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WARMTH, COMPETENCE, AND IDENTIFICATION

by

Ⓒ YIZHAR EYLON

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

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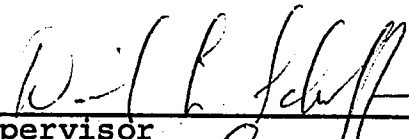
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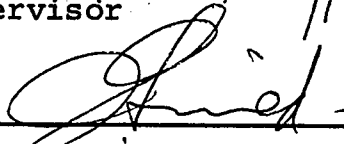
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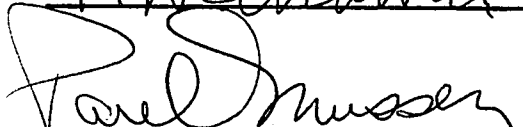requirements for the degree of Doctor of Philosophy.

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TO THE MEMORY OF MY PARENTS

ABSTRACT

Sixty young males enrolled in an introductory course in psychology rated themselves on a series of seven-step, bipolar, adjectival scales. Afterwards they observed a young man perform a simple mechanical task, performed the same task and then rated the young man and themselves again. It was found that when the subjects perceived the young man as personally warm, they projected onto him attributes, which, they believed, characterized them. When the young man was perceived as warm and/or competent in the mechanical task, the subjects viewed themselves as more similar to him than in the absence of these perceptions. The results were interpreted as supporting Kagan's theory of identification.

ACKNOWLEDGMENTS

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INTRODUCTION

Like so many other concepts which have since become household words in social science that of identification was probably first described by Freud and the study of the subject matter properly begins with a review of his writings. The topic occupied a fairly prominent place in his thinking and references to it are scattered in works written over a period of more than forty years.

Freud's treatment of identification may be divided into two parts on a temporal as well as content basis. In his earlier writings (1896, 1897, 1900, 1901, 1905a, 1910, 1913, 1915) he used identification as an explanatory concept. Beginning with his 1915 addition to the Three essays on the theory of sexuality (1905b, p. 198), identification, while still used to explain other psychic events, was itself carefully analyzed by Freud (1917, 1921, 1923, 1933, 1940).

Freud's remarks in the first group of papers indicate that he served as an observer -- he discovered that in certain situations identification is present, generally as a cause of some symptoms or abnormal behavior; upon making this discovery he registered the fact but did not attempt to scrutinize identification itself. In the second group identification became a subject of close examination and analysis.

In the earlier papers Freud dealt with identification in the adult, in the latter ones he probed into the

childhood identifications and, properly speaking, it was only here that Freud's theory of identification was established.[1]

Freud proposed that two processes of major importance operate during the first years of life: identification and object-choice. "If a boy identifies himself with his father, he wants to be like his father; if he makes him the object of his choice, he wants to have him, to possess him. In the first case his ego is altered on the model of his father; in the second case it is not necessary. Identification and object-choice are to a large extent independent of each other ..." (1933, p. 63).

There are two types of identification: the first precedes any object choice, "a direct and immediate identification" (1923, p. 21); the second arises at the resolution stage of the Oedipus complex, following the renunciation of the parent of the opposite sex as the sexual object.[2] The

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[1] Mourning and melancholia (1917), written at about the same time as the aforementioned addition to the Three essays on the theory of sexuality, is the first paper in which Freud analyzed identification at length in terms of psychoanalytic theory. There he differentiated between narcissistic and hysterical identification: "... whereas in the former the object-cathexis is abandoned, in the latter it persists and manifests its influence, though this is usually confined to certain isolated actions and innervations" (1917, p. 250). Freud never returned to discuss this dichotomy but Fenichel (1926) and Sanford (1955) commented on it.

[2] Freud was more explicit in regard to boy's development and the present discussion will follow in his footsteps.

first type of identification arises "before a child has arrived at definite knowledge of the difference between the sexes, the lack of a penis, it does not distinguish in value between its father and its mother" (1923, p. 21). Both parents, then, serve as models and it may be reasonable to assume that the mother is the main model for both sexes because of greater amount of interaction with her.

The primary identification stage is followed by that of sexual object-choice. The boy cathects his mother, wants to get rid of his main competitor -- the father -- and entertains death wishes toward him. The death wishes give rise to strong feelings of fear of castration by the powerful father. As a result of those emotions, the boy renounces the mother as a sexual object and comes to identify with his father. The superego develops and moral precepts are learned through identification with his father. Successful completion of this third stage of development is essential for the inculcation of societal mores and formation of a normal, nonneurotic personality.

However, as Koff (1961) and White (1963) pointed out, there is an internal inconsistency in Freud's theory of identification. He says: "When it is that a person has to give up a sexual object, there quite often ensues an alteration of his ego which can only be described as setting up of the object inside the ego .... It may be that by this

introjection, which is a kind of regression to the mechanism of the oral phase, the ego makes it easier for the object to be given up or renders that process possible. It may be that this identification is the sole condition under which the id can give up its objects. At any rate the process, especially in the early phase of development, it is a very frequent one, and it makes it possible to suppose that the character of the ego is a precipitate of abandoned object-cathexes and that it contains the history of those object-choices" (1923, p. 19). This would mean that because the boy gives up the mother as a cathected object, she should be his main identificatory model in the post-Oedipal stage. Yet Freud is quite explicit elsewhere (1921, 1933) in stating that the boy gives up the mother but identifies with his father.

Although Freud frequently mentioned identification in the adult, he analyzed it at length in two works only: Mourning and melancholia (1917) and Group psychology and the analysis of the ego (1921). In the former identification is described as a process that follows object loss; by way of identification a psychic representation of the lost object is set up within the ego of the identifier. In the latter identification is considered to be the tie that links members of a group. A group with a leader is defined as "a number of individuals who have put one and the same object in the place of their ego ideal and have consequently

identified themselves with one another in their ego" (1921, p. 116).

The following excerpt may be considered Freud's own summary of his views on identification: "First, identification is the original form of emotional tie with an object, secondly in a regressive way it becomes a substitute for a libidinal object-tie, as it were by means of integration of the object into the ego; and thirdly, it may arise with any new perception of a common quality shared with some other person who is not an object of the sexual instinct" (1921, pp. 107-108).

In conclusion it may be said that Freud considered identification to be: (1) an earliest form of emotional tie with another person -- as in primary, pre-Oedipal identification; (2) a mechanism of defense against the id impulses as well as a way of internalization of societal mores -- as in post-Oedipal identification; (3) a vehicle for expression of a repressed wish -- as in hysterical imitation; (4) a compensatory mechanism -- as in depression (melancholia); (5) a bond that holds together members of a group -- as in identification with a leader. In his earlier writings Freud concentrated on identification as a perceptual process, based on perceived similarity between the objects of identification; in his later writings he focused his discussion on

identification as a developmental process.[3] Not only did Freud consider identification from different points of view, his discussion of post-Oedipal identification, which is crucial, according to his theory, for normal personality development, appears to be inconsistent (as pointed out above).

Following Freud's initial contributions, the study of identification continued to attract researchers and the field burgeoned both in terms of quantity of published material and variety of theoretical approaches. Indeed, the literature is so vast that a detailed review would assume Gargantuan proportions. Good summaries of previous work may be found in the papers of Bronfenbrenner (1960), Fuchs (1937), Kagan (1958), Koff (1961), and Mussen (1967). Kohlberg (1963, 1966) reviewed the research on the relationship (1) between identification and moral development and

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[3] Sappenfield pointed out that "Freud used the term iden tification to imply either of two clearly distinguishable processes" (1954, p. 271). One of them has been termed by Sappenfield perceptual identification, the other -- developmental identification. Perceptual identification occurs "whenever two processes, two objects, two symbols, a symbol and an object, etc., are interpreted as having identical value for the satisfaction or frustration of an active motivational pattern ..." (p. 272). Developmental identification, in Sappenfield"s schema, "involves a genuine tendency to become, in major or minor respects, like some other person or group of persons" (p. 293). It is a learning process in which one molds his personality on the example of another person or group of persons. It may be argued, however, that the purpose of developmental identification is to achieve a greater degree of perceptual identification, that is, to increase the subjectively perceived similarity.

(2) between identification and gender identity.

The contributions to the field can be roughly divided into two large groups: (1) The psychoanalytically oriented, mainly concerned with interpretation and refinement of Freud's dicta, analysis of the concept, and case description. Empirical material is rarely brought in, and then primarily to illustrate a theoretical concept rather than in its own right. (2) Those that owe their scientific allegiance to behaviorism and its offshoots, mainly interested in quantification and measurement of identification as well as in the study of its antecedents, concomitants, and consequences. Although this school produced several theoretical papers, the majority of publications are reports of empirical studies in which a fairly large number of subjects was used and the data treated statistically; "armchair theorizing," in general, is frowned upon.

Theories of identification were advanced by both schools. (Many of the psychoanalytic theories, while owing an intellectual debt to Freud, are more than mere exegesis of his work.) Practically all of them assume that early childhood is the critical period of identification and that identifications that occur later in life are modeled after the early ones. Consequently, parents are believed to be the main identificatory figures. Finally, identification is considered to represent some change in the personality of the

identifier; the possibility that the identifier changes his

perception of other people is generally disregarded (some

notable exceptions here are the works of Anna Freud, 1936;

Klein, 1946; Knight, 1940; and Stotland, Zander &

Natsoulas, 1961).

The nonpsychoanalytic theories may be broadly

divided into two groups: (1) those that attempt to restate

the psychoanalytic notions in terms of learning theory;

(2) those that study identification independently of Freud's

contributions.[4]

Works of Kagan (1958), Lazowick (1955), Maccoby

(1959), Mowrer (1950), Rau (1960), Sears (1957), Sears,

Alpert and Rau (1965), and Seward (1954) may be included

in the first group.[5] Among these, Sears (1957) presents

the best developed scheme.

Sears differentiates between identification and

identification behavior. The former is thought of as a

process, the latter is defined as "acting like another

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[4] The usage of the terms "identification," "introjec-
tion," and "projection" in the nonpsychoanalytic theories
as well as in this dissertation does not imply that the
writers share the varied meanings those terms are imbued
with by the post-Freudian psychoanalytic writers.

[5] The best known restatement of psychoanalytic theory in
learning theory terms is Dollard and Miller's book (1950).
Unfortunately, identification is not discussed in it.

person" and considered a product of the former. (Although Sears speaks of "overt actions" as products of identification, he includes motives and attitudes among them.)

Identification is postulated to be a secondary drive for which the goal response is "acting as if one possessed the psychological properties of another person (originally the parent)" (p. 156). The development of identification follows a three-step sequence: "First, the child develops a dependency drive for which the mother's nurturant behavior is the appropriate environmental event. Second, he imitates ... the mother. Third, this imitation provides sufficient gratification so that it becomes habitual and takes on characteristics of a secondary motivational system" (p. 153).

Sears hypothesizes that initially the child imitates the mother because the copied behavior has a secondary reward value: "The reinforcement of identification comes from the self-reward produced by imitation of the parts of mother's behavior that form the reward for the dependency drive ...." Invoking the principle of generalization, he further proposes that "when identification has become a secondary motivational system in its own right, any action that is like that of a parent is a goal response" (p. 156).

The parents' conduct is assumed to be moral, therefore the development of conscience is considered to be a

measure of strength of identification. This, of course, is consistent with Freud's hypothesis that "the installation of the super-ego can be described as a successful instance of identification with the parental agency" (1933, p. 64). Empirical research, however, offers little support of that notion. The pertinent data are presented by Kohlberg (1963) and Sears and his associates (1965). Kohlberg's review of the literature and the Sears group's book lead to the conclusion that there is no relationship between identification and moral development.

A general dissatisfaction with Freudian theory as well as the inconclusive results of research stemming from it gave rise to theories that renounce psychoanalysis as a source of ideas, here termed "academic theories." Stoke (1950) was probably the first to analyze identification in nonpsychoanalytic terms,[6] but failed to attract a following for his ideas. More recently, several contributions were published, which originate in different theoretical traditions but share their indifference to Freud's ideas as a

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[6] Identification is mentioned by nonpsychoanalytic authors before 1950, but generally it is a mere mention (e.g., Allport, 1937; Miller & Dollard, 1941). Willey's paper (1932) is an interesting exception, especially in view of the fact that his distinction between personal and situational identification precedes by almost 30 years Slater's (1961) distinction between personal and positional identification.

common feature. To this academic group belong the works of Bandura (1969), Bandura and Walters (1963), Gewirtz (1969), Gewirtz and Stingle (1968), Kohlberg (1969), Lynn (1959, 1961, 1962, 1964, 1966), and Stotland et al. (1961). The first four authors are steeped in the behavioristic tradition, Kohlberg acknowledges his intellectual debt to Piaget, Lynn is concerned mainly with sex-role identification,while Stotland and his colleagues stress the cognitive aspects of identification.

In terms of impact on the field the volume by Bandura and Walters (1963) seems to represent the most important contribution in this group. Recently Bandura (1969) elaborated their point of view in regard to identification.

The social-learning theory maintains that identification and imitation are synonymous because both refer to "behavioral modifications resulting from exposure to modeling[7] stimuli" (p. 219). Observational learning is considered to be the basic learning process involved in identification, for which reason Bandura and his followers focus their research upon personal characteristics of models and types of situation that evoke observational learning. The

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[7] There appears to be a semantic inconsistency in the writings of social learning school: The word "modeling" is sometimes used to refer to the behavior of the observer, sometimes to behavior of the model; sometimes it describes response characteristics, sometimes those of the stimulus.

occurrence of imitative responses is construed to be an index of observational learning.

It is not clear, however, what the relationship between observational learning and identification is. At one point Bandura says that "identification" and "observational learning" are equivalent terms (p. 219). Elsewhere he says that observational learning is "the basic learning process underlying identification" (p. 220). While this contradiction could perhaps be explained by referring to Bandura's distinction between acquisition and performance, there appears to be another, more serious problem. In the context of discussing the distinction between identification and imitation, Bandura and Walters (1963) suggested that "it is in the interest of clarity, precision, and parsimony to employ the single term imitation, to refer to the occurrence of matching responses" (p. 90). Yet the title of Bandura's 1969 paper is "Social-learning theory of identificatory processes" and throughout the paper he freely employs the condemned term. One may wonder why that which was exorcised in 1963 passed the test of purity in 1969. It would seem that Bandura feels compelled to employ both terms for a good reason: the two are not synonymous. Although occurrence of imitation is frequently interpreted as evidence of identification, there exists non-identificatory imitation as well as nonimitative

identification (see Appendix F).

The foregoing review seems to indicate that none of the three most influential theories in the field offers a fully satisfactory account of identification. The problem is compounded by conceptual confusion and incomparability of terms. Koff (1961), speaking of psychoanalytic literature on identification, pointed out that "each author uses [the term] to mean what he chooses" (p. 362); his conclusion seems to apply to nonpsychoanalytic literature with equal validity.

One reason for that state of affairs may be that different theorists, while searching for an exhaustive definition of the term, base their definitions only on certain aspects of the phenomenon, and since different authors address themselves to different aspects, their definitions differ. Another likely reason is that some make inferences about identification from its outcomes, while others deduce its nature from the study of its antecedents. This leads to the conclusion that an adequate theory of identification must deal with its antecedents and outcomes as well as with its varied manifestations and diverse circumstances under which it appears.

The following paragraphs present a theory of identification that appears to encompass the broad variety of phenomena referred to by that term. Moreover, the theory seems to give adequate coverage to antecedents and outcomes

of identification alike.

Some years ago Kagan (1958) defined identification as an individual's belief that some of the attributes of the model belong to him. He further proposed that "the establishment of an optimally strong identification requires that three conditions be met: (a) the model must be perceived as nurturant to the child; (b) the model must be perceived as being in command of desired goals, especially power, love from others, and task competence in areas the child regards as important; and (c) the child must perceive -- before the identification belief begins its growth -- some objective bases of similarity in external attributes or psychological properties between himself and the model" (1964, p. 147). In regard to consequences of identification, Kagan says that once it has been established the individual "may react to events occurring to M [model] as if they occurred to him" (1958, p. 298).[8]

Kagan's theory then, deals with antecedents and outcomes of identification. Furthermore, his definition of identification as a belief seems to be broad enough to include the many various aspects of identification and is not restricted to certain limited behavioral similarities. Thus,

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[8] Kagain presents examples of the possible implications of identification belief in a later paper (Kagan, 1968).

it appears that it avoids many of the shortcomings of other theories of identification.

Kagan focuses upon childhood and restricts his definition of belief to a change in the self-concept of the identifier. Yet other theorists (e.g., A. Freud, 1936; Freud, 1896, 1897, 1900, 1901, 1905a, 1913, 1915, 1917, 1921; Klein, 1957; Schecter, 1968; Schonbar, 1967; Stotland et al., 1961; Tauber, 1939) maintain that new identifications may be formed in adulthood as well as in childhood. Moreover, some (A. Freud, 1936; Klein, 1946, 1957; Knight, 1940; Stotland et al., 1961) have pointed out that the identifier may perceive greater similarity between himself and the person with whom he identifies without changing his beliefs about himself. In line with those contributions it may be possible to expand the scope of Kagan's theory, without changing its basic premises, in two ways: (1) By assuming that a belief in interpersonal similarity may arise after puberty as well as in childhood. (2) By extending the definition of identification to mean not only an individual's belief that some of the attributes of the model belong to him, but also his belief that some of his attributes belong to the model. This view has been succinctly put forward by Stotland et al. (1961): "The process of generalizing similarities is assumed to take either of two forms, introjection or projection. Introjection is the cognitive process whereby an attribute previously present only in a person's concept of the model now becomes an attribute in his

self-concept. Projection is the process whereby an individual changes his concept of a model to include attributes previously present only in his self-concept" (p. 250). Thus, either introjection or projection may lead to identification.

In its expanded form Kagan's theory predicts that (1) perception of either warmth or competence of another person will give rise to identification with him, provided that some similarity to him is perceived by the identifier; (2) identificatory beliefs may be formed after puberty; (3) an identificatory belief may be brought about and supported either by a change in the identifier's self-concept or in his concept of another person.

The issue of similarity remains to be clarified. Kagan's theory postulates that before the identificatory belief can begin its growth, the potential identifier must perceive "some objective bases of similarity in external attributes or psychological properties between himself and the model" (1964, p. 147). It seems reasonable to assume that not every kind of similarity is sufficient as a prerequisite for the growth of an identificatory belief. If, for example, the model and the potential identifier both wear glasses, but differ in gender, race, social status, occupation and other primary characteristics of identity, it is doubtful that identification will take place. It appears that only certain kinds of interpersonal similarity may qualify as prerequisities for identification. Tentatively

it may be hypothesized that the similarity must be salient.
By "salient" is meant that the characteristics, which are
common to the model and the potential identifier, are of
primary importance to the potential identifier in defining
his identity under the existing circumstances. Some
characteristics will practically always be of primary im-
portance in defining identity, e.g., gender. Some will
practically never be of primary importance, e.g., number of
molars in the mouth. Finally, some characteristics may
vary in their importance, e.g., ethnic origin: when the
potential identifier and the model are surrounded by members
of their own ethnic group, their origin is probably not very
important; but when they find themselves in the midst of a
different ethnic group, their origin may become of primary
importance.

As the following reveals, Freud was aware of the
importance of salience of similarity. Summarizing his views
on the topic he stated that the perception of sharing some
attributes with another person may give rise to identification
and pointed out that "The more important this common quality
is, the more successful may this partial identification
become ..." (1921, p. 108).

These considerations lead to the following hypo-
theses:

(1) If another person is perceived as warm and/

or competent, an individual will view that person as more
similar to himself than when the other is perceived as
affectively neutral and incompetent. That is, he will pro-
ject some of his attributes onto another person.

(2) If another person is perceived as warm and/
or competent, an individual will view himself as more
similar to that person than when the other is perceived as
affectively neutral and incompetent. That is, he will intro-
ject some of another person's attributes. This is assumed
to be true, even if he previously projected some of his
attributes onto another person.

These two hypotheses were put to an empirical test
in the experiment described below. The similarity variable,
on the other hand, was not manipulated. In regard to the
perception of salient interpersonal similarity which,
according to Kagan's theory, is a prerequisite for identi-
fication, it was assumed that the same gender and common
university background of "another person" and the subjects
gave rise to that perception.

DESIGN OF THE STUDY

The purpose of this chapter is to describe the research strategy in a general way and discuss some of the issues involved in the test of the hypotheses.

The view adopted in this study maintains that identification and identificatory processes are not synonymous: identification is considered to be the outcome of identificatory processes, two of which are projection and introjection. The experiment described here is an attempt to induce identification by facilitating projection or introjection.

The purpose of the present study is to test Kagan's theory experimentally by creating conditions that may lead to identification preceded by projection or introjection.

Conceptually, identification is defined as an individual's belief that he and the other (O) share some attributes. The main problem, from the practical point of view, is to enable the individual to express his beliefs about himself and another person, so that it will be possible to compare them. Therefore, identification may be defined operationally as similarity between the ratings of self and another person on, e.g., a series of seven-step, bipolar, adjectival scales. Depending on the situation, projection or introjection are assumed to be leading to that similarity.

In nonlaboratory settings belief about other people may be based on facts as well as projection. In the laboratory, however, an attempt may be made to facilitate projection and exclude factual inferences by asking the experimental subject (S) to evaluate another person on the basis of insufficient evidence. It is assumed that in such situation the S uses his self-concept, i.e., his belief about himself, as the central evaluative tool and, depending on the levels of independent variables, judges the O "like me" or "unlike me." The degree of similarity between first self-rating and other-rating may thus serve as a measure of projection.

Introjection was defined as a "process whereby an attribute previously present only in person's concept of the model now becomes an attribute in his self-concept" (Stotland et al., 1961, p. 250). In the context of the present study this means a change in the self-concept in the direction of greater similarity to the O, which arises as a result of interaction with him.

To avoid confusion, the experimental procedure will now be briefly described. In most general terms it was as follows: At the beginning (1) the S rated himself on a series of bipolar adjectival scales. Then (2) he interacted with the O and, after the interaction, rated (3) first the O and then (4) himself again on the same scales. The measure of introjection, then, may be the

increase in similarity to the $\underline{O}$ between the first and second self-rating.

The two independent variables of the experiment were affective warmth and competence of the $\underline{O}$. There were two levels of warmth: (1) affective neutrality and (2) warmth; and two levels of competence: (1) a low level (subsequently called "incompetence") and (2) a high level (subsequently called "competence"). Thus four experimental conditions were formed: incompetent-affectively neutral (IN), incompetent-warm (IW), competent-neutral (CN), and competent-warm (CW). The type of experimental condition was determined by the differential behavior of the $\underline{O}$.

The assignment of $\underline{Ss}$ to different experimental conditions was randomly determined by the experimenter ($\underline{E}$). However, of the 60 $\underline{Ss}$ only 32 perceived the $\underline{O}$ according to the a priori definition of his behavior, while 28 rated him differently.

A problem that arises now is whether the data collected from those 28 people should be discarded from analysis. It might be argued, in support of that decision, that there is something peculiar about those people, because their perception of objectively defined reality is distorted; apparently they have preconceptions and personal biases that disqualify them as judges of other person's behavior. Nevertheless, that view -- for several reasons -- is untenable.

To begin with, almost 50% of the $\underline{S}$s perceived the $\underline{O}$ not in accordance with the definition of the conditions; if they are disqualified from serving as judges of $\underline{O}$'s behavior, it would mean that almost half of the population cannot evaluate another person properly and their social perception is unreliable.

Secondly, there was not any common pattern of "perceptual distortion." In the warm condition some $\underline{S}$s rated the $\underline{O}$ as "cold," while in the neutral condition some perceived him as "warm." The same phenomenon took place when the sample was split according to the two levels of competence of the $\underline{O}$.

Further, it may be noted that while every effort was made to maintain uniformity in $\underline{O}$'s behavior within the same condition, he was, nonetheless, a live person and it is very likely that there were subtle differences in his behavior in presence of different $\underline{S}$s. These differences might have caused (or contributed to) the differential perception of the $\underline{O}$ within the same condition.

Finally, one may ask what constitutes psychological and social reality for the human perceiver: What he is supposed to perceive or what he perceives, regardless of majority opinion, interpersonal agreement, or experimental manipulation? It is reasonable to assume that people will respond to stimuli according to their perception rather than

according to extraneous definitions of those stimuli. In other words, individual's behavior in response to a given stimulus is determined by his perception of that stimulus. While there is little difference among the individuals in the realm of perception of inanimate objects (at least within the same culture), their judgments of social stimuli differ to a great extent. As Money-Kyrle (1961) put it: " ... the almost purely formal world of physics is the same for everyone. But we have no right to assume in advance that this is also true of the perceptual world of ... people we live in" (p. 10). (Parenthetically, it may be added that Madsen [1968] found that nurturance, contrary to the expectations based on previous studies, did not influence the degree of imitation in preschoolers; he was forced to conclude that the behavior of his models he deemed to be nurturant was not perceived as such by his Ss.)

This line of reasoning helps to explain why almost 50% of the Ss did not perceive the O in accordance with the experimental manipulations and leads to the conclusion that the data collected from them should not be discarded from the analysis. The experimental groups, however, have to be redefined according to Ss' perception of the O. The re-definition procedure is described in the "Method" chapter.

Analyses of variance were performed on the measures of projection and introjection. Since 27 scales

were used for rating, factor analysis of the results was
also feasible. The emerging factors presumably define cer-
tain underlying dimensions. They may be interpretable as
representing, for example, social adjustment, masculinity,
dominance, etc. This, in turn, makes it possible to draw
more detailed inferences about the nature of changes brought
about by identificatory processes. Thus, regardless of
whether the overall results support the hypotheses, it is
possible to investigate whether projection or introjection
took place along certain dimensions, presumably defined by
factors.

METHOD

Overview

At the outset of the experiment the $\underline{S}$ rated himself on a series of bipolar adjectival scales. Then he followed the $\underline{E}$ to the experimental room where he was introduced to the $\underline{O}$. After the $\underline{S}$ sat down, the $\underline{O}$ demonstrated the experimental task. Subsequently the $\underline{S}$ performed the experimental task. Following $\underline{S}$'s performance the $\underline{O}$ left the experimental room. Upon $\underline{O}$'s leaving of the room, the $\underline{S}$ rated the $\underline{O}$ and himself (in that order) on a series of bipolar adjectival scales identical to that which was used for his first self-rating. When he completed the ratings, a postexperimental interview was conducted, during which he received a full explanation of the experiment. Finally, the $\underline{S}$ was paid for his participation and discharged.

Experimental Task

The Hand-Tool Dexterity Test (Bennett, 1965) was used for the experimental task. The test consists of a wooden frame composed of a base with two perpendicular panels attached to its sides, which is clamped to the surface of a sturdy table. In each panel there are 12 holes: four big ones in the top row, four of medium size in the middle row, and four small ones in the bottom row. At the beginning of the test there are 12 assemblies in the holes

of the left panel, each assembly consisting of a bolt, a nut, and two washers. The heads of the bolts are on the inside and the nuts on the outside of the panel, with one washer on each side. The nuts cannot be removed from the bolts with fingers only, but can be easily loosened with the tools. The tools consist of a large wrench, small wrench, screwdriver, and an adjustable wrench. The large wrench fits the heads of the large bolts, the small wrench fits the heads of the medium bolts, and the screwdriver those of the small bolts. The adjustable wrench must be used for the nuts, which also vary in size across the rows. The tools are placed between the panels and the jaws of the adjustable wrench are closed completely.

The objective of the test is to transfer the 12 assemblies from the left to the right panel.

As may be seen from the above, the test is a simple mechanical task. Since the Ss were young males, it was assumed (1) that they would find it interesting, yet not too complicated, and (2) that they will regard competence on the test, because of its nature, as fairly important and relevant to their psychosocial roles. Therefore it was considered appropriate for use as an experimental task.

The Other

A 20-year old male student from the Department of

Drama served as the O. Throughout the duration of the experiment he wore the same suit and tie and his hair style and general appearance remained uniform.

Measures of Independent Variables and Identificatory Processes

The Ss rated themselves and the O on 35 seven-step, bipolar, adjectival scales. The instructions for Ss and the manner of presentation of the scales were fashioned after Osgood, Suci, and Tannenbaum (1957). The self-rating and O-rating forms are presented in Appendices B and C.

Selection of the scales. Initially 48 scales were selected (see Appendix A). The selection was guided by the principle that the scales should not be related to the experimental situation, that is, that the information gained from observing the O should not aid Ss in rating him; thus forcing them to rely on other sources of information and, presumably, facilitating Ss' projection of their own attributes. Simultaneously it was attempted to avoid esoteric or potentially meaningless scales.

In order to establish the reliability of the scales, they were administered to 37 Ss enrolled in an introductory course in psychology. The scales were administered twice with a one-week interval between the testings. The Ss took the test in the classroom on both occasions. None

of them participated in the study at any other stage of investigation.

A pilot study, in which essentially the same experimental procedure as in the main study was followed, was also conducted. Thirty-two Ss, enrolled in an introductory course in psychology, participated in the pilot study.

The number of scales was reduced in the following ways: (1) All the scales with one week test-retest reliability smaller than .50 were eliminated. (2) It is possible that the Ss rate the O on the basis of some stereotype associated with warmth or competence rather than on the basis of their own self-concept. To make that possibility unlikely, all scales, on which in the pilot study ratings of the O correlated better than .50 with his ratings on warmth or competence, were excluded. (3) On the basis of the pilot study the number of scales was further reduced to yield 27 scales that were used in the main study.

The rating form finally used contained 35 scales: 27 scales used in computations, two scales that measured S's perception of O's warmth and competence (cold-warm and dexterous-clumsy), three scales that had the highest correlation with the cold-warm scale (sour-sweet, cruel-kind, suspicious-trusting), and three scales that had the highest correlation with the dexterous-clumsy scale (fast-slow, modern-old-fashioned, calm-agitated). The additional six

scales were included as a safeguard against potentially
uninterpretable findings because it has been suggested
(Schaeffer, 1968) that indirect measures of social perception
may yield more reliable results than direct measures. There
did not, however, appear to be any need for this sort of
analysis and those scales were not included in any calcula-
tions.

The order of scales and the left-right arrangement
of poles were randomly determined. The arrangement of scales
in the booklet was the same in all three ratings.

Measures of projection and introjection. The
differences between $\underline{S}$'s self-rating and his rating of the $\underline{O}$
yielded difference ($\underline{D}$) scores ranging from 0 to 6 for each
scale. The absolute differences between first self-rating and
other-rating were summed across the 27 critical scales for
each $\underline{S}$; the sum of the differences is termed $\underline{D}_1$.[9] $\underline{D}_1$ is con-
sidered to be a measure of projection. The sum of the ab-
solute differences between $\underline{O}$-rating and second self-rating
was termed $\underline{D}_2$. $\underline{D}_2$ was subtracted from $\underline{D}_1$ to yield $\underline{D}_3$ -- a
measure of increase (negative $\underline{D}_3$) or decrease (positive $\underline{D}_3$)
in psychological distance between the self- and other-concepts
($\underline{D}_3 = \underline{D}_1 - \underline{D}_2$).

$\underline{D}_3$ is a measure of absolute change and does not

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[9] All $\underline{D}$ scores used throughout this study are unsquared.

take into account the initial distance between the self- and other-concepts. If there were differences in D_1 scores among the experimental groups, D_3 scores could be interpreted only in the context of D_1. It would seem, therefore, that a more valid measure of change in perceived similarity to the O is the amount of change expressed as proportion of the original distance. The measure of introjection, then, was D_4 ($D_4 = D_3/D_1$).

Design and Procedure

Affective warmth and competence of the O were manipulated in the experiment; thus, his differential behavior determined the type of experimental condition. The O was either (1) affectively neutral or (2) warm and demonstrated either (1) a low level of competence (termed "incompetence") or (2) a high level of competence (termed "competence"). Accordingly, four experimental conditions were created: incompetent-affectively neutral (IN), incompetent-warm (IW), competent-neutral (CN), and competent-warm (CW).

Bandura and Huston (1961) defined as a nurturant condition that in which the model responded positively to Ss' bids for help and attention. McKeachie, Lin, Milholland, and Isaacson (1966) found that the following behaviors of an instructor in a classroom situation had the highest loadings on the factor of friendliness: (1) the instructor takes

personal interest in students, (2) the instructor calls the students by name. Reece and Whitman (1962), drawing on the results of a previous study in which 34 judges were used (Reece & Whitman, 1961), defined the following behaviors of an E as warm: (1) he looks directly at the S, (2) he smiles to the S, (3) he leans toward the S, (4) he keeps his hands still.

The levels of warmth were operationalized in accordance with those findings and definitions. Bennett's manual (1965) was consulted in defining levels of competence.

Neutral conditions (IN and CN). The E met the S at the door of the house in which the experiment was conducted and introduced himself. The S, without being told anything about the experiment or its purpose, was then ushered into a room and asked to rate himself. When he finished, the E checked the booklet for omissions and errors and asked the S to follow him. They moved to the experimental room. When they entered the room, the E said: "I would like you to meet Dave Marriage,[10] my research assistant. Dave, this is [name of the S]." The O rose slowly from his chair and looking into space beyond the S's shoulder, shook hands with him and sat down silently, immediately busying himself with paper work. The E directed the S to a chair

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[10] Actual name of the O.

in front of the table on which the frame was mounted and sat down himself. When everybody was seated, the E said: "Dave will now demonstrate a certain task; please watch him closely." The O rose from his chair and walked to a position behind the frame. The E took a stop watch into his hand and asked the O "Ready?" The O nodded his head, the E said "Go!" and started the stop watch. The O then proceeded to transfer the 12 assemblies of bolts, nuts, and washers from the left to the right panel. When he finished he returned to his chair and resumed his writing. Meanwhile the E stopped the watch and wrote the time on a sheet of paper. Then he rose, walked to the table and rotated the frame so that the assemblies were again on the left panel. Next he asked the S to step behind the table, took a stop watch in his hand and standing in front of the S gave the following instructions: "The idea of this task is to remove all these bolts from this upright and place them on corresponding rows on the other upright with the heads of the bolts on the inside. When you fasten the nuts on these bolts, tighten them with the wrenches just tight enough so that they cannot be removed with the fingers. Do not put too much pressure on the wrenches in tightening the nuts. In placing the bolts in the right-hand upright, make sure that the heads of the bolts are on the inside. All right? -- go ahead. Work as rapidly as possible!" When the S picked up the first tool, the E started the stop watch and

returned to his chair. While the S worked, the E observed him, but remained silent. When the S finished working, the E stopped the watch and wrote the time on a sheet of paper. He then asked the S to sit behind a small table, walked to a bookcase, and picked up two rating booklets. After picking them up he turned to the O and said "You can go now." The O walked out of the room in silence, avoiding looking at the S's face. When the O closed the door behind him, the E handed one of the booklets to the S, asking him to read the instructions. When he finished reading them, the E ascertained that the S understood that he had to rate the O. Upon completion of that rating, the S was handed another booklet identical to the one used for the first self-rating, and told to rate himself. Finally, a postexperimental interview was conducted. The S was encouraged to express his impressions of the task, the O, and the experiment in general. Following that, he received a full explanation of the experiment and its purpose. After answering all his questions, the E paid the S for his participation, asked him not to discuss the experiment with anybody, and thanked him for his service, whereupon the S left the room.[11]

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[11] It might be argued that the O's behavior was cold rather than affectively neutral and the conditions described above should be labeled "cold." On the other hand, it should be noted that the O attempted to be withdrawn rather than openly unfriendly. Therefore, perhaps somewhat arbitrarily, these conditions were named "neutral."

Warm conditions (IW and CW). Until the introduction of the O to the S the procedure was the same as in the neutral conditions. Upon being introduced to the S, the O rose from his chair at a moderate speed and smiling at the S said: "I'm pleased to meet you, [name of the S]." From then on, except for the time that he was demonstrating the experimental task, the O was looking at the S, smiled whenever appropriate, kept his hands still, and leaned slightly toward the S when talking to him. When he was standing behind the frame and the E asked him "Ready?", the O answered "Mhm." When the E rotated the frame to prepare it for the S, the O engaged the S in a conversation. The exchange was focused upon S's courses, his interest in them and academic satisfaction as well as his major or planned major with the O asking the questions and the S answering them. The O conveyed keen interest in the S and his opinions, but carefully avoided asking him questions that might be embarrassing (grades, for example, were never discussed). O's first question was always: "[Name of the S], what courses are you taking?" From that point on, depending on S's answer, the O "played it by ear," staying within the aforementioned limits.

When he finished preparing the frame for the S, the E gently interrupted their dialogue and gave the test instructions to the S. When the S worked the O gave him

three appropriately timed encouragements; e.g.: "Very good, [name of the S]." Furthermore since he watched the S, he readily responded to S's bids for attention.[12] The following is an example of such exchange: S: "It's more difficult than what I've thought." O: "First time it's difficult for everybody."

When the E told the O that he could leave the room, the O rose, smiled to the S and, prior to leaving, said: "It's been nice to 've met you [name of the S], good-by."

Competent conditions (CN and CW). In the competent conditions the O performed the experimental task smoothly and efficiently. The eight assemblies from the two top rows that were put on the table before mounting on the right panel, were arranged there in an orderly fashion. The O used both hands simultaneously for picking up parts from the table.

Incompetent conditions (IN and IW). In these conditions the O dropped a nut when removing, from the left panel, the first assembly in the top row, the third in the middle row, and the second in the bottom one. Before selecting the screwdriver for removal of the assemblies from the bottom row, he hesitated for a moment, his hand suspended

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[12] Several Ss did not seek reassurance.

in the air between the small wrench and the screwdriver.
The eight assemblies from the two top rows were put on the
table chaotically. He picked them up using one hand and then,
if necessary, transferred a part to the other hand. He
attempted to put the first assembly of the bottom row on the
table, but then, as if remembering the correct manner of
work, he started mounting it on the right panel (the remaining
three assemblies from the bottom row were transferred
directly to the right panel). Finally, he fumbled with the
nuts when mounting the bottom row (which has the smallest
nuts) on the right panel. Nevertheless, his hand movements
were fast and the O conveyed the impression not of slowness,
but rather of clumsiness and tense inefficiency.

Subjects

Seventy-four male paid volunteers enrolled in an
introductory course in psychology served as subjects. Data
collected from 14 of them were not used in the analysis for
the following reasons: two had known the O before meeting
him in the experimental room, one rated him on the basis of
his predetermined attitude toward strangers, ten suspected
that the O's behavior was not natural, and in one case the
O dropped a nut on the floor although it was supposed to be
one of the competent conditions. The remaining 60 Ss
(mean age: 19.7 yrs.; range: 17 - 31 yrs.) were assigned

to experimental groups in a random order within the limits imposed by the attrition of the sample.

As mentioned in the "Design of the Study" chapter, only 32 Ss perceived the O according to the a priori definition of his behavior and the experimental groups were redefined according to the Ss' perception of the O. This procedure was carried out as follows: On the cold-warm scale the O was rated from 1 to 6; the scale was split in half, that is, between the ratings of 3 and 4. As a result of this procedure, 39 Ss were included in the warm groups and 21 in the neutral groups. On the dexterous-clumsy scale the O was rated from 1 to 7 but only one S assigned the rating of 7 to him. Therefore, also on this scale, the split was performed between the ratings of 3 and 4. This resulted in 38 Ss being assigned to competent groups and 22 to incompetent groups. Table 1 presents the origin of the redefined groups and the number of Ss in each group.

Table 1

The Origin and Size of the Experimental Groups
According to the Perception of the O

Experimental group	Originally included in the group	"Moved" to the group from other groups	Total (new N)
IN	6	3	9
IW	7	6	13
CN	7	5	12
CW	12	14	26
Total	32	28	60

RESULTS

Preliminary considerations. It will be recalled that the independent variables in this study were warmth of the $\underline{O}$ and competence of the $\underline{O}$. Although they were varied independently of each other, there existed a possibility that the $\underline{S}$s rated the $\underline{O}$ as competent because they perceived him to be warm or vice versa. To test this eventuality, the correlation between the ratings of the $\underline{O}$ on cold-warm and dexterous-clumsy scales was calculated, yielding an $\underline{r}$ of -.154, which is negligible and nonsignificant.

Since a large percentage of the $\underline{S}$s did not rate the $\underline{O}$ according to the experimental manipulation, it seems obvious that other factors influenced their judgment. One such possibility is that they simply assigned to the $\underline{O}$ their own self-ratings on the two scales that measured independent variables. Toward that end the correlations between first self-ratings of the $\underline{S}$s and their ratings of the $\underline{O}$ on the dexterous-clumsy and cold-warm scales were computed, yielding nonsignificant $\underline{r}$s of .112 and -.004 respectively.

Test of the hypotheses. Table 2 presents the means and standard deviations of $\underline{D}_1$ scores. Analysis of variance of the data revealed that the initial psychological distance between the $\underline{S}$ and the $\underline{O}$ was significantly smaller in the W groups than in the N groups ($\underline{F}$=9.35, $\underline{df}$ = 1/56,

$p < .005$). On the other hand, the main effect of competence as well as interaction were nonsignificant ($p > .10$ in both cases, see Table D-1 for full summary of analysis of variance). Thus, the first hypothesis, which postulates that if an individual perceives another person as warm and/or competent, he will view that person as more similar to himself than when the other is perceived as affectively neutral and incompetent, is only partially supported by the data.

Table 2

Means and Standard Deviations of D_1 Scores

Experimental group	M	SD
IN	50.44	18.86
IW	37.38	15.72
CN	47.58	13.18
CW	36.08	12.55

The second hypothesis states that if another person is perceived as warm and/or competent, an individual will view himself as more similar to him than when the other is perceived as affectively neutral and incompetent. In

other words, the psychological distance between the per-
ceiver and another person, that is, between self- and
other-concepts, will decrease.

To test the second hypothesis $\underline{t}$ tests of $\underline{D}_4$
scores, for each experimental group separately, were carried
out. The null hypothesis for those tests states that the
mean $\underline{D}_4$ score in each group will be zero, that is, that the
first and second self-rating were the same. A significant
$\underline{t}$ indicates that there was a significant decrease (or in-
crease) in the psychological distance between the self- and
other-concepts, i.e., the second self-rating was more (or
less) similar to the other-rating than the first self-
rating. Table 3 presents the relevant data.

Table 3

Means, Standard Deviations, and Levels of Significance
of $\underline{D}_4$ Scores

Experimental group	$\underline{M}$	$\underline{SD}$	$\underline{t}$	$\underline{p}$
IN	-0.008	0.106	0.23	n.s.
IW	0.138	0.123	4.06	<.005
CN	0.157	0.112	4.87	<.001
CW	0.144	0.110	6.70	<.001

Note.-- Negative sign indicates increase in the psycho-
logical distance between the self- and other-concepts.

It may be seen from Table 3 that perception of
either warmth or competence of the $\underline{O}$ is sufficient to change
the self-concept of the $\underline{S}$ by making it more like his concept
of the $\underline{O}$.   On the other hand, combination of warmth and
competence does not cause a greater change than any of these
factors alone.

Analysis of variance of $\underline{D}_4$ scores was performed
to evaluate the influence of different levels of independent
variables; it is summarized in Table 4.   The main and inter-
action effects were significant.   Investigation of the source
of differences by comparing cell means using $\underline{t}$ test revealed
that the IN group differed significantly from the other three
groups ($\underline{p} < .01$ for every comparison) while the IW, CN, and
CW groups did not differ significantly from each other
($\underline{p} > .10$ for every comparison).   Thus, additional support is
obtained for the conclusions drawn from Table 3.

Table 4

Analysis of Variance of $\underline{D}_4$ Scores

Source	$\underline{df}$	$\underline{MS}$	$\underline{F}$	$\underline{p}$
Competence (A)	1	0.095	7.49	<.01
Warmth (B)	1	0.057	4.48	<.05
A x B	1	0.082	6.46	<.05
Error	56	0.013		

Summaries of the data collected from the 32 $\underline{S}$s that perceived the $\underline{O}$ according to the experimental manipulations are presented in Appendix E.

Factor analysis. The fist self-ratings on the 27 scales were factored by the principal components method. A scree test (Cattell, 1966) indicated that factoring should stop after the extraction of the sixth factor. The data were re-run through the computer, programed to extract six factors only, and the factors rotated to quartimax, equamax, and varimax criteria. The quartimax rotation yielded factors that were most readily interpretable and subsequent analyses were performed on three of those. The remaining three factors did not yield themselves to a meaningful interpretation and no further work was done on them. Table 5 presents the factor loadings of the scales that are .300 or higher.

Table 5

Rotated Factor Loadings of the 27 Scales

Scale	h^2	I	II	III	IV	V	VI
realistic-theoretical	658	-766					-432
crude-refined	698	712					
unconventional-conventional	646	643					
abstract-minded-practical	494	613					
brave-timid	723	-592	-498			314	
stable-changeable	692	-566		446		-308	
full-empty	646	-504	-323		-457		
small-large	833		885				
heavy-light	787		-838				
complacent-ambitious	626		719				
rugged-delicate	577		-661				
dark-bright	708		530		420		394
rough-smooth	582		-526	304			340
arrogant-deferential	729			-797			
stubborn-compliant	576			-705			
cautious-adventurous	822	319		-632		-460	
leisurely-busy	558			616			
loud-subdued	653		-425	-564	-348		
anxious-placid	190			-391			
complex-simple	880	-539			-880		
common-uncommon	699	364			561		
passive-active	678		305		531		
formal-casual	795					-841	
rounded-angular	631	-535				567	
reliable-unreliable	573	-367				522	339
hard-soft	759						763
critical-easy-going	830		366	-379			714
Sum of squared loadings	18.043	4.154	4.052	3.303	2.309	2.126	2.099

Notes.--(a) Decimal points omitted. (b) Only loadings greater than .300 are shown; full table is presented in Appendix D.

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Interpretation of factors. Nine scales have
loadings of .400 or higher on the first factor, among them
"realistic-theoretical," "unconventional-conventional,"
"abstract-minded-practical," "stable-changeable," and
"common-uncommon." The low-loading poles seem to depict
an undependable, impractical, detached man. The high-
loading poles form a cluster that one would expect to
find in a conventional, reliable, practical man. Thus,
the first factor may be interpreted as "dependable
practicality."

Eight scales have loadings of .400 or higher on
the second factor. The opposing clusters of poles, with
the possible exception of "dark-bright" scale, appear to
describe the cultural stereotypes of masculinity and
femininity. One cluster (large, heavy, ambitious, rugged,
rough, brave, loud) presents the stereotype a he-man, a
go-getter, an extraverted sportsman, whose image is fre-
quently used for advertising cigarettes, liquor, hunting
equipment, and sporting gear. The other cluster (small,
light, complacent, delicate, smooth, timid, subdued)
presents the stereotype of a dainty, demure, born-to-please
woman, whose image is frequently used for advertising cos-
metics and other feminine grooming products. The second
factor, then, may be interpreted as "masculinity-femininity"
factor.

Six scales have loadings of .400 or higher on the third factor. If "cautious-adventurous" scale is excluded, the poles form two distinct clusters. One of them (arrogant, stubborn, busy, loud, changeable) might be named "impulsivity," the other (deferential, compliant, leisurely, subdued, stable) -- "reserve." It would seem that the third factor may best be interpreted as "impulsivity-reserve" factor.

Analysis of factor scores. Raw scores on the first self-rating, O-rating, and second self-rating were converted into standardized factor scores (M = 50, SD = 10) for each of the three factors. D_1 and D_4 scores were calculated and appropriate analyses carried out.

Tables 6, 7, and 8 summarize the analyses of variance of D_1 scores for each factor separately, while Table 9 presents the means for all three factors. The results appear to be essentially the same for all three factors: If the O is perceived as competent, he is also perceived as more similar to the rater; on the other hand, warmth is of no importance.

Table 6

Analysis of Variance of the First Factor $\underline{D}_1$ Scores

Source	$\underline{df}$	$\underline{MS}$	$\underline{F}$	$\underline{p}$
Competence (A)	1	398.38	4.84	$<.05$
Warmth (B)	1	67.22	0.82	n.s.
A x B	1	22.17	0.27	n.s.
Error	56	82.35		

Table 7

Analysis of Variance of the Second Factor $\underline{D}_1$ Scores

Source	$\underline{df}$	$\underline{MS}$	$\underline{F}$	$\underline{p}$
Competence (A)	1	437.76	3.88	$<.06$
Warmth (B)	1	235.35	2.09	n.s.
A x B	1	67.77	0.60	n.s.
Error	56	112.70		

Table 8

Analysis of Variance of the Third Factor D_1 Scores

Source	df	MS	F	p
Competence (A)	1	514.41	4.91	<.05
Warmth (B)	1	82.14	0.78	n.s.
A x B	1	86.94	0.83	n.s.
Error	56	104.74		

Table 9

Means of D_1 Scores for All Three Factors

Experimental group	First Factor	Second Factor	Third Factor
IN	16.29	19.44	16.94
IW	12.70	12.88	11.82
CN	9.43	11.33	8.03
CW	8.46	9.35	8.10

Analysis of $\underline{D}_4$ scores by means of $\underline{t}$ tests was also carried out. Twelve $\underline{t}$ tests were calculated (four groups, each on three factors), none was significant at .05 level. It appears reasonable to conclude that introjection did not take place along the dimensions defined by the factors.

DISCUSSION

The results of the present investigation support Kagan's theory of identification. When the O was perceived as warm and/or competent, $\underline{S}$'s second self-rating was more similar to his rating of the O than his first self-rating. In more general terms, when another person was perceived as warm and/or competent, the perceiver changed his belief about himself to view himself as more similar to the other person than in the absence of those perceptions. It should be noted that perception of either warmth or competence was sufficient to bring about changes in $\underline{S}$s' beliefs about themselves.

On the other hand, the first hypothesis is only partially supported: when the O was perceived as warm, he was also perceived as being more like the $\underline{S}$ than under the perception of affective neutrality, but perception of competence did not bring about projection of one's own traits onto the O.

It will be recalled that the $\underline{S}$s rated the O after he had demonstrated the experimental task in front of them. This means that in the competent condition he has displayed his superior skills in a mechanical task before he was rated. It is possible, then, that the $\underline{S}$s, because of the relatively large difference in manual dexterity, could not perceive the O as very similar to themselves. On the other

hand, in the warm condition, when there was no external standard of comparison, they could perceive the O as more similar to themselves than in the competent condition.

In order to test this explanation the relevant comparisons are those between self-ratings and O-ratings on cold-warm and dexterous-clumsy scales in the warm and competent conditions respectively; they are presented in Table 10.

Table 10

Means, Standard Deviations, and Levels of Significance
of the Differences Between Self-Ratings and
O-Ratings on Scales Measuring Independent Variables
in Selected Experimental Groups

Type of difference	M	SD	t	p
Self-rating vs. O-rating on cold-warm scale in the warm groups	0.179	1.334	0.84	n.s.
Self-rating vs. O-rating on dexterous-clumsy scale in the competent groups	0.737	1.327	3.41	<.005

Note.--The O perceived as more competent in the competent condition.

Table 10 demonstrates that in the warm condition the difference between self-rating and O-rating on cold-warm scale is very small and nonsignificant. While the same difference on the dexterous-clumsy scale in the competent condition is not very large, it is significant and apparently large enough to create a feeling of greater dissimilarity than in the other condition.

The CW group is included in both calculations, yet the mean differences in the group are essentially the same as in the whole condition (.115 on the cold-warm scale, .731 on the dexterous-clumsy scale). One is forced to conclude that in this group the effect of similarity in warmth is stronger than the effect of relative dissimilarity in competence, at least as far as attributing one's own characteristics to another is concerned.

The foregoing discussion may be summarized by stating that when the perceived difference between an observer and another person was large, it prevented attribution of traits perceived in one's self-concept to another individual. In other words, projection of traits that an individual believed characterized him did not take place when another individual was perceived as markedly dissimilar.

The results of this study are in agreement with those reported by Ex and Schouten (1968). In that study sympathetic-antipathetic behavior of the O (akin to warmth

in the present study) and similarity-dissimilarity were the independent variables. The authors found that either sympathetic behavior of the O or similarity to him led to projection of Ss' self-attributes onto the O. In a broader sense, the two studies complement each other in supporting Kagan's theory.

Stotland et al. (1961) postulated that projection and introjection are types of identification. More than twenty years earlier Knight (1940) hypothesized that "in most instances, perhaps, complex interaction of both projection and introjection will have operated to produce the identification" (p. 341). In the present study introjection took place after the S had projected some of his attributes onto the O. The results, then, are congruent with the notions advanced by Stotland and his colleagues as well as those of Knight.[13]

Among the theories that maintain that both projection and introjection are intimately involved in identification, Melanie Klein's (1946) is probably best known. She maintains that projection and introjection are central

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[13] Anna Freud (1936), in describing "altruistic surrender," discusses the relationship between projection and identification. It appears, however, that she considers projection a forerunner of identification in a specific situation rather than a process that produces identification and may do so in various situations.

processes in the early life and identification is their out-come. Although Klein focuses upon the first six months of life, in at least one paper (1957) she extends her theory to include adult years. It appears that the results reported here are not inconsistent with her theory.[14]

The analyses of the factor scores revealed that projection took place only when the O was perceived as competent, while introjection did not occur in any group on any factor. Those results may seem puzzling when compared with the overall results, but the examination of the nature of the factors seems to offer a solution.

All three factors appear to be strongly related to masculinity. Now, all authorities, from Freud to Kohlberg, are in agreement that by the age of seven gender identity is quite stable (there are some differences as to when gender identity crystallizes, but the age of seven appears to be the upper limit). The youngest S in the present study was 17 yrs. old. Therefore, it is not puzzling that while the Ss changed their beliefs about themselves when the O was perceived as warm or competent, they did not do so in regard to the gender

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[14] It should be mentioned that Deutsch (1959) proposed that an individual projects perceptions of his own body onto external objects; later those objects become symbolically reunited with the body. Deutsch called that process "retro-jection." His hypothesis, although fairly restricted in scope, is similar to Klein's theory and the present hypotheses, namely, that which has been projected may later be introjected.

aspect of the self-concept. An individual was prepared to
believe that, for example, he was more or less anxious or
complex, but he did not change his belief about his masculinity.
This seems to be consistent with the common sense approach,
which would maintain that the degree to which one perceives
himself as anxious or complex depends to a great extent on
the situation and his social environment, but one perceives
himself (or herself) as a man (or a woman) regardless of
circumstances. There are some traumatic events that may under-
mine one's belief in his gender identity, but the experimen-
tal situation was far from being traumatic.

The fact that all three factors appear to be related
to masculinity may also explain why projection took place
only under the perception of competence: It seems plausible
to assume that in the Canadian society competence is one of
the components of the masculine image, while warmth, on the
other hand, may be unrelated to that image. Thus, when the
O was perceived as competent, it was possible to project
onto him other components of the masculine image (although
this was hampered by the perception of considerable dissimi-
larity in levels of competence, indeed, the results are of
borderline significance). By way of speculation it may be
suggested that if the Ss were women and the O was a woman,
warmth and not competence would have caused projection on
gender-related factors.

Finally, it may be appropriate to inject a note of caution regarding the interpretation of the results. Because of the fact that the measures of introjection were taken immediately after the interaction with the $\underline{O}$, it is impossible to maintain that any stable modification of the belief about the self has taken place. Identification, in general, is considered a permanent change of the self; the results obtained in the present study demonstrate only that as a result of brief interaction some modification of the self-concept is possible, but no claim can be made in regard to the stability of such a change.

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APPENDIX A

Initially Selected Scales

reserved-spontaneous

ferocious-peaceful

predictable-unpredictable

stable-changeable

common-uncommon

loud-subdued

modern-old-fashioned

stubborn-compliant

curious-uninterested

full-empty

rough-smooth

reliable-unreliable

idealistic-materialistic

explicit-ambiguous

closed-open

anxious-placid

crude-refined

tough-tender

brave-timid

cheerful-gloomy

satisfied-dissatisfied

realistic-theoretical

leisurely-busy

cautious-adventurous

critical-easy-going

rounded-angular

complacent-ambitious

dark-bright

contented-discontented

excitable-apathetic

small-large

unconventional-conventional

arrogant-deferential

suspicious-trusting

complex-simple

pessimistic-optimistic

abstract-minded-practical

formal-casual

cruel-kind

sharp-dull

sweet-sour

rugged-delicate

calm-agitated

active-passive

happy-sad

hard-soft

fast-slow

heavy-light

APPENDIX B

Booklet Used for First and Second Self-Rating

Self-Rating Test

Instructions

The purpose of this study is to measure how various people rate themselves on a series of descriptive scales. In taking this test, please make your judgments on the basis of what these scales mean to you. On the following pages you will find several scales, you are to rate yourself on each of these scales in order.

Here is how to use these scales:

If you feel that you are very much like the description at one end of the scale, you should place your check-mark as follows:

serious__X__:_____:_____:_____:_____:_____:_____humorous

OR

serious_____:_____:_____:_____:_____:_____:__X__humorous

If you feel that you are quite like the description on one or the other end of the scale (but not extremely), you should place your check-mark as follows:

serious_____:__X__:_____:_____:_____:_____:_____humorous

OR

serious_____:_____:_____:_____:_____:__X__:_____humorous

If you feel that you are only slightly like the description on one side as opposed to the other side (but still one of them describes you better), you should place your check-mark as follows:

serious_____:_____:__X__:_____:_____:_____:_____humorous

OR

serious_____:_____:_____:_____:__X__:_____:_____humorous

The direction toward which you check, depends, of course, upon which of the two descriptions seems to you most characteristic of yourself.

If you consider yourself neutral on the scale, both descriptions fitting you equally well (or being irrelevant), then you should place your check-mark in the middle space:

serious_____:_____:_____:__X__:_____:_____:_____humorous

- 2 -

IMPORTANT:

(1) Place your check-marks in the middle of spaces, not on the boundaries:

<div align="center">

THIS   NOT THIS

_____:_____:_____: X :_____:_____:_____

</div>

(2) Be sure to check <u>every scale</u> and to follow the order in which they are presented.

(3) Never put more than one check-mark on a single scale.

rough____:____:____:____:____:____:____smooth

reliable____:____:____:____:____:____:____unreliable

complacent____:____:____:____:____:____:____ambitious

unconventional____:____:____:____:____:____:____conventional

passive____:____:____:____:____:____:____active

rounded____:____:____:____:____:____:____angular

formal____:____:____:____:____:____:____casual

sour____:____:____:____:____:____:____sweet

modern____:____:____:____:____:____:____old-fashioned

hard____:____:____:____:____:____:____soft

brave____:____:____:____:____:____:____timid

loud____:____:____:____:____:____:____subdued

complex____:____:____:____:____:____:____simple

stable____:____:____:____:____:____:____changeable

cautious____:____:____:____:____:____:____adventurous

heavy____:____:____:____:____:____:____light

common____:____:____:____:____:____:____uncommon

- 4 -

anxious_____:_____:_____:_____:_____:_____:_____placid

calm_____:_____:_____:_____:_____:_____:_____agitated

critical_____:_____:_____:_____:_____:_____:_____easy-going

abstract-minded_____:_____:_____:_____:_____:_____:_____practical

suspicious_____:_____:_____:_____:_____:_____:_____trusting

fast_____:_____:_____:_____:_____:_____:_____slow

full_____:_____:_____:_____:_____:_____:_____empty

cold_____:_____:_____:_____:_____:_____:_____warm

stubborn_____:_____:_____:_____:_____:_____:_____compliant

arrogant_____:_____:_____:_____:_____:_____:_____deferential

cruel_____:_____:_____:_____:_____:_____:_____kind

dexterous_____:_____:_____:_____:_____:_____:_____clumsy

crude_____:_____:_____:_____:_____:_____:_____refined

dark_____:_____:_____:_____:_____:_____:_____bright

realistic_____:_____:_____:_____:_____:_____:_____theoretical

leisurely_____:_____:_____:_____:_____:_____:_____busy

rugged_____:_____:_____:_____:_____:_____:_____delicate

small_____:_____:_____:_____:_____:_____:_____large

APPENDIX C

Booklet Used for Other-Rating

Rating Test

<u>Instructions</u>

The purpose of this study is to measure how various people rate others on a series of descriptive scales. In taking this test, please make your judgements on the basis of what these scales mean <u>to you</u>. On the following pages you will find several scales, you are to rate another person on each of these scales in order.

Here is how to use these scales:

If you feel that the other person is <u>very much</u> like the description at one end of the scale, you should place your check-mark as follows:

serious__X__:_____:_____:_____:_____:_____:_____humorous

OR

serious_____:_____:_____:_____:_____:_____:__X__humorous

If you feel that the other person is <u>quite like</u> the description on one or the other end of the scale (but not extremely), you should place your check-mark as follows:

serious_____:__X__:_____:_____:_____:_____:_____humorous

OR

serious_____:_____:_____:_____:_____:__X__:_____humorous

If you feel that the other person is <u>only slightly like</u> the description on one side as opposed to the other side (but still one of them describes him better), you should place your check-mark as follows:

serious_____:_____:__X__:_____:_____:_____:_____humorous

OR

serious_____:_____:_____:_____:__X__:_____:_____humorous

The direction toward which you check, depends, of course, upon which of the two descriptions seems to you most characteristic of the other person.

If you consider the other person neutral on the scale, both descriptions fitting him <u>equally well</u> (or being irrelevant), then you should place your check-mark in the middle space:

serious_____:_____:_____:__X__:_____:_____:_____humorous

IMPORTANT:

(1) Place your check-marks in the middle of spaces, not on the boundaries:

THIS   NOT THIS

_____:_____:_____:__X__:_____:_____:_____

(2) Be sure to check <u>every scale</u> and to follow the order in which they are presented.

(3) Never put more than one check-mark on a single scale.

rough_____:_____:_____:_____:_____:_____:_____smooth

reliable_____:_____:_____:_____:_____:_____:_____unreliable

complacent_____:_____:_____:_____:_____:_____:_____ambitious

unconventional_____:_____:_____:_____:_____:_____:_____conventional

passive_____:_____:_____:_____:_____:_____:_____active

rounded_____:_____:_____:_____:_____:_____:_____angular

formal_____:_____:_____:_____:_____:_____:_____casual

sour_____:_____:_____:_____:_____:_____:_____sweet

modern_____:_____:_____:_____:_____:_____:_____old-fashioned

hard_____:_____:_____:_____:_____:_____:_____soft

brave_____:_____:_____:_____:_____:_____:_____timid

loud_____:_____:_____:_____:_____:_____:_____subdued

complex_____:_____:_____:_____:_____:_____:_____simple

stable_____:_____:_____:_____:_____:_____:_____changeable

cautious_____:_____:_____:_____:_____:_____:_____adventurous

heavy_____:_____:_____:_____:_____:_____:_____light

common_____:_____:_____:_____:_____:_____:_____uncommon

anxious_____:_____:_____:_____:_____:_____:_____placid

calm_____:_____:_____:_____:_____:_____:_____agitated

critical_____:_____:_____:_____:_____:_____:_____easy-going

abstract-minded_____:_____:_____:_____:_____:_____:_____practical

suspicious_____:_____:_____:_____:_____:_____:_____trusting

fast_____:_____:_____:_____:_____:_____:_____slow

full_____:_____:_____:_____:_____:_____:_____empty

cold_____:_____:_____:_____:_____:_____:_____warm

stubborn_____:_____:_____:_____:_____:_____:_____compliant

arrogant_____:_____:_____:_____:_____:_____:_____deferential

cruel_____:_____:_____:_____:_____:_____:_____kind

dexterous_____:_____:_____:_____:_____:_____:_____clumsy

crude_____:_____:_____:_____:_____:_____:_____refined

dark_____:_____:_____:_____:_____:_____:_____bright

realistic_____:_____:_____:_____:_____:_____:_____theoretical

leisurely_____:_____:_____:_____:_____:_____:_____busy

rugged_____:_____:_____:_____:_____:_____:_____delicate

small_____:_____:_____:_____:_____:_____:_____large

APPENDIX D

Supplementary Tables

Table D-1

Analysis of Variance of D_1 Scores

Source	df	MS	F	p
Competence (A)	1	56.09	0.27	n.s.
Warmth (B)	1	1,947.85	9.35	<.005
A x B	1	7.79	0.04	n.s.
Error	56	208.22		

Table D-2

Rotated Factor Loadings of the 27 Scales

Scale	h²	Factor					
		I	II	III	IV	V	VI
realistic-theoretical	658	-766	-141	054	166	086	116
crude-refined	698	712	-271	-064	174	149	247
unconventional-conventional	646	643	060	202	040	-004	-432
abstract-minded-practical	494	613	-053	262	-003	062	206
brave-timid	723	-592	-498	087	-130	314	-035
stable-changeable	692	-566	-196	446	-179	-308	086
full-empty	646	-504	-323	238	-457	022	147
small-large	833	009	885	078	-132	063	146
heavy-light	787	-122	-838	071	181	-158	082
complacent-ambitious	626	232	719	185	050	104	089
rugged-delicate	577	142	-661	-146	-073	241	187
dark-bright	708	298	530	072	420	037	394
rough-smooth	582	285	-526	304	-119	047	340
arrogant-deferential	729	-114	-051	-797	236	143	-051
stubborn-compliant	576	201	-075	-705	160	-062	-065
cautious-adventurous	822	319	031	-632	274	-460	181
leisurely-busy	558	138	131	616	153	271	215
loud-subdued	653	-097	-425	-564	-348	154	000
anxious-placid	190	-003	032	-391	-082	-086	147
complex-simple	880	024	089	128	-880	-065	278
common-uncommon	699	-539	-221	169	561	-012	128
passive-active	678	364	305	-287	531	284	087
formal-casual	795	-240	011	-168	-023	-841	-028
rounded-angular	631	-535	024	050	120	567	-077
reliable-unreliable	573	-367	039	176	137	522	339
hard-soft	759	-008	-265	214	-148	195	763
critical-easy-going	830	-031	366	-379	-102	-178	714
Sum of squared loadings	18.043	4.154	4.052	3.303	2.309	2.126	2.099

Note.--Decimal points omitted.

APPENDIX E

"Successfully Manipulated" Subjects

The experimental method came to psychology from the physical sciences and has been transplanted in a somewhat naive way (Koch, 1969). In the physical sciences it is meaningful to describe the independent variables in objective terms. For example, a statement that water changes from liquid to gas at 100°C is a meaningful and adequate description of the situation. On the other hand, describing a psychological experiment, in which "hot" water has been used, by reporting only the temperature of the water is not adequate, especially in borderline temperatures. What is "hot" for one S may be "warm" to another and "tepid" to a third.

It has been maintained above that the human perception of inanimate objects appears to be fairly uniform, at least within the same culture; but that it differs to a great extent in regard to social stimuli. It follows that the social stimuli should be described as the S perceives them. Nevertheless, psychology has not succeeded in freeing itself from the physicalistic tradition, and in the literature the independent variables are described according to E's manipulations. In line with that tradition, data on 32 Ss, who perceived the O according to the experimental manipulations, are reported below (see Table 1 for the number of Ss in the experimental groups).

Analysis of variance of $\underline{D}_1$ scores of the $\underline{S}$s who perceived the $\underline{O}$ according to the experimental manipulations revealed that the main effect of competence as well as inter- action were insignificant (in both cases $\underline{p} > .10$), but the main effect of warmth was significant ($\underline{F} = 8.24$, $\underline{df} = 1/28$, $\underline{p} < .01$). The results are essentially the same as those based on the data presented in Table 2.

Table E-1

Means, Standard Deviations, and Levels of Significance of D_4 Scores of the Subjects Who Perceived the $\underline{O}$ According to the Experimental Manipulations

Experimental group	$\underline{M}$	$\underline{SD}$	$\underline{t}$	$\underline{p}$
IN	-0.005	0.132	0.09	n.s.
IW	0.152	0.091	4.44	< .005
CN	0.118	0.081	3.79	< .01
CW	0.103	0.109	3.33	< .01

Note.-- Negative sign indicates increase in the psycho- logical distance between self- and other-concepts.

Comparison of the results presented in Table E-1 with those presented in Table 3 indicates that while there are some differences between the means as well as between

levels of probability (partly caused by the decrease in the number of $\underline{S}$s), the same conclusions may be drawn from both tables.

In summary, one may conclude that the same inferences may be arrived at whether the data collected from all 60 $\underline{S}$s are used or only those from the 32 $\underline{S}$s who perceived the $\underline{O}$ according to the experimental manipulations.

APPENDIX F

Identification and Imitation

At the end of the last century the Hebrew publicist,
Achad Ha'am (1892), discussed the problems of assimilation
of a minority ethnic group into the surrounding majority.
He differentiated between "competitive" and "submissive"
types of imitation. In the former the imitator maintains
his "spiritual independence" and the imitated acts are
modified to fit his own needs; in the latter the imitator
renounces his "spiritual independence" and the imitated acts
are reproduced without change.

Achad Ha'am's insight may be helpful in solving
the thorny problem of differences and similarities between
identification and imitation: It is postulated that there
are two types of imitation -- identificatory (or introjec-
tive) and nonidentificatory (or instrumental). The former
is akin to Achad Ha'am's submissive type, the latter to the
competitive type.

Identificatory imitation is employed in the
service of introjection, and its purpose is the enhancement
of the similarity between the self (Se) and the O. The
imitator reproduces behaviors of another person to support
his belief that he and the O share some attributes.
Instrumental imitation, on the other hand, occurs when the
Se discovers that another person reaches a goal more

efficiently than he does. He reproduces the behaviors of the model because of their greater efficiency. An example of introjective imitation is the case of a small son slipping into the driver's seat in a car and imitating his father's behavior behind the wheel. An example of instrumental imitation is the case of a wealthy businessman who in his spare time takes golf lessons from a golf pro.

The present differentiation between instrumental and introjective imitations is similar to Parsons and Shils's (1951) distinction between imitation and identification. They maintain that in the former the O "provides a model for the specific pattern," while in the latter the O "serves as a model not only with respect to a specific pattern in a specific context of learning but also as a model in a generalized sense" (p. 129).

How is it possible to distinguish between instrumental and introjective imitation? At present three differentiating characteristics may be offered: (1) In instrumental imitation only task-specific behaviors are reproduced, while in introjective imitation behaviors that are not task-specific are reproduced as well. Evidence supporting this assumption is presented by Mussen and Parker (1965). They found that kindergarten-age daughters of nurturant and nonnurturant mothers did not differ in imitation of task-specific responses of their

mothers, but the first group reproduced more non-task-specific responses.[1] (2) Anybody that achieves a goal in which the Se is interested may serve as a model for instrumental imitation; in introjective imitation the model is usually a looked-up-to figure. (3) Modification of behavior learned by introjective imitation is difficult unless the model himself changes his behavior (Meacham [1968], proceeding on this assumption, dealt successfully with reading difficulties in children) or a new identificatory model is selected by the Se. In contrast, the results of instrumental imitation are much more malleable.

Bandura and Walters (1963, pp. 89-90) argue that the terms "identification" and "imitation," both refer "to the occurrence of matching responses." The foregoing distinction between introjective and instrumental imitation suggests that imitation cannot always be used as an index of identification. Introjective imitation is, indeed, employed in the service of identification, but instrumental imitation does not appear to be connected with it.

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[1] The authors proceeded on the assumption that parent's warmth and nurturance foster the child's identification with him. There is considerable research support for that assumption (Mussen & Distler, 1959, 1960; Mussen & Rutherford, 1963; Payne & Mussen, 1956).

Studies of Bandura and his associates (e.g.,
Bandura & Huston, 1961; Bandura, Ross, & Ross, 1963), in
which imitation was considered as synonymous with identifica-
tion, employed pre-school children as subjects and adults as
models. These studies, however, do not demonstrate that
imitation in other situations is always introjective (e.g.,
adult model and adult subjects). In other words, their
ecological validity is doubtful. Thus, one is forced to
conclude that in the preschool child-adult situations both
imitation and identification may refer to the same phenomena,
but there is no evidence that it is always so.

Nonimitative identification.

Kagan (1958) pointed out that a major implication
of his definition of identification as a belief is that an
individual "may react to events occurring to [a person with
whom he identified] as if they occurred to him" (p. 298).
A subsequent experiment (Kagan & Phillips, 1964) supported
this assumption. In that study children watched their
same-sex parents and strangers of the same sex compete in
a perceptual recognition task. It was found that:
(1) "the children smiled more after the parent succeeded and
the stranger failed than after parent failure and stranger
success; (2) degree of cardiac acceleration following parent
success and stranger failure was larger than under the
opposite condition" (p. 442).

As far as could be ascertained, that is the only laboratory study supporting Kagan's notion. But additional support may be found in the literature: (1) O'Toole and Dubin's (1968) field study in which 26 mothers were observed during spoon feeding of their babies. The mothers opened their mouths while the food was being delivered to the babies in 557 feeding sequences out of the total 975. Moreover, only two mothers never opened their mouths. Thus, a mother,who is assumed to identify with her baby, responded to a stimulus as if she was the baby.[2] (2) Freud's example of a mother whose identification with her daughter "can easily go so far that she herself falls in love with the man her daughter loves..." (1913, p. 15).

In more general terms it may be suggested that nonimitative identification occurs whenever "taking the role of the other" (Mead, 1934), which involves responding to cues from the standpoint of the other, is taking place.

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[2] The alternative interpretation, that the mother imitates her baby, could account for only about half of the feeding sequences during which mothers opened their mouths.