables, and context variables, as these interact to produce an impression of the personality of another person.

CHAPTER V

SUMMARY

This study takes as its starting point Tagiuri's (1960) investigation of the influence of movement paths on the formation of personality impressions. While Tagiuri studied movement paths in the abstract and in relation to hypothetical moving persons, this study attempts to verify the role of paths as stimulus cues in the perception of real persons. Furthermore, the present study examines the process of person perception as it depends upon variables residing in the perceiver, the stimulus person, and the judgmental context.

Specifically, the conceptual hypotheses investigated in this study are:

1. Regardless of path, the personality traits ascribed to an actor walking that path will be a function of which actor he is.
2. Regardless of actor, the personality traits ascribed to him will be a function of the path he walks.
3. For both of the above hypotheses, there will be differences in the assignment of personality traits as a

function of the valences (like or dislike of the goal) of the path.

4. There will be differences in trait assignment, as outlined in the above three hypotheses, between male and female perceivers.

5. Regardless of the identity of actor, the type of path, or the sex of the perceiver, a subject's "personality" as assessed through an objective test will be related to his over-all trait assignment to the actors.

6. There will be significant interactions between the stimulus variables of path, actor, goal-valence, and the perceiver variables of sex and personality as revealed through an objective test.

Subjects (75 male and 105 female students enrolled in Psychology 1 at the University of Oklahoma) were shown a movie consisting of a series of six short campus scenes, in each of which a boy walked by one of three "paths" to meet a girl. In each of the six scenes, there was (1) a different pair of actors, and (2) a different path-valence condition. Each path (which was one of three selected from Tagiuri's study) was presented twice: once under a valence condition where the Ss understood the boy liked the girl; once where the Ss understood the boy disliked the girl. The Subjects were divided into six groups, with 30 Ss in each group. Each group saw a different order of scenes presented, as well as

a different pair of actors for each of the path-valence conditions. While all of the subjects saw all six pairs of actors and all six path-valence combinations, they did not all see all possible combinations of actors, paths, and valences. The experimental design is that of an incomplete blocks Greco-Latin square with counterbalancing of the six path-valence conditions on the one square, and counterbalancing of the six actor-pairs on the superimposed square.

Using a specially devised set of rating scales based on items from Tagiuri's subjects' spontaneous descriptions to the abstractly presented paths of this study, subjects rated the main actor in each scene in terms of personality characteristics underlying tetrads of ascendance, responsibility, emotional stability and sociability. Inter-item correlations between the sixteen scales indicated a high relationship between the items belonging to each tetrad. The subjects also completed a path-preference questionnaire or "Personality Index," as well as a personal-sociological questionnaire.

Analysis of variance of the original Greco-Latin square revealed significant main effects of path, actor and scene, in four separate analyses of variance (one for each rating tetrad). Two further experimental designs were then constructed from the original data, one of these to analyze actor main effects together with subject main effects for

sex and personality (as measured by the Ascendance scale of the Gordon Personal Profile); the other, to analyze path and valence main effects, in association with main effects for sex and personality of the subjects. The first of these, a four-factor integrated analysis of variance, revealed significant main effects for actor, in four separate analyses, one for each tetrad, and thus provided confirmation of Hypothesis 1 (actors) (similar to the results of the Greco-Latin square analysis). The second, a five-factor analysis, revealed in four separate analyses significant main effects for path (in agreement with the Greco-Latin analysis), and significant main effects of valence. These three sets of analysis of variance--twelve analyses in all--provide support for the first three hypotheses (concerning actor, path and valence), but offer little support to the last three (concerning subject variables of sex and personality, and the interaction of stimulus variables and subject variables).

A chi-square test of differences in personality of subjects in relation to path-preferences on the Personality Index reveals significant relationships in support of Hypothesis 5 (Personality).

It may be said, in conclusion that this study has confirmed the claims of the literature that the characteristics of stimulus persons (actors), their action (movement path) and the affective connotation of their action (valence)

all contribute to the total impression they make as persons. This study has also generated certain methodological and substantive recommendations which should be of value in future studies.

REFERENCES

REFERENCES

- Adonno, T. W., Frenkel-Brunswik, Else, Levinson, D. J.;1 & Sanford, R. N. The authoritarian personality. New York: Harper & Row, 1950.
- Altrocchi, J. Dominance as a factor in interpersonal choice and perception. J. abnorm. soc. Psychol., 1959, 59, 303-308.
- Altrocchi, J. Interpersonal perceptions of repressors and sensitizers and component analysis of assumed similarity scores. J. abnorm. soc. Psychol., 1961, 62, 528-534.
- Altrocchi, J., Shrauger, S., & McLeod, Mary A. Attribution of hostility to self and others by expressors, sensitizers and repressors. J. clin. Psychol., 1964, 20, 223.
- Anderson, N. H., & Barrios, A. A. Primacy effects in personality impression formation. J. abnorm. soc. Psychol., 1961, 63, 346-350.
- Asch, S. E. Forming impressions of personality. J. abnorm. soc. Psychol., 1946, 41, 258-290.
- Asch, S. E. Social psychology. Englewood Cliffs, N. J.: Prentice-Hall, 1952.
- Backman, C. W., & Secord, P. F. The effect of perceived liking on interpersonal attraction. Hum. Relat., 1959, 12, 379-384.
- Beach, L., & Wertheimer, M. A free response approach to the study of person cognition. J. abnorm. soc. Psychol., 1961, 62, 367-374.
- Beilin, H. Impression formation under varied set and stimulus--traits conditions. J. soc. Psychol., 1963, 60, 39-55.
- Berkowitz, L. Anti-Semitism and the displacement of aggression. J. abnorm. soc. Psychol., 1959, 59, 182-187.

- Bieri, J. Analyzing stimulus information in social judgements. In S. Messick & J. Ross (Eds.), Measurement in personality and cognition. New York: Wiley, 1962.
- Bieri, J. Complexity-simplicity as a personality variable in cognitive and preferential behavior. In D. W. Fiske & S. R. Maddi (Eds.), Functions of varied experience. Homewood, Ill.: Dorsey Press, 1961. Pp. 355-379.
- Bramel, D. A. A dissonance theory approach to defensive projection. J. abnorm. soc. Psychol., 1962, 64, 121-129.
- Bruner, J. S., Shapiro, D., & Tagiuri, R. In R. Tagiuri & L. Petrullo (Eds.), Person perception and interpersonal behavior. Stanford, Calif.: Stanford University Press, 1958. Pp. 277-288.
- Bruner, J. S., & Tagiuri, R. The perception of people. In G. Lindzey (Ed.), Handbook of social psychology. Vol. 2, Cambridge, Mass.: Addison-Wesley, 1954. Pp. 601-633.
- Campbell, J. D., & Radke-Yarrow, Marian. Interpersonal perception and behavior in children. Amer. Psychologist, 1956, 11, 416. (Abstract)
- Campbell, J. D., & Yarrow, Marian R. Perceptual and behavioral correlates of social effectiveness. Sociometry, 1961, 24, 1-20.
- Chowdhry, K., & Newcomb, T. M. The relative abilities of leaders and non-leaders to estimate opinions of their own group. J. abnorm. soc. Psychol., 1952, 47, 51-57.
- Cohen, A. R. Experimental effects of ego-defense preference on interpersonal relations. J. abnorm. soc. Psychol., 1956, 52, 19-27.
- Crider, C. C., & Lasswell, T. E. The ability of listeners to estimate the social class of speakers by listening to their voices. Paper read at Pacif. Sociol. Soc., San Francisco, April, 1960.
- Crockett, W. H., & Meidinger, T. Authoritarianism and interpersonal perception. J. abnorm. soc. Psychol., 1956, 53, 378-380.
- Cronbach, L. J. Processes affecting scores on "understanding others" and "assumed similarity." Psychol. Bull., 1955, 52, 117-193.

- Cronbach, L. J. Proposals leading to analytic treatment of social perception scores. In R. Tagiuri & L. Petrullo (Eds.), Person perception and interpersonal behavior. Stanford: Stanford University Press, 1958. Pp. 353-380.
- Cronbach, L. J., & Gleser, Goldine C. Assessing similarity between profiles. Psychol. Bull., 1953, 50, 456-473.
- Dymond, Rosalind F. A scale for the measurement of empathic ability. J. consult. Psychol., 1949, 13, 127-133.
- Dymond, Rosalind F., Hughes, Anne S., & Raabe, Virginia L. Measurable changes in empathy with age. J. consult. Psychol., 1952, 16, 202-206.
- Edwards, A. L. Social desirability and the description of others. J. abnorm. soc. Psychol., 1959, 59, 434-436.
- Efron, D., & Foley, J. P. Gestural behavior and the social setting. In T. M. Newcomb & E. L. Hartley (Eds.), Readings in social psychology. New York: Holt, Rinehart and Winston, 1947. Pp. 33-39.
- Ekman, P. Body position, facial expression, and verbal behavior during interviews. J. abnorm. soc. Psychol., 1964, 68, 295-301.
- Eriksen, C. W. Perception and personality. In J. Wepman & R. Heine (Eds.), Concepts of personality. Chicago, Ill.: Aldine, 1963. Pp. 31-62.
- Feshbach, S., Singer, R. D., & Feshbach, Norma. Effects of anger arousal and similarity upon the attribution of hostility to pictorial stimuli. J. consult. Psychol., 1963, 27, 248-252.
- Fiedler, F. E., Blaisdell, F. J., & Warrington, W. G. Unconscious attitudes as correlates of sociometric choice in a social group. J. abnorm. soc. Psychol., 1952, 47, 790-796.
- Fisher, R. A., & Yates, F. Statistical tables for biological, agricultural, and medical research. (4th ed.) New York: Hafner, 1953.
- Gage, N. L., & Cronbach, L. J. Conceptual and methodological problems in interpersonal perception. Psychol. Rev., 1955, 62, 411-422.

- Gardner, R. W., & Schoen, R. A. Differentiation and abstraction in concept formation. Psychol. Monogr., 1962, 76, No. 41 (Whole No. 560).
- Gates, G. S. An experimental study of the growth of social perception. J. educ. Psychol., 1923, 14, 449-462.
- Gollin, E. S. Organizational characteristics of social judgement: A developmental investigation. J. Pers., 1958, 26, 139-154.
- Gollin, E. S., & Rosenberg, S. Concept formation and impressions of personality. J. abnorm. soc. Psychol., 1956, 52, 39-42.
- Gordon, L. V. Gordon personal profile. New York: Harcourt, Brace & World, 1963.
- Gross, Cecily F. Intrajudge consistency in ratings of heterogeneous persons. J. abnorm. soc. Psychol., 1961, 62, 605-610.
- Haire, M., & Grunes, Willa F. Perceptual defenses: Processes protecting an organized perception of another personality. Hum. Relat., 1950, 3, 403-412.
- Harvey, O. J., Hunt, D. E., & Schroder, H. M. Conceptual systems and personality organization. New York: John Wiley & Sons, 1961.
- Hastorf, A. H. The perception and evaluation of behavior change. Paper presented at Western Psychol. Ass., Portland, Oregon, April, 1964.
- Hastorf, A. H., Richardson, S. A., & Dornbusch, S. M. The problem of relevance in the study of person perception. In R. Tagiuri & L. Petrullo (Eds.), Person perception and interpersonal behavior. Stanford: Stanford University Press, 1958. Pp. 54-62.
- Heider, F. The psychology of interpersonal relations. New York: John Wiley & Sons, 1958. (a)
- Heider, F. On social cognition. Amer. Psychologist, 1967, 22, 25-31.
- Heider, F. Social perception and phenomenal causality. In R. Tagiuri & L. Petrullo (Eds.), Person perception and interpersonal behavior. Stanford, Calif.: Stanford University Press, 1958. Pp. 1-21. (b)

- Heider, F., & Simmel, Marianne. An experimental study of apparent behavior. Amer. J. Psychol., 1944, 57, 243-259.
- Holzman, P. S., & Gardner, R. W. Leveling and repression. J. abnorm. soc. Psychol., 1959, 59, 151-155.
- Horwitz, M. The veridicality of liking and disliking. In R. Tagiuri & L. Petrullo (Eds.), Person perception and interpersonal behavior. Stanford, Calif.: Stanford University Press, 1958. Pp. 191-209.
- Icheiser, G. Misunderstanding in human relations. Amer. J. Sociol., 1949, 55, 1-70.
- Jackson, D. N., & Messick, S. Individual differences in social perception. Brit. J. soc. clin. Psychol., 1963, 2, 1-10.
- Jones, E. E. Authoritarianism as a determinant of first impression formation. J. Pers., 1954, 23, 107-127.
- Jones, E. E., & deCharms, R. Changes in social perceptions as a function of the personal relevance of behavior. Sociometry, 1957, 20, 75-85.
- Jones, E. E., & de Charms, R. The organizing function of interaction roles in person perception. J. abnorm. soc. Psychol., 1958, 57, 155-164.
- Kastenbaum, Alice. An experimental study of the formation of impressions of personality. Unpublished manuscript, Graduate Faculty of Political and Social Science, New School for Social Research, 1951.
- Kelley, H. H. The warm-cold variable in first impressions of persons. J. Pers., 1950, 18, 431-439.
- Kelly, G. A. The psychology of personal constructs. New York: Norton, 1955. 2 vols.
- Kogan, N., & Shelton, F. C. Differential cue value of age and occupation in impression formation. Psychol. Rep., 1960, 7, 203-216.
- Kohn, A. E., & Fiedler, F. E. Age and sex differences in the perception of persons. Sociometry, 1961, 24, 157-164.
- Koltuv, Barbara B. Some characteristics of intrajudge trait intercorrelations. Psychol. Monogr., 1962, 76, No. 33 (Whole No. 552).

- Kramer, E. Judgement of personal characteristics and emotions from nonverbal properties of speech. Psychol. Bull. 1962, 60, 408-420.
- Kretschmer, E. Physique and character. New York: Harcourt, Brace & Co., 1925.
- Leary, T. Interpersonal diagnosis of personality. New York: Ronald Press, 1957.
- Levy, L. H., & Dugan, R. A constant error approach to the study of dimensions of social perception. J. abnorm. soc. Psychol., 1960, 61, 21-24.
- Lipetz, M. E. The effects of information on the assessment of attitudes by authoritarians and non-authoritarians. J. abnorm. soc. Psychol., 1960, 60, 95-99.
- Luchins, A. S. Experimental attempts to minimize the impact of first impressions. In C. I. Hovland (Ed.), The order of presentation in persuasion. New Haven, Conn.: Yale University Press, 1957. Pp. 62-75 (a)
- Luchins, A. S. Forming impressions of personality: A critique. J. abnorm. soc. Psychol., 1948, 43, 318-325.
- Luchins, A. S. Primacy-recency in impression formation. In C. I. Hovland (Ed.), The order of presentation in persuasion. New Haven, Conn.: Yale University Press, 1957. Pp. 33-61. (b)
- Matkem, A. J. Impression formation as a function of adjustment. Psychol. Monogr., 1963, 77, No. 5 (Whole No. 568).
- Mayo, Clara W., & Crockett, W. H. Cognitive complexity and primacy-recency effects in impression formation. J. abnorm. soc. Psychol., 1964, 68, 335-338.
- Mensh, I. M., & Wishner, J. Asch on "Forming impressions of personality": Further evidence. J. Pers., 1947, 16, 188-191.
- Michotte, A. Causality and activity. In D. C. Beardslee & M. Wertheimer (Eds.), Readings in perception. Princeton, N. J.: D. Van Nostrand, 1958. Pp. 382-389.

- Michotte, A. La perception de la causalité. (2nd ed.) Louvain, Belgium: Editions "Erasme," Publications Universitaires de Louvain, 1954. (English translation: T. R. Miles & Elaine Miles. The perception of causality. Great Britain: Hazell Watson & Viney, 1963.)
- Newcomb, T. M. The acquaintance process. New York: Holt, Rinehart and Winston, 1961.
- Orne, M. T. On the social psychology of the psychological experiment: with particular reference to demand characteristics and their implications. Amer. Psychologist, 1962, 17, 776-783.
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. The measurement of meaning. Urbana: University of Illinois Press, 1957.
- Ostrander, E. H., & Steger, J. Impression formation and sequence of information presentation. Paper read at Amer. Psychol. Ass., Chicago, 1960.
- Pastore, N. Attributed characteristics of liked and disliked persons. J. soc. Psychol., 1960, 52, 157-163. (a)
- Pastore, N. A note on changing toward liked and disliked persons. J. soc. Psychol., 1960, 52, 173-175. (b)
- Pear, T. H. Personality, appearance and speech. London: George Allen & Unwin, 1957.
- Pear, T. H. Voice and personality. London: Chapman & Hall, 1931.
- Pepitone, A. Attributions of causality, social attitudes, and cognitive matching processes. In R. Tagiuri & L. Petrullo (Eds.), Person perception and interpersonal behavior. Stanford, Calif.: Stanford University Press, 1958. Pp. 258-276.
- Pepitone, A., & Hayden, R. Some evidence for conflict resolution in impression formation. J. abnorm. soc. Psychol., 1955, 51, 302-307.
- Rabin, H. M. Perception of others by adjusted and maladjusted subjects as reflected in measures of perceptual space. J. soc. Psychol., 1962, 56, 149-158.

- Rabinowitz, W. A note on the social perceptions of authoritarians and nonauthoritarians. J. abnorm. soc. Psychol., 1956, 53, 384-386.
- Rommetveit, R. Selectivity, intuition and halo effects in social perception. Oslo, Norway: Oslo University Press, 1960.
- Sarbin, T. R. Role theory. In G. Lindzey (Ed.), Handbook of social psychology. Vol. 1. Cambridge, Mass.: Addison-Wesley, 1954. Pp. 223-258.
- Scodel, A., & Friedman, Maria L. Additional observations on the social perception of authoritarians and nonauthoritarians. J. abnorm. soc. Psychol., 1956, 52, 92-95.
- Scodel, A., & Mussen, P. Social perceptions of authoritarians and nonauthoritarians. J. abnorm. soc. Psychol., 1953, 48, 181-184.
- Secord, P. F. Perception of similarity between self and alter. Paper presented at Western Psychol. Ass., Portland, Oregon, April, 1964.
- Secord, P. F. The role of facial features in interpersonal perception. In R. Tagiuri & L. Petrullo (Eds.), Person perception and interpersonal behavior. Stanford, Calif.: Stanford University Press, 1958, Stanford University Press, 1958. Pp. 300-315.
- Secord, P. F. Stereotyping and favorableness in the perception of Negro faces. J. abnorm. soc. Psychol., 1959, 59, 309-315.
- Secord, P. F., & Backman, C. W. Interpersonal congruency, perceived similarity, and friendship. Sociometry, 1964, 27, 115-127.
- Secord, P. F., & Backman, C. W. Social psychology. New York: McGraw-Hill, 1964. Pp. 13-92.
- Secord, P. F., Backman, C. W., & Eachus, H. T. Effects of imbalance in the self concept on the perception of persons. J. abnorm. soc. Psychol., 1964, 68, 442-446.
- Secord, P. F., & Berscheid, Ellen S. Stereotyping and the generality of implicit personality theory. J. Pers., 1963, 31, 65-78.

- Secord, P. F., Bevan, W., & Katz, Brenda. The negro stereotype and perceptual accentuation. J. abnorm. soc. Psychol., 1956, 53, 78-83.
- Secord, P. F., Dukes, W. F., & Bevan, W. Personalities in faces: I. An experiment in social perceiving. Genet. Psychol. Monogr., 1954, 49, 231-279.
- Secord, P. F., & Muthard, J. E. Personalities in faces: IV. A descriptive analysis of the perception of women's faces and the identification of some physiognomic determinants. J. Psychol., 1955, 39, 269-278.
- Secord, P. F., & Stritch, T. M., & Johnson, Linda. The role of metaphorical generalization and congruency in the perception of facial characteristics. J. soc. Psychol., 1960, 52, 329-337.
- Sheldon, W. H., Stevens, S. S., & Tucker, W. B. The varieties of human physique: An introduction to constitutional psychology. New York: Harper & Row, 1940.
- Shor, R. E. Effect of preinformation upon human characteristics attributed to animated geometric figures. J. abnorm. soc. Psychol., 1957, 54, 124-126.
- Shrauger, S., & Altrocchi, J. The personality of the perceiver as a factor in person perception. Psychol. Bull., 1964, 62, 289-308.
- Siegel, S. Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill, 1956.
- Smelser, W. T. Dominance as a factor in achievement and perception in cooperative problem solving interactions. J. abnorm. soc. Psychol., 1961, 62, 535-542.
- Steiner, I. D., & Johnson, H. H. Authoritarianism and "tolerance of trait inconsistency." J. abnorm. soc. Psychol., 1963, 67, 388-391.
- Stone, G. P. Appearance and the self. In A. M. Rose (Ed.), Human Behavior and social processes. Boston: Houghton Mifflin, 1962.
- Strickland, L. H. Surveillance and trust. J. Pers., 1958, 26, 200-215.

- Strickland, L. H., Jones, E. E., & Smith, W. F. Effects of group support on the evaluation of an antagonist. J. abnorm. soc. Psychol., 1960, 61, 73-81.
- Taft, R. The ability to judge people. Psychol. Bull., 1955, 52, 1-23.
- Tagiuri, R. Introduction. In R. Tagiuri & L. Petrullo (Eds.), Person perception and interpersonal behavior. Stanford, Calif.: Stanford University Press, 1958.
- Tagiuri, R. Movement as a cue in person perception. In H. P. David & J. C. Brengelmann (Eds.), Perspectives in personality research. New York: Springer Publishing Co., 1960. Pp. 175-195.
- Tagiuri, R. Social preference and its perception. In R. Tagiuri & L. Petrullo (Eds.), Person perception and interpersonal behavior. Stanford, Calif.: Stanford University Press, 1958. Pp. 316-336.
- Tajfel, H., & Wilkes, A. L. Salience of attributes and commitment to extreme judgements in the perception of people. Brit. J. soc. clin. Psychol., 1964, 3, 40-49.
- Taylor, H. C. Social agreement in personality traits as judged from speech. J. soc. Psychol., 1934, 5, 244-248.
- Thibaut, J. W., & Riecken, H. W. Authoritarianism, status, and the communication of aggression. Hum. Relat., 1955, 8, 95-120.
- Tripodi, T., & Bieri, J. Cognitive complexity as a function of own and provided constructs. Psychol. Rep., 1963, 13, 26.
- Veness, Thelma, & Brierley, Dorothy W. Forming impressions of personality: Two experiments. Brit. J. soc. clin. Psychol., 1963, 2, 11-19.
- Winer, B. J. Statistical principles in experimental design. New York: McGraw-Hill, 1962.
- Wishner, J. Reanalysis of "impressions of personality." Psychol. Rev., 1960, 67, 96.112.
- Wolin, L. R. An analysis of the content of interpersonal perception. Unpublished doctoral dissertation, Cornell University, 1956.

APPENDIX

Booklet No. _____

Reel No. _____

IN THE EXPERIMENT WHICH FOLLOWS YOU ARE TO
REMAIN ENTIRELY ANONYMOUS SO THAT YOU WILL
FEEL FREE IN YOUR JUDGMENTS. DO NOT WRITE
YOUR NAME ANY PLACE ON THIS BOOKLET.

WHAT THE EXPERIMENT IS ABOUT

You are probably all familiar with the "Candid Camera" program of TV. This experiment you are participating in is very similar to and considerably suggested by the Candid Camera show.

Its purpose is to find out something about how people form impressions of the personality of others with whom they are not yet acquainted.

Here is the way our candid camera was used: We selected six coeds--all of about the same age and equally attractive--and requested them to participate in an experiment. Each girl was asked to sit at a predetermined spot on the campus lawn--this was done on different days. She was instructed that she had nothing to do but sit there and wait to meet a boy who would be sent over to her. Once our stooge-girl was seated on the lawn, we walked over to the sidewalk and waited for a boy to come along. We stopped him and pointed out the girl to him. We asked him for his first impressions of her--did he think she was a person he might like. Some boys said "definitely yes," and some said "definitely no." In other words, some boys in their first impressions expressed a like, and some boys a dislike for this girl seated at some short distance whom they did not know.

Whether or not a boy liked a girl, he was asked if he would be willing to meet her anyway. Some absolutely refused; those, naturally, will not be seen in our movie. Others went along with the request.

In the film which is going to be presented to you, you will see six separate shots of a boy meeting a girl. Each boy is different and each girl is different in each scene. Whether a boy expressed a like or a dislike for the girl, that information is indicated on each of your six scoring sheets.

Now, your task is to observe in each scene a boy meeting a girl. By first looking at your scoring sheet before watch-

ing the scene, you will know whether he liked or disliked the girl. After you have watched a scene, you are to fill out a rating scale indicating your first impressions of that boy's personality.

Now, please turn the page and read the specific instructions.

INSTRUCTIONS

Each pair of adjectives in the following pages describes opposite traits of personality. Please place a check mark (X) on the line for each pair which you think is applicable to the persons, i.e. boys, in the brief movie scenes you will see. Place this check mark so as to indicate the amount of that trait. An example will follow.

Do this quickly; don't take too long to make any one rating. What is important is your first impression. Don't hesitate to use the extreme ends of the scales, whenever these seem appropriate.

IMPORTANT: Please place your check mark in the middle of spaces, not on the boundaries.

Here is an example of the way you should do this task:

Let us say that you have been shown a movie in which a particular girl appears. You are asked to give your first impression of what kind of a person she is. To help you state this impression, you are provided with a set of personality traits arranged as follows:

GORGEOUS	:	:	:	:	:	:	:	:	UGLY
UNSUCCESSFUL	:	:	:	:	:	:	:	:	SUCCESSFUL
FAIR	:	:	:	:	:	:	:	:	UNFAIR

If you feel that this girl is very gorgeous, you should place your check mark as follows:

GORGEOUS	:	X	:	:	:	:	:	:	UGLY

If you feel that she is moderately successful, you should place your check mark as follows:

UNSUCCESSFUL	:	:	:	:	:	X	:	:	SUCCESSFUL

And if you feel that the fair-unfair pair of traits is not applicable to this person, you leave this scale unmarked.

A note on the organization of Rating --
Scales in the Booklet

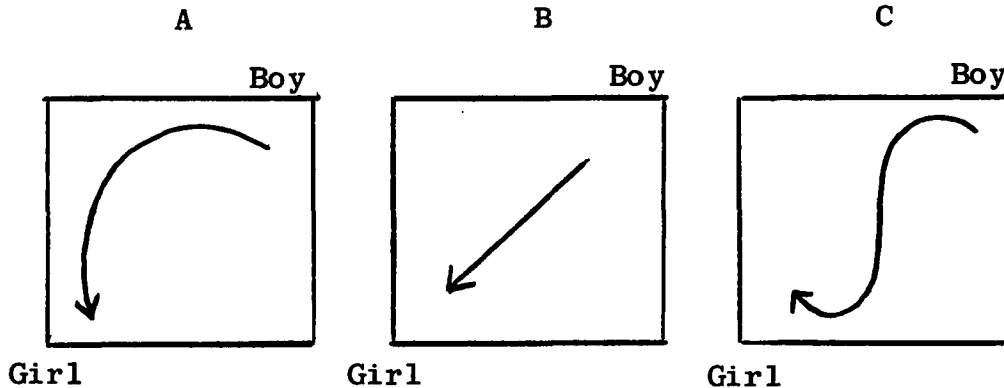
Following the instructions in the booklet were six pages, on each of which was a rating scale for an actor indicating the scene number of the motion picture, and the valence ("The boy likes this girl", or "The boy dislikes this girl," whichever was appropriate for the scene.) Inserted in the booklet after the rating scales for the actors, was the Gordon Personal Profile (IBM Scoring form), followed by the same rating scale to be used in self-description by the subject.

A sample rating scale is presented on the next page.

How would YOU have done it?

After we had gathered a large number of these candid camera shots, we became aware that some boys were walking toward the girls along a number of rather identifiable paths.

We selected three such paths for the film which you have just viewed. These can be roughly described by the following drawings:



If you had been asked to go to a girl you disliked, which path would come closest to the one you would probably have taken?

A _____ B _____ C _____

If you had been asked to go to a girl you liked, which path would come closest to the one you would probably have taken?

A _____ B _____ C _____

PERSONAL QUESTIONNAIRE

- 1.** NO NAMES, PLEASE
- 2.** Sex: Male () Female ()
- 3.** Date of birth: _____ _____ _____
 Month Day Year
- 4.** Marital status: Single (); Married (); Divorced (); Widowed ().
- 5.** Educational status: High school ____ years; College ____ years; Graduate school ____ years.
- 6.** Occupation or future occupation to which you aspire:
- 7.** Religion: _____
- 8.** Frequency of church attendance:

Never (); Not very often (); Fairly often (); Very often ().
- 9.** Place of birth: _____
- 10.** Where did you live most of your life? Farm (); Town (); Suburb (); City (),
- 11.** Father's occupation: _____
- 12.** Father's education: _____
- 13.** Mother's occupation: _____
- 14.** Mother's education: _____
- 15.** What is the main basis on which you evaluate people in general; in other words, how do you size up other people in everyday life?

How would YOU describe--briefly and in your own words--
the personalities of the following boys? (You don't need to
answer in full sentences.)

1. A boy who goes to a girl he likes
this way:
2. A boy who goes to a girl he likes
this way:
3. A boy who goes to a girl he likes
this way:
4. A boy who goes to a girl he dislikes
this way:
5. A boy who goes to a girl he dislikes
this way:
6. A boy who goes to a girl he dislikes
this way:



This is the end of the experiment. Thank you very
much for your time and participation.

PLEASE DO NOT DISCUSS
this experiment with
other students since
many others will be
seeing the same films.