

The University of Manitoba

THE PERFORMANCE OF DIFFERENT PAIRINGS OF A-B "TYPES" IN
VERBAL AND MECHANICAL-MANUAL ORIENTED TYPES OF TASKS

by

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ABSTRACT

It has been said (Berzins, Barnes, Cohen, and Ross, 1971) that since all the findings concerning the A-B scale have been obtained from very diverse samples (either actual psychotherapists, undergraduates, college clinic patients, psychiatric inpatients...) we can expect the A-B distinction to be relatively independent of formal training in psychotherapy and to cut across a variety of situational contexts. The whole A-B dimension has come to be thought of in terms of general personality constructs.

Thus an experiment was set up in which a short interview (10 minutes) was followed by a verbal and a mechanical task. Undergraduates were used for all 3 stages of the experiment and took on the roles of Employers and Employees. It was found that the complementary pairings (AB, BA) were more productive in both types of tasks generally except for the BB pairing being a little more productive than the AB pairing in the mechanical task. As expected, the Bs were significantly more productive than the As in the mechanical task but the As were not significantly more productive than the Bs in the verbal task. It was proposed that the use of university students might have been a confounding factor in the verbal task since these Bs would be expected to be more competent in verbal usage than a random sample of Bs. It is true that this may be

the case for actual B psychotherapists also but not necessarily for B clients.

The already fairly often observed phenomenon known as "paradoxical effects" and first reported by Kemp, (1966), occurred once more. That is the Employer was less at ease generally with Employees with whom he was more effective. An interesting result was that both members of similar pairings (in AA and in BB) were more at ease than those of complementary pairings (in AB and in BA) (except for B Employees in the verbal task). It was also shown that there was generally less discrepancy between how at ease each member of the complementary pairings felt during the tasks than did the members of the similar pairings (except again for Bs in the Mechanical Task). When the similar pairings showed less discrepancy than the complementary pairings, the similar pairings were more productive than the complementary pairings.

Employers were seen as being better Interviewers by the Employees if they were of a different A-B type than themselves. When all three stages of the experiment were completed, the Employees showed that if they had to see a counsellor and knew that their Employer had been trained for the job, they would prefer seeing someone of a different A-B type than they were themselves. What is interesting here is that it was also shown that they were less at ease with someone who was of a different A-B type.

Finally, the results were interpreted in the framework of the differences found in a therapeutic situation depending on whether behavior modification or a more traditional type of verbal psychotherapy is used. It was suggested that Bs not only would make better behavior modifiers but also that Bs would be better candidates for behavior modification. However, when traditional psychotherapy is called for, complementary pairings still bring about the best results.

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CHAPTER I

INTRODUCTION

A. Historical Development of the A-B Dimension

The A-B variable has increasingly been of interest to clinical psychologists especially during the last fifteen years. The reason for this is that some clinical psychologists have become aware that it is not necessarily the technique or theoretical approach used in therapy which is most important but the pairing between the type of personality the patient and therapist both have. This is why more and more therapists are now emphasizing the need for a better matching of patients and therapists (Kiesler, 1966; Frank, 1959; Bierman, 1969; Strupp, 1957; and Gendlin, 1963) in order to bring about a more efficient treatment when doing therapy.

Pioneer studies which have brought about an awareness of this fact were done by Whitehorn and Betz in the 1940's (Betz, 1950; Whitehorn & Betz, 1954) based on clinical observations which suggested that the interpersonal relationship with the psychotherapist was the crucial factor in effecting favorable change with schizophrenic patients. These first studies showed that the therapists who were differentially successful with schizophrenics were equally effective with non-schizophrenics. Retrospective analysis of clinical notes and treatment records showed that they had different clinical

styles. The A-B variable was, however, not introduced before 1954 (Whitehorn & Betz, 1954). The As appeared to behave in an active and experiential manner whereas the Bs tended to be passive or didactic in their conduct of therapy. This is why Whitehorn and Betz stressed the importance of active, personal participation.

Until 1956, A-B status had been defined in terms of patient improvement rate but in their 1956 study, Betz and Whitehorn also reported the results of administering the Strong Vocational Interest Blank (SVIB) to 35 therapists, some of whom had been in the 1954 and 1956 studies. There were eight occupational profiles on which the As and the Bs differed significantly. The As scored high on the Lawyer and CPA Scales and low on the Printer and Mathematics-Physical Science Teacher Scales whereas Bs showed the opposite pattern on these four scales. The Bs also scored higher than the As on the Osteopath, Carpenter, Industrial Arts Teacher and Vocational Agriculture Teacher Scales. Both scored high on three vocations: Physician, Psychologist, and Public Administrator.

An important study was done by McNair, Callahan, and Lorr in 1962 examining A-B therapist differences with non-schizophrenics. The patients were matched for a number of things including education and socioeconomic status. After both 4 months and 12 months of therapy, Bs reported greater changes among their patients in the "improved" direction

than did As. These results complemented the major findings of Whitehorn and Betz. Things seemed to be falling neatly into place. "A" therapists were now considered as being more successful in psychotherapy with schizophrenic patients than "B" therapists, while Bs as obtaining a better outcome with neurotic patients than As.

Several studies followed which aimed at finding some of the specific variables present in the As and the Bs which could account for the different outcomes. One of these was conducted by Pollack and Kiev (1963) who used the same male staff members of the Phipps Clinic as Whitehorn and Betz. They found that A and B therapists differed significantly in spatial orientation as measured by the Witkin Rod and Frame Task (RFT). The Bs were significantly more field independent and less variable than As. Shows and Carson (1965) replicated this study using college students and they had the same results.

Stoler (1966) characterized extreme field independents as "cold, distant from others, unaware of social stimulus value, concerned with philosophical problems, individualistic, and strong". Silverman (1967) in his review of research on field independence and field dependence came up with a description of the field independent male as having relatively constant "internal" guidelines for reacting to others and for self-definition. He also described him as being less affectionate, less interested in other people, and more

involved in cognitive pursuits. He approaches problems in a more intellectual and impersonalized way and is less attentive to subtle cues (e.g., he has poorer incidental memory for faces and words with social connotations). However, a field independent person has greater capacity for dealing with nonsocial situations involved with recalling task-related material. Silverman also notes that in sensory deprivation experiments, "moderate" field independents (which As characteristically are) are found to "yield to the kinds of perceptual organization changes that prolonged sensory isolation induces". On the other hand, strongly field independents (which Bs usually are) are "more resistive to the perceptual and cognitive regression and depersonalization brought about by reduced sensory input". Instead the field independents describe "affective and bodily sensations in objective terms, and are less receptive to task-irrelevant cues and therefore to low-intensity input in subliminal stimulation studies. They show lower responsiveness to more ambiguous, more personal intuitive cues".

From Silverman's review, As are seen as being similar to schizophrenics in the following respects, "a) sensitivity to low-intensity sensory stimulation b) broad range of attentiveness to irrelevant stimuli c) readiness to perceive unique relationships between various images, ideas, and percepts, and d) less frequently articulated perceptual responses". Thus, even if As are seen as less similar to

schizophrenics than are Bs in most respects, As nevertheless seem to share some important aspects with schizophrenics. Razin (1971) remarks that Silverman's recognition of the bases of communication between As and schizophrenics is important both in itself and in suggesting verbal and non-verbal therapist behavior, particularly the communication of perception sharing which is crucial to therapeutic effectiveness.

Following the Whitehorn and Betz studies (1954, 1956, 1960), A therapists were seen as more problem-solving, less mechanical, more collaborative, and neither authoritarian nor permissive. These therapists would expect self-respectful participation and evoke it. Betz (1967) pointed out that B therapists tended to be either passive or instructional in their interactions with schizophrenic patients whereas the A therapists were actively and experientially involved with their patients. The As are not regulative or coercive and are thus more acceptable to the schizophrenic who (as seen by Whitehorn & Betz, 1960) is usually resentful toward authority and feels psychologically boxed in. On the other hand, Whitehorn and Betz (1960) see the Bs as tending to see things in black and white, right or wrong terms. They tend to see patients as wayward and in need of correction, a factor which may well alienate patients. The schizophrenic patient sees the values of responsible self-determination more rewarded in A therapists than those of obedience. The

As are perceptive of individualistic inner experiences. In Bs, the patient is likely to see an emphasis on value systems weighted toward conformity and deference, rigidity, mechanicalness, rule-of-thumb approaches, and precision that does not lead to the development of self-trust. The As tend to expect and respect spontaneity and therefore tend to evoke social participation.

Carson and Harden (1964) found that A interviewers paired with distrustful, unfriendly ("schizoid") interviewees, and B interviewers paired with trusting, friendly ("neurotic") interviewees, were more "effective" (gathered more personal information) than in opposite pairings. Interviewees from the effective pairs saw their interviewers as more dominant. Moreover, B interviewers (contrary to what was reported by Betz in 1960) were seen by both types of interviewees as more sympathetic, warm, gentle, and sensitive, and less suspicious. Betz (1967) pointed out that As and Bs may have differential sensitivity to "avoidance" (schizoid) behavior and to "turning-against-self" (neurotic) behavior, most likely yielding optimal degrees of "fit" between such therapist and patient characteristics.

Berzins, et al (1969) using as patients 68 consecutive males applying to the Indiana University Health Service, found a strong confirmation of an A-TAS (Turning Against Self) association among patients and a much weaker B-AVOS (Avoidance of Others) association. They attributed the

latter finding to the use of a population which was too homogeneous for the heterogeneous set of (AVOS) symptoms. They concluded from their study that As see themselves as intrapunitive or depressed in stress (TAS), while Bs appear "masculine" and attempt "solitary mastery" of difficulties (AVOS). The Campbell et al. study (1968) also described A occupations as verbally oriented and more intellectual whereas the B occupations belong to rough-and-ready, out-door doers, who are practical, straightforward, and nonintellectual nonthinkers. Dublin, Elton, and Berzins (1969) supported these findings when they used undergraduates' responses on a personality and aptitude test battery. The As showed higher femininity and verbal aptitude and low natural science aptitude.

A recent study by Berzins, Barnes, Cohen, and Ross (1971) using Jackson's multidimensional Personality Research Form, assessed the personality dimensions involved in the A-B distinction among undergraduate males. Multiple discriminant analyses and factor analyses strongly supported the hypothesis that A-B status is explicable in personality terms. The personality variables differentiating As and Bs revolved around the notion of cultural "masculinity-femininity". Relative to controls but especially to As, B-type Ss appeared high in "masculine adequacy". They were dominant, daring, socially poised, and "open" to various experiences. The A-type Ss, in contrast, appeared cautious, inhibited,

submissive, and restricted in response to various sensory and cognitive inputs.

Using undergraduate students as therapists, and video-taped enactments of intro-punitive-neurotic and schizoid patient prototypes, Seidman (1971) studied the three conditions considered crucial by client-centered therapists, namely respect, empathic understanding, and congruence. He found that the amount of respect and empathy communicated as well as the response duration of S-therapists was a joint function of their A-B status and the patient with whom they interacted. There was more respect and empathy and longer responses with complementary dyads (AB or BA) than with similar dyads (AA or BB). The A and B S-therapists failed however to show any difference in congruence (genuineness) depending on the patient with whom they interacted. It would seem that there is a greater amount of activity (indicated by length of responses) and affection (indicated by empathy and respect) in the complementary or "compatible" dyads.

The approach-avoidance dimension is often suggested as an important factor in the therapist and patient pairing. Seidman suggested that along with response time, respect and empathic understanding may be fruitfully conceptualized as attributes of an approach-avoidance dimension. In his 1971 study the stress reactions of A S-therapists were also characterized as more approaching, while Bs were characterized

as more avoidant, similar to prior investigations (Berzins et al., 1969; Sandler, 1965). Seidman remarks that taken together these notions imply that complementary behavioral styles may interact most effectively. An oversimplified description might be that the approaching A therapist works most effectively with the withdrawn schizophrenic (Swensen, 1967), while the avoidant B therapist is at his best with the verbally productive, approaching introjective neurotic (Berzins et al., 1969). A reason for this might be that the A (more approaching) and B (less approaching) therapist serve as more appropriate models for the withdrawn schizoid and the approaching introjective-neurotic patients, respectively. Rosenthal (1955) found that patients change in the direction of becoming more similar to their therapists in attitudes and values, as well as other dimensions.

Kemp and Carson (1967), using psychiatric residents and brief written descriptions of two "patients whose symptoms were assumed to represent typical neurotic or schizoid complaints", found that As paired with schizoid and Bs with neurotic rated themselves as more uncomfortable than did therapists in the opposite pairings. Similarly, Kemp (1966) found that As who were paired with a schizoid patient in a quasi-therapeutic situation and Bs who were paired with an introjective neurotic patient felt less comfortable and reported greater difficulty in selecting therapeutic interventions. These results known as "paradoxical effects"

would suggest that therapists are more uncomfortable with patients with whom they would be more effective. This is an hypothesis nevertheless, which is incongruent with most theoretical formulations (McNair, Callahan, and Lorr, 1962; Berzins and Seidman, 1968).

Segal (1970), using male graduate students in clinical psychology as therapists and patients considered as "intra-punitive" by these therapists, found that Bs made fewer negative comments and were more facilitative and encouraging of self-exploration than As. Bednar and Mobley (1971) also found that when As are paired with schizophrenics and Bs with neurotics, a greater depth of self-exploration is brought about in the patient. When As responded helpfully to the schizoid patient and Bs responded to the neurotic patient, relative to the opposite pairings, Berzins and Seidman (1968) found that they emitted responses characterized not only by greater length but also by declarative rather than interrogatory form and by more positive social-emotional reactions.

It seems appropriate at this point to present a brief summary of the major characteristics of As and of Bs.

As	Bs
1- Appeared to behave in an active and experiential manner. (Whitehorn and Betz, 1954)	- Tended to be passive or didactic in their conduct of therapy.
2- Scored high on the Lawyer and CPA Scales of the SVIB and low on	- Scored low on Lawyer and CPA Scales but high on Printer and Mathematics-

the Printer and Mathematics-
Physical Science Teacher
Scales.

Physical Science Teacher
Scales.
Scored higher than As on
the Osteopath, Carpenter,
Industrial Arts Teacher,
and Vocational Agriculture
Teacher Scales.

(Betz and Whitehorn, 1956)

- 3- As were more successful in doing therapy with schizophrenics.
(Betz, 1967; Carson, 1967)
- Bs were more successful with nonschizophrenic patients.
(McNair, Callahan, and Lorr, 1962)
- 4- As are not regulative or coercive and are thus more acceptable to the schizophrenic, whom Whitehorn and Betz see as resentful toward authority and psychologically boxed in.
(Whitehorn and Betz, 1960)
- Bs tend to see things in black and white, right or wrong terms; they see patients as wayward, in need of correction, and this alienates schizophrenic patients.
- 5- As are seen as possessing a problem-solving approach, including genuineness, respect, sympathetic independence, perceptive attunement to the patient's inner experience, and expectation of responsible self-determination. They tend to expect and respect spontaneity and therefore tend to evoke social participation.
(Betz, 1967)
- Bs are described as mechanical, passively permissive or authoritatively instructive, concerned with symptom reduction rather than the use of assets, and solicitous of deference and conformity.
- 6- As are moderate field independents.
(Pollack and Kiev, 1963)
- Bs are extreme field independents.
- 7- As see themselves as intrapunitive or depressed in stress (TAS).
(Berzins et al., 1969)
- Bs appear "masculine" and attempt "solitary mastery" of difficulties (AVOS).
- 8- a) The A occupations from the SVIB have been described as
- B occupations belong to rough-and-ready, out-door doers, who are practical, straightforward,

verbally oriented and nonintellectual non-
and more intellectual. thinkers.
(Campbell et al., 1968)

b) As showed higher
feminity and verbal
aptitude and low natural
science aptitude
(Dublin, Elton, and
Berzins, 1969)

9- As appeared cautious,
inhibited, submissive, and
restricted in response to
various sensory and cogni-
tive inputs.

- Bs are dominant, daring,
socially poised, and "open"
to various experiences.

(Berzins, Barnes, Cohen, and Ross, 1971)

B. Present Research

In their 1971 study, Berzins et al. assert that since all these findings using the A-B scale have been obtained from samples as diverse as practicing psychotherapists, undergraduates, college clinic patients, and psychiatric inpatients, one is somewhat justified in expecting the A-B distinction to be relatively independent of formal training in psychotherapy, to cut across a variety of situational contexts, and to be explicable in terms of general personality constructs. This has brought us to consider the use of the A-B scale in determining the best pairing not only in terms of therapist and patients but also of employers, instructors, or foremen, with respective employees such that the employee becomes most productive or performs at his best. In a previous unpublished experiment (de Rocquigny, 1971) using only a verbal task, the As performed better than the Bs. Complementary dyads were nevertheless more productive than similar dyads. The most productive pairing with the verbal task used for the experiment was the BA dyad. It was also found that the instructor in the BA dyad used more positive reinforcers and less negative reinforcers than the instructor in all other dyads. The instructors of the complementary dyads were also more at ease than the instructors of similar dyads. An interesting reversal, however, was that the subjects in the complementary dyads were less at ease than the subjects in similar dyads.

What was proposed in this experiment was to look at the productivity of the S-employees under the different types of A and B pairings in two different tasks. One of the tasks was verbally oriented and the other was mechanically or manually oriented. It was expected that the BA pairing would be the most efficient or the most productive pairing in the verbal task but that the AB pairing would produce the best results in the mechanical-manual task. Bs were also expected to do better than As in the mechanical task and As to do better than Bs in the verbal tasks. The degree of comfortableness or "at ease" in the different pairings was also to be examined by way of their ratings on a questionnaire. The questionnaire would also help to evaluate other aspects of the relationship, such as degree of authoritarianism of the S-employer and interpersonal attraction between the S-employer and S-employee.

It should be noted that the A-B scale does not measure either verbal or mechanical ability but that it gives the interest orientation in terms of either mechanical, technical-manual activities or more intellectual or verbally oriented activities. That is, the scale shows either an interest or a non-interest in mechanical-manual activities. The Bs appear as rough out-door and adventurous types with interests in practical things whereas the As are not so much interested in this but rather in relatively more intellectual things. It was assumed that in most cases one's interests will go

hand in hand with one's best abilities or vice versa. If someone has mechanical interests it is usual for them to develop their mechanical ability because they will get involved with mechanical things. If someone is not interested in these things they will probably develop other abilities related to intellectual aspects of life such as a greater mastery of their language through readings in areas such as literature, philosophy, history, and sociology. The development of a person's approach or set, in terms of problem solving or the development of how he relates with other people, is affected by his interests and therefore by the type of activities in which he invests most of his time.

In dealing with mechanical-manual ability one can expect to find certain factors which will probably affect one's performance on such tasks. Unfortunately it seems as though not much research has been done on this type of ability in recent years. Most of the work done in that area appears in the literature between 1930 and 1950. In an early study done by Rusu (1932) a difference was found between technical ability and practical intelligence. In spite of many relations between them, these two abilities were considered to be to a great extent different. Technical ability included especially visualization (perception of forms, relations between them, etc...) and dexterity in hand manipulation, while practical intelligence was related to more abstract functions.

Wittenhorn's (1945) study of the nature of mechanical ability yielded six meaningful definitive factors: spatial visualization, stereotyped movement, scholastic ability, manual dexterity, perceptual speed, and steadiness. On the other hand, Maier and Burke (1966) studied the availability of "functions" (the specific uses particular objects serve in the solution of a problem) in problem solving. They arrived at the conclusion that the ability to utilize experience rather than merely to have had it becomes a crucial factor in problem solving. Superior problem solvers seem better able to overcome sets, or directions, and hence are able to find greater resources in their past experiences than are less able problem solvers, who have the same stored knowledge.

In any Employer-Employee relationship essentially the same factors seem to be operating as in a therapy situation or a therapist-patient relationship. In both cases problem-solving behavior or some sort of performance is required. The Employer or Boss as well as the therapist (at least initially) can be looked upon as having authority in the situation. They are the ones who decide on what the contingencies will be in terms of what has to be done and they are the ones who will give reinforcements in terms of encouragement, help, payoffs and so forth. In both cases the Employer and therapist are usually looked upon by the employee or by the patient respectively as having more

knowledge of the task at hand. Both of them are therefore a source of help. After examining more closely some of the factors operating in the best type of pairings of therapist and patient in terms of the A-B scale, it is possible to look at other situations which outwardly would not be characterized as a classical therapy session but which nevertheless require or bring about problem-solving behavior or productivity of some kind. However it should be emphasized that the major link between this analogue study (no matter what the task may be) and real life therapy is the relationship between the two individuals.

Since we seem to be dealing with essentially two types of behaviors, a manual-mechanical orientation and a more verbal orientation, we can set up two different types of tasks where one of them is mechanically-manually oriented and the other one is verbally oriented. This not only permits us to see what happens in everyday jobs where productivity is required of a person working for someone else when that person either has or does not have mechanical-manual interests, but also helps us determine what some of the factors operating in a therapy situation might be.

From the majority of the studies done with the A-B "types" it seems that when you have complementary pairings you get the best results in therapy and you also get better relationships between the therapist and patient. It seems that in such cases the patient becomes better at solving

his problems, i.e., he becomes more productive.

The studies done on technical or mechanical-manual ability also differentiate between technical or mechanical-manual ability and practical intelligence which is related to more abstract functions. Stereotyped movement, spatial visualization, manual dexterity, perceptual speed and steadiness seem to be the most important factors in mechanical ability. You would therefore expect a B to perform better than an A on activities requiring these abilities. On the basis of complementarity producing better results in therapy, you would also expect an A-B pairing to be most productive in a task where such abilities are required.

It also seems apparent from studies on mechanical ability (Duncker, 1939; Maier and Burke, 1966) that a person's set or approach to a problem is influenced by his past experiences. Thus in any type of task a person is bound to be affected either positively or negatively by his past experiences depending on the type of task and on his type of past experiences. A therapist who has a fairly large degree of mechanical interests and experiences is bound to be affected in his approach in guiding the patient in the solving of his problems and in becoming more productive. There is a sort of general set which is established in the person's attitude towards life and this is also reflected in his relationship with the patient.

Several studies (Berzins and Seidman, 1969; Seidman, 1971) using the A-B variable have also demonstrated that therapists in complementary pairings will emit longer responses. These responses are usually made to a patient talking about his problems or complaints. Thus the therapist's responses become a measure of his "helping" behavior, they become a measure of his own activity or productivity in bringing about a solution to certain problems. Not only is there a greater amount of activity on the part of the therapist in complementary dyads, but also of affection. The same would be expected in situations such as the Employer (or Boss) -Employee relationship where outwardly it may differ from a classical therapy session but which nevertheless requires some sort of problem-solving behavior or productivity. Thus you would expect not only a better relationship in complementary dyads but also a greater amount of work being done.

C. The Problem Redefined

The general purpose of this study was to look at the performance of the different A-B pairings on two different types of tasks, a verbally oriented task and a mechanically-manually oriented task which characteristically should favor one of the two A-B "types" depending on which task was required. In all the studies done so far the verbal aspect was emphasized and therefore it was thought that by bringing in something more directly or outwardly mechanical it would

be possible to clarify some of the interactions taking place and under what circumstances. In an attempt at making things more specifically "black and white" it was hoped that conclusions could be drawn with more certainty. It should be remembered that the performance in these tasks was similar to the outcome of therapy where a patient listens to what a therapist has to say and will either accept his directions or advice and go along with what he says, or will only partially listen and cooperate. How the employee views his boss and the results of his perceptions on his performance is probably very similar to how a patient views his therapist and how the patient's perceptions influence the results of therapy.

From the studies just reviewed it was hypothesized that:

- 1) The BA pairing would be the most productive pairing in the verbal task.
- 2) The AB pairing would be the most productive pairing in the mechanical-manual task.
- 3) The complementary pairings (AB, BA) would be more productive than the similar pairings (AA, BB).
- 4) The As would be more productive than the Bs in the verbal task.
- 5) The Bs would be more productive than the As in the mechanical-manual task.
- 6) The complementary pairings would be more at ease than the similar pairings.

If the BA pairing brings about the best performance in the verbal task this would suggest that Bs are possibly more effective in therapy with As than they are with Bs.

If the AB pairing provides the best performance in the mechanical-manual task this would also suggest that As are more effective in therapy with Bs than they are with As.

If the complementary pairings compared to the similar pairings prove to be more productive in terms of their performance on both tasks, this would be a finding which would support the belief in the importance of pairing therapists and patients appropriately. It would be somewhat parallel to the idea that when doing therapy A-therapists should be paired with schizophrenics and B-therapists with neurotics. The only difference here is that instead of dealing strictly with schizophrenics and neurotics we have As and Bs.

If the As are more productive than the Bs in the verbal task this could be because the As are more verbally oriented. You would then expect the As to use verbalization as a major tool in doing therapy.

If Bs are more productive than As in the mechanical-manual task, this would support the notion that Bs are more likely to have a mechanical induced set when doing therapy. They will tend to be less verbal in their therapy and stress the practical or pragmatic aspects of problem-solving.

If the complementary pairings are indeed more at ease than the similar pairings and the complementary pairings are more productive than the similar pairings, this would support the notion that a therapist is more effective in

a therapy situation in which he is at ease. One must not forget however that for such a case the opposite could also be true, the more effective a therapist is when treating a patient the more at ease is he likely to be with that person.

CHAPTER II

METHOD

A. Interviewer-Employer and Interviewee-Employee Samples

Subjects were 48 As and 48 Bs selected from the Subject Pool of undergraduate students taking "Introduction to Psychology" at the University of Manitoba. Half of the As and half of the Bs served as Interviewers and Employers and the other half as Interviewees and Employees. These students were volunteers and were given credit for partial fulfillment of a course requirement.

The UK-19 A-B Scale was filled out by 649 male students (Total Subject Pool) in order to determine their score and only those in the upper and lower quartiles were used. This Scale consists of a 19-item version of Kemp's (1964) 31-item modification of the Whitehorn-Betz A-B scale. It is made up of 14 items from the SVIB and 5 items from the MMPI. The As were defined as those who scored high (13 and above) on the scale and the Bs were defined as those who scored low (7 and below). The mean of the entire group was 9.77 with a standard deviation of 3.22. The Total Subject Pool consisted of 132 As with a mean of 14.25 and a standard deviation of 1.36. The As made up 20.3% of the group. There were 152 Bs and they made up 23.4% of the entire group. The Bs had a mean of 5.50 and a standard deviation

of 2.22. The ABs, which included all the scores between 8 and 12 made up the rest of the group which totalled 365 (56.2% of the entire group). The mean and standard deviation of the ABs were 9.94 and 1.13 respectively. Only the As and Bs were selected to be subjects. Sign-up booklets with a list of the names of all the As and Bs were circulated in the classrooms and anyone with his name on the list could sign up for the experiment. This was carried out until enough students had volunteered.

B. Procedure

There were 48 different sessions lasting one hour each. Each session consisted of the interaction between two students, one acting as Interviewer and then Employer and the other one as Interviewee and then Employee. There were 4 different types of pairings, each of which was represented 12 times. The possible pairings were: AA, AB, BB, BA. Thus the experimental design was:

		Interviewee-Employee	
		A	B
Interviewer- Employer	A	AA (12)	AB (12)
	B	BA (12)	BB (12)

The Interviewer-Employer was seen alone approximately 10 minutes by the Experimenter at the beginning of the session and his role was explained to him. The Experimenter

read the following Instructions to him.

General Instructions Given to the Interviewer

1. "You are going to be in charge of the situation."
2. "You will have 3 things to do."
 - 1) Interview the person.
 - 2) Have him perform a verbally oriented task.
 - 3) Have him perform a mechanically or manually oriented task.
3. "When the person comes in you should do the following things." (The Interviewer was given a sheet with the following on it.)

When the person comes in:

- Greet the person
- Introduce yourself and ask him to sit down
- Let him know you are also a student and have been asked to interview him and to give him instructions to perform two relatively short tasks.

4. "The Interview will be as follows."

"Your job is to conduct the interview the way you want to but to try and cover five areas of the person's life. These areas are specified on this sheet (which was handed to him), as well as a suggested introduction to the interview. You will have access to this outline for the interview. Let me go over it with you." (The Experimenter read what was on the sheet; it is given below.)

Interview

"You should start by saying something like this:
 'I would like to interview you before we go on to 2 different tasks which I would like you to perform.'"

"You should cover the following areas during the Interview and anything else you might want to."

1. Prospective Career

For example: What degree or degrees are you aiming for? What kind of work would you like to do?

2. Interests

For example: What are your major interests and hobbies?

3. Holidays and Vacations

For example: Can you talk a little bit about your holidays (past and future).

4. View of life

For example: What is your view of life (philosophy of life)? What does life mean to you?

5. Problems

For example: What do you feel are your biggest problems right now? (As a university student, at home, etc...)

N.B. The Interview should last approximately 10 minutes.

5. "Once the Interview is over I will give you both a very short questionnaire to answer (4 questions) (See Appendix A). It should not take much more than a minute to answer it."

6. "You should then read this to him" (he was given a sheet with the following on it):

Once the first questionnaire has been filled out you should read this to him before going on to the first task.

I will give you some instructions regarding two different types of tasks. Each task is made up of 5

trials. The objective of this is to see if you will perform better or become more efficient as you are given more trials. I would like you to cooperate with me and perform as well as you can.

7. "Then you are to instruct the person and guide him in performing the following task. You shall have to give these instructions to him (handed him sheet). Let me read them to you to make sure you understand what the task entails."

"You should start by saying something like this to the person: 'Now I would like you to perform this task for me.'"

Instructions For Verbal Task:

- 1) You will be given 45 seconds to write down as many words as you can. Each word has to start with the same letter and must be made up of no less than 3 letters. For example if you were given the letter D, you could write down words such as Dog, Down, Dig, Done, etc...)
- 2) You will be told when 45 seconds are up and have to turn your sheet over. You will then be given a break of 15 seconds.
- 3) Using a separate sheet on top of which you will write "Recall Sheet" you will be given 30 seconds to write down the words you remember once the break is over.

- 4) Your score will then be found immediately. You will simply have to count the number of words correctly recalled.
- 5) There will be five trials, each trial being based on words starting with one of the vowels in this order: Trial One-A, Trial Two-E, Trial Three-I, Trial Four-O, Trial Five-U.
- 6) Your final score will be the total number of words recalled correctly on all five trials.
- 7) Any questions?

"Now do you understand? As Instructor and Boss you will have to record the scores for each trial on this sheet of paper (Showed him Score Sheet) (See Appendix B). You will also use this stop-watch (showed him how it worked)."

"You will then both be given another questionnaire to fill out (6 questions) (See Appendix C). Following this you will have to instruct the person and guide him in performing a second task. Here are the Instructions (handed sheet to him) which again I shall read to you to make sure you understand them."

"You should start by saying something like this to the person: 'Now I would like you to perform this task for me.'"

Instructions For Mechanical Task:

This task will be broken up in 5 different trials. There will be a 15 second break between each trial.

Trial one - When I say "Go ahead" I want you to form 4 different groups of washers, each group containing washers only of the same size. Your score will consist of the number of washers correctly sorted in 45 seconds. Remember that all four sizes have to be sorted in order to receive a point. Ready. Begin.

Trial two - I want you to make as many units as possible such as this (demonstrate to him different units) consisting of the correct size of washer and nut. Your score will consist of the number of units assembled in 45 seconds. Ready. Begin.

Trial three-This trial will require that you unthread nuts. Your score will be equal to the number of nuts unthreaded in 45 seconds. Ready. Begin.

Trial four-I would now like you to unscrew completely as many screws as you can from this piece of 2" x 4". You will have 45 seconds. Ready. Begin.

Trial five-This trial will consist of driving in completely as many 1 1/2 inch nails as you can in this piece of wood in 45 seconds. Ready. Begin.

N.B. Please do not read the instructions for trial two before trial one has been completed or the instructions for trial three before trial two has been completed and so forth.

"Do you understand?"

"As Instructor and Boss you also have to record the scores for each trial on this score sheet. You will be using the stop-watch. When the task is completed you will both be given a questionnaire (6 questions) (See Appendix D). You will also be getting another questionnaire following that one (See Appendix E)."

"N.B. You may talk to him during both tasks, give him encouragement or whatever you have to say but you are not allowed to help him directly such as sorting washers or unthreading nuts."

It should be noted that the Verbal task and the Mechanical task were given in a different order so that each type of pairing got an even number of each order.

Once the Instructions had been given to the Employer, the Experimenter left the room to get the Employee saying that he should be back in three minutes or so. Before bringing the S-Employee in the experimental room he was given a sheet to read (See Appendix F) which had as its purpose to stimulate his motivation. It is obvious that a person who is hurting psychologically and therefore seeks help and an employee who needs financial security, have a somewhat greater motivation in their performance than is a university student who knows he will get credit for an experiment no matter how he performs. Thus the sheet was to attempt to have everyone come in on a somewhat equal level

of motivation. He was asked to cooperate and perform as well as he could and to try to get something out of the whole thing. He was asked to imagine himself in a situation where his performance would be important for his future in terms of either advancement or simply happiness or satisfaction.

CHAPTER III

RESULTS

A. How the data was analyzed

The experimental design was the following.

		Employee	
		A	B
Employer (Boss)	A	I V M and I M V	I V M and I M V
	B	I V M and I M V	I V M and I M V

The data to be analyzed consisted of:

1. The performance of As on the Verbal and Mechanical-Manual tasks.
2. The performance of Bs on the Verbal and Mechanical-Manual tasks.
3. The total performance (Verbal plus Mechanical-Manual scores) of each type of Subjects as well as their performance on the two tasks separately.
4. The performance resulting from the different pairings.
5. The questionnaire ratings to determine if the As and the Bs differed and if so under what pairings and in which type of tasks.

Several 2 x 2 analyses of variance (fixed effects) were computed and t-tests were performed.

The Specific Hypotheses were tested by:

- 1) Looking at the scores on the Verbal task for all four types of pairings (AA, BB, AB, BA) to see if the BA pairing did significantly better on the Verbal task. In order to determine this, t-tests were performed.
- 2) Looking at the scores on the Mechanical-Manual task for all four different types of pairings (AA, BB, AB, BA) to see if the AB pairing did significantly better on the Mechanical-Manual task. Here again t-tests were performed.
- 3) Looking at the combined scores of both tasks (Verbal and Mechanical-Manual) when using complementary pairings (AB, BA) as opposed to similar pairings (AA, BB) to see if the complementary pairings performed significantly better.

An analysis of variance was followed up by t-tests.

- 4) Looking at the scores on the Verbal task when using the four different types of pairings (AA, BB, AB, BA) to see if the A-employees (thus AA and BA pairings) did significantly better than the B employees (BB, AB). A t-test was used for this.

- 5) Looking at the scores in the Mechanical-Manual task when using the four different types of pairings (AA, BB, AB, BA) to see if the B employees (BB, AB) did significantly better than the As (AA, BA) for this task.

A t-test was performed in order to determine this.

- 6) Looking at the ratings on the questionnaires to see if the complementary pairings (AB, BA) were significantly more at ease than the similar pairings (AA, BB).

Analyses of variance and t-tests were computed on these ratings.

A 2 x 2 analysis of variance (fixed effects) was performed to test for interaction between the different pairings and the type of task by using the scores of the verbal and mechanical task for each pairing as a dependent measure. This type of analysis was also done on a few of the questionnaire ratings, namely on how the Employees rated their Employers during the Interview, as well as to how the Employers would consider having their Employee for a task similar to the Mechanical Task.

A 2 x 2 analysis of variance was also computed for the degree of comfortableness of the Employers in different pairings using the type of task performed as the second independent measure. This was done to test for interaction effects between type of pairings and task performed. The

same type of analysis of variance was computed for the Employees.

Otherwise t-tests were performed on the scores of the tasks to see if there were any significant differences between particular pairings. T-tests were also performed on the other questionnaire ratings.

B. Productivity of pairings

TABLE I

The Scores obtained by the different pairings on the Verbal and Mechanical Tasks.

	AA	BB	AB	BA
VERBAL	334	332	359	360
MECHANICAL	216	286 ⁽¹⁾	276 ⁽¹⁾	248
TOTAL	550	618	635	608

(1) Both AB and BB are significantly more productive than AA ($p < .025$) in the Mechanical Task.

TABLE 2

Analysis of Variance for the Scores on the Verbal and Mechanical Tasks.

Source	SS	df	MS	F
Pairings	114.6973	3	38.2324	1.02
Tasks	1239.8381	1	1239.8381	33.13 ⁽¹⁾
Pairings x Tasks	108.7061	3	36.2354	0.97
Within Cells	3293.2617	88	37.4234	
Error Due To Approx.	-0.0112			
Total	4756.4922	95		

(1) The type of task performed is a significant factor in determining the score ($p < .001$).

As can be seen from Table 2, when a grand analysis of the scores on both tasks is computed it does not give us a significant interaction effect between pairings and task. It does however show that the type of task being performed is significant in determining whether or not the pairing will get a high score or a low score since all pairings got significantly higher scores on the Verbal Task than on the Mechanical Task.

1. Performance on Verbal Task

Looking back at Table I we can see that the BA pairing turned out to be, as it was hypothesized, the most productive pairing in the verbal task. It was however not significantly more productive than the AB pairing for such a task. The BA pairing's performance was, although not statistically different ($p < .20$), nevertheless moderately better than that of the AA pairing and that of the BB pairing in terms of absolute scores.

It was hypothesized that the complementary pairings (AB, BA) would be more productive than the similar pairings (AA, BB). This hypothesis was not supported by a t value having a low level of probability but there was a trend in that direction ($t = 1.243$, $df = 46$, $p < .15$).

As expected, the BB pairing did bring about the poorest performance in this type of task even though it was not significantly different than that of the AA pairing which accounted for the second lowest performance.

2. Performance on Mechanical Task

It had been hypothesized that the AB pairing would be the most productive in this kind of task. However as can be seen from Table I, it was only the second most productive pairing. The BB pairing brought about the best performance here but it is not significantly better than the performance

of the AB pairing. The AB pairing is nevertheless significantly more productive than the AA pairing ($t = 2.02$, $df = 22$, $p < .025$) and also relatively more productive than the BA pairing although not statistically so ($t = 1.153$, $df = 22$, $p < .15$).

The complementary pairings (BA and AB) were more productive than similar pairings (BB and AA) in terms of absolute raw scores but were not statistically different ($t = .529$, $df = 46$, $p < .30$). As expected, the Bs were more productive than the As in this type of task ($t = 2.562$, $df = 46$, $p < .01$). And as expected, the AA pairing provided the worst performance.

3. Performance based on Total Scores

The complementary pairings proved to be more productive when taking the overall performance. This is what had been hypothesized. It must be noted however that it was not a highly significant difference ($t = 1.105$, $df = 46$, $p < .15$). It should also be noted that the Bs performed better than the As when comparing their total scores ($t = 1.334$, $df = 46$, $p < .10$). The B Employers also turned out to be slightly more effective than were the A Employers but this difference was not significant ($t = .597$, $df = 46$, $p < .30$).

C. Questionnaire Ratings

All ratings for all questionnaires were made on a 5 point scale with 1 being Very Low and 5 Very High. Thus an average score would be 36 since there were 12 pairs for each type of pairing.

TABLE 3

Ratings made by Employers after Interview.

	AA	BB	AB	BA
1. How would you rate him as an interviewee?	41	41	41	42
		(1)		(1)
2. How would you rate yourself as an interviewer?	31	33	29	34
3. How much at ease was he during the interview?	44	44	42	42
4. How much at ease were you during the interview?	36	39	34	39

(1) B Employers rated themselves more highly as Interviewers than A Employers ($p < .01$).

TABLE 4

Ratings made by Employees after Interview.

	AA	BB	AB	BA
1. How would you rate him as an interviewer?	34	37	43	41
2. How would you rate your present performance as interviewee (How well you cooperated in giving information about yourself to the interviewer)?	38	41	38	39
3. How much at ease was he during the interview?	32	39	39	44
4. How much at ease were you during the interview?	38	39	35	39

- (1) Employees of Complementary pairings rated their Employers much better ($p < .001$).
- (2) A Employees in complementary pairings saw their Employers as being more at ease as Interviewers than in similar pairings ($p < .001$).

TABLE 5

Analysis of Variance of how Employees rated their Employers as Interviewers.

Source	SS	df	MS	F
Employer	0.0209	1	0.0209	0.07
Employee	0.5209	1	0.5209	1.85 (N.S.) (p < .2
Employer x Employee	3.5208	1	3.5208	12.48 ⁽¹⁾
Within Cells	12.4167	44	0.2822	
Error Due To Approx.	-0.0001			
Total	16.4792	47		

(1) Significant interaction ($p < .001$) between type of Employer and type of Employee during interview.

1. Ratings by Employees after Interview

As can be seen from the scores in Table 4 and the Analysis of Variance in Table 5, the Employees in complementary pairings rated the Employer as an Interviewer much better than those in similar pairings ($p < .001$).

It was found that B Employees rated their Employers as being better Interviewers than did the A Employees although this was not highly significant ($t = 1.223$, $df = 46$, $p < .15$). B Employees however, rated their own performance during the

interview better when they had an Employer of the same A-B type but this also was not highly significant ($t = 1.121$, $df = 22$, $p < .15$).

Another factor which was quite apparent was that A Employees in complementary pairings saw their Employers as being much more at ease as Interviewers than in similar pairings ($t = 3.796$, $df = 22$, $p < .001$). Thus they felt that A Employers were not as much at ease when interviewing them as were the B Employers. On the other hand, the B Employees saw no difference in how at ease the A and B Employers were when interviewing them.

It was shown that B Employees in similar pairings (BB) also tended to be more at ease than those in complementary pairings (AB) when being interviewed ($t = .925$, $df = 22$, $p < .20$). This was also the type of pairing in which the Employees rated their performance during the interview better. It is interesting that the A Employees show exactly the opposite trend for both of these ratings, although it is a very slight opposite trend. Thus the A Employee, after being interviewed, rated his own performance better when paired with a B Employer and also was more at ease with the B Employer.

2. Questionnaire ratings by Employers after Interview

There was no significant difference in terms of how the Employers (whether As or Bs) rated the Employees

(either As or Bs) as Interviewees. B Employers however rated themselves more highly as Interviewers than did A Interviewers ($t = 2.436$, $df = 46$, $p < .01$).

It was found that A Employers tended to rate themselves slightly better as Interviewers when paired with A Employees than with B Employees. The difference was, however, not significant ($t = .611$, $df = 22$, $p < .30$). In contrast, it was also shown that the B Employees rated the A Employers as better Interviewers than did the A Employees. However, it was also found that the A Employers were slightly less at ease with B Employees than with A Employees during the interview and this might account for it, although the difference was not significant ($t = .352$, $df = 22$, $p < .40$).

It was somewhat unexpected to find that Employers in similar pairings (AA and BB) tended to see the Employees as more at ease than those in complementary pairings during the initial interview. The difference was however not significant ($t = .656$, $df = 46$, $p < .30$). This trend was nevertheless interesting since it was demonstrated that the Employees of complementary pairings saw the Employer as being more at ease than did the Employees of similar pairings for the interview.

Finally, contrary to what was expected, the B Employers were more at ease during the interview than were the A Employers but the difference was not highly significant.

TABLE 6

Questionnaire Ratings made by Employer after Verbal Task.

	AA	BB	AB	BA
1. How would you rate his performance on this task?	38	35	38	36
2. How would you rate your performance on this task as an Instructor or Boss?	37	38	36	35
3. How much at ease was he during the task?	46	39	37	38
4. How much at ease were you during the task?	49	44	46	43
5. How would you like to be his boss (have him work for you) for a job similar to this (that is for intellectually or verbally oriented types of jobs)?	(1)	(1)		
	43	39	36	37
6. How would you rate your interpersonal attraction to him (how you like him as a person)?	42	40	42	43

(1)

Employers would prefer having Employees of the same A-B type as themselves for a task similar to this one ($p < .05$).

TABLE 7

Questionnaire Ratings made by Employee after Verbal Task.

	AA	BB	AB	BA
1. How would you rate him as an Instructor or Boss for such a task (that is for intellectually or verbally oriented types of jobs)?	38	36	38	38
2. How would you rate your performance on this task?	35	29	29	30
3. How much at ease was he during the task?	43	39	45	42
4. How much at ease were you during the task?	36	30	34	35
5. How would you like him to be YOUR Boss for a job similar to this (intellectual or verbally oriented job)?	34	35	36	34
6. How would you rate your interpersonal attraction to him (how you like him as a person)?	41	40	40	42

3. How much "at ease" they were during the Verbal Task

By taking the scores from question 4 of Tables 6 and 7 the following small Table (8) can be set up so as to help visualize the relationship of how both members of the pair felt in the situation.

TABLE 8

Degree of Comfortableness of Employer and Employee during Verbal Task.

	Employer	Employee
Type of Pairing		
AA	49	36
BB	44	30
AB	46	34
BA	43	35

Contrary to what had been hypothesized it can be seen from the above Table that the Employers were less at ease in complementary pairings than in similar pairings during the verbal task. The difference in this case was however not significant ($t = .660$, $df = 46$, $p < .30$).

A factor which seemed to be operating was that A Employers were more at ease than B Employers in such a task

($t = 1.063$, $df = 46$, $p < .15$) although the difference was not significant as can be seen. This trend is puzzling when we keep in mind that the B Employers were more at ease than the A Employers during the interview. A Employees were also slightly more at ease than were B Employees during the Verbal Task ($t = 1.294$, $df = 46$, $p < .12$).

As can be seen from Table 7 above, B Employees were more at ease in complementary pairings than in similar pairings when doing the verbal task although the difference was not statistically significant ($t = .929$, $df = 22$, $p < .20$). This was expected also for the A Employees but was not the case although the difference between the two (AA and BA) was very slight and therefore not significant.

It should be noted that the Employers saw their Employees in the Verbal Task as being more at ease when they were of the same A-B type as themselves ($t = 1.496$, $df = 46$, $p < .10$). The Employers also saw the A Employees as being more at ease than the Bs although not significantly so ($t = 1.190$, $df = 46$, $p < .15$). And the A Employees as already mentioned, actually rated themselves as being more at ease than the B Employees did.

During the verbal task the A Employers appeared to the Employees as being more at ease than the B Employers ($t = 1.659$, $df = 46$, $p < .10$), and the A Employers actually reported being more at ease.

It should be pointed out that the B Employees had a tendency to see the A Employers as being more at ease than the B Employers for a verbal task ($t=1.066$, $df=22$, $p<.15$). This might have some significance considering that the complementary pairing (AB) did better on this task than the similar pairing (BB) even if not significantly so ($t=.802$, $df=22$, $p<.25$).

4. Ratings of performance and interpersonal attraction by Employers and Employees after the Verbal Task

Just as the Employers felt more at ease with Employees of the same type they also preferred having them as Employees for such a task ($t=1.700$, $df=46$, $p<.05$) (See Table 6). The A Employers, however, did not have a significantly greater interpersonal attraction for the As than for the Bs. The B Employers on the other hand had a slightly greater attraction for the As than for the Bs but it is not significant either ($t=.925$, $df=22$, $p<.20$). A Employees also had a slightly greater attraction for B Employers for such a task.

TABLE 9

Questionnaire Ratings made by Employer after Mechanical Task.

	AA	BB	AB	BA
1. How would you rate his performance on this task?	35 (1)	38 (1)	38	36
2. How would you rate "your" performance on this task as an Instructor or Boss?	41 (2)	38 (2)	36 (3)	36 (3)
3. How much at ease was he during the task?	41 (4)	47 (4)	34	40
4. How much at ease were you during the task?	48	44	41	42
5. How would you like to be his Boss (have him work for you) for a job similar to this (that is for mechanical or technical-manual oriented types of jobs)?	34	40 (5)	44 (5)	33
6. How would you rate your interpersonal attraction to him (how you like him as a person)?	42	42	43	43

(1) Employers of similar pairings rated their own performance better ($p < .05$).

(2) Employers of similar pairings saw their Employees as being more at ease ($p < .01$).

(3) B Employers saw their Employees as being more at ease than did the A Employers ($p < .01$).

(4) Employers of similar pairings were more at ease than those of complementary pairings ($p < .05$).

(5) Employers of both types were more inclined to prefer B Employees for such a task ($p < .005$).

TABLE 10

Questionnaire Ratings made by Employee after Mechanical Task.

	AA	BB	AB	BA
1. How would you rate him as an Instructor or Boss for such a task (that is for mechanical or technical-manual types of jobs)?	(1) 44			(1) 44
2. How would you rate your performance on this task?	27	33	30	29
3. How much at ease was he during the task?	44	41	46	46
4. How much at ease were you during the task?	38	36	32	36
5. How would you like him to be YOUR Boss for a job similar to this (mechanically or manually oriented job)?	39	36	39	38
6. How would you rate your interpersonal attraction to him (how you like him as a person)?	41	42	40	44

- (1) A Employees rated their Employers better than did the B Employees ($p < .05$).

5. How much at ease they were during the Mechanical Task

Again a small Table can be set up by combining the results from Question 4 of Tables 9 and 10. This gives a comparative view of how both members of the pairing felt during the Mechanical Task.

TABLE 11

Degree of Comfortableness of Employer and Employee during Mechanical Task.

Type of Pairing	Employer	Employee
	AA	48 ⁽¹⁾
BB	44 ⁽¹⁾	36
AB	41	32
BA	42	36

- (1) Employers of similar pairings were more at ease than those of complementary pairings ($p < .05$).

As can be seen from Table 11 above, the Employees of complementary pairings (AB, BA) were less at ease than those of similar pairings (AA, BB) for such a task but the difference was not significant ($t = 1.054$, $df = 46$, $p < .15$).

The A Employees were again, as they were for the Verbal Task, slightly more at ease than the B Employees ($t=1.044$, $df=46$, $p<.20$).

The Employers of similar pairings (AA, BB) saw their Employees as being much more at ease than did those of complementary pairings ($t=2.454$, $df=46$, $p<.01$). The Employers were therefore assessing their Employee's degree of comfortableness correctly since the Employees of similar pairings were actually more at ease during the Mechanical Task than were Employees of complementary pairings, as has already been stated above.

It should be noted that for this type of task the B Employers saw their Employees as being significantly more at ease than did the A Employers ($t=2.490$, $df=46$, $p<.01$).

A complementary finding to the fact that Employees of similar pairings were more at ease than those of complementary pairings was that the Employers of similar pairings were also more at ease than those of complementary pairings ($t=1.751$, $df=46$, $p<.05$).

6. Ratings of performance and interpersonal attraction after Mechanical Task

Employers of similar pairings (AA and BB) rated their own performance as Employers for the Mechanical task much better than Employers of complementary pairings (See Table 9),

($t = 1.763$, $df = 46$, $p < .05$). Nevertheless, both A and B Employers were significantly more inclined to consider having B Employees for this type of task ($F = 9.72$, $df = 1, 44$, $p < .005$), (See Tables 9 and 12).

TABLE 12

Analysis of Variance of how Employers would consider becoming their Employee's actual Employer for a Mechanical task.

Source	SS	df	MS	F
Employer	0.5208	1	0.5208	0.34
Employee	6.0208	1	6.0208	9.72 (1)
Employer x Employee	0.1875	1	0.1875	0.30
Within Cells	27.2500	44	0.6193	
Error Due To Approx.	-0.0000			
Total	33.9792	47		

(1) The type of Employee (B) is the significant factor for such a Task ($p < .005$).

Even though the difference was not significant it is still interesting to see that B Employees were slightly more inclined to prefer As as an Employer rather than Bs for such a task ($t = .558$, $df = 22$, $p < .30$).

Both A and B Employees, however, had a greater interpersonal attraction for B Employers in this type of task ($t=1.333$, $df=46$, $p<.1$). The Employers on the other hand had a greater (although very slightly so and therefore not statistically significant) interpersonal attraction for Employees of the opposite type.

TABLE 13

Analysis of Variance of how the Employers of the different pairings felt at ease during the Interview, Verbal Task, and Mechanical Task.

Source	SS	df	MS	F
Pairings	2.1879	3	0.7293	.85
Tasks	13.4308	2	6.7154	7.85 ⁽¹⁾
Pairings x Tasks	3.4578	6	0.5763	0.67
Within Cells	112.9167	132	0.8554	
Error Due To Approx.	-0.0001			
Total	131.9932	143		

- (1) The type of Task was the greatest factor in determining how at ease the Employers felt ($p<.01$).

TABLE 14

Analysis of Variance of how the Employees felt at ease during the Interview, Verbal Task, and Mechanical Task.

Source	SS	df	MS	F
Pairings	2.0570	3	0.6857	0.99
Tasks	2.6819	2	1.3410	1.95 (N.S.) ($p < .25$)
Pairings x Tasks	2.1513	6	0.3586	0.52
Within Cells	91.0001	132	0.6894	
Error Due To Approx.	-0.0015			
Total	97.8389	143		

7. Analysis of Variance for Types of Pairings and Tasks
(Interview, Verbal, Mechanical) in terms of degree of
comfortableness

As can be seen from Tables 13 and 14 there was no main interaction effect between the type of pairing and the type of task in terms of how at ease the Employer and the Employee felt during the tasks. There was however a main Task effect for how the Employers felt at ease ($F=7.85$, $df=2, 132$, $p < .01$). The Employers felt most at ease during the Verbal Task and least at ease during the Interview.

TABLE 15

Total ratings of how at ease each member of the pairings felt during the Interview and the Verbal and Mechanical Tasks.

Type of Pairing	Employer	Employee
	AA	133
BB	127	105
AB	121	101
BA	124	110 (1)

(1) The A Employees were more at ease than the Bs ($p < .05$).

§. Total ratings of how Employers and Employees felt during the three stages of the experiment

As can be seen from Table 15, when the ratings of how at ease the Employers and Employees were during the interview are combined with those of the verbal and mechanical tasks, the Employees of similar pairings (AA and BB) come out as being slightly, although not significantly, more at ease than those of complementary pairings (AB and BA), ($t = .355$, $df = 46$, $p < .40$). Looking at the same combined ratings but in terms of Employee-type it seems that the A Employees of similar pairings (AA) are more

at ease than those of complementary pairings (BA), but again the difference is not significant ($t = .222$, $df = 22$, $p < .40$). The B Employees of similar pairings (BB) are also slightly more at ease ($t = .397$, $df = 22$, $p < .35$).

When looking at these overall ratings it is seen that A Employees are more at ease than are the B Employees ($t = 1.756$, $df = 46$, $p < .05$). The Employers of similar pairings are also more at ease than those of complementary pairings but this is not statistically significant ($t = 1.073$, $df = 46$, $p < .15$).

9. Discrepancy between how the Employers and Employees felt at ease

As can be seen from Table 16, there were only two places where members of the complementary pairings showed a greater discrepancy in how they felt at ease than did members of the similar pairings. In both cases it consisted of B Employees. In only one of these are performance scores involved but it is very interesting to see that this is the only place where the Employees of the complementary pairings did more poorly than those of the similar pairings.

It should also be noted that when the ratings and scores are added up for the different stages, that the type of pairing in which both members were the most at ease brought about the worst performance. On the other hand the type of pairing in which both members were least at ease brought about the best performance.

TABLE 16

Discrepancy between how the Employer and Employee felt at ease.

After Interview

	Employer	Employee	Discrepancy	Performance
AA	36	38	2	
BA	39	39	0	
BB	39	39	0	} (1)
AB	34	35	1	

After Verbal

AA	49	36	13	334
BA	43	35	8	360
BB	44	30	14	332
AB	46	34	12	359

After Mechanical

AA	48	38	10	216
BA	42	36	6	248
BB	44	36	8	286
AB	41	32	9	276

} (2)

Total of Interview plus
Verbal plus Mechanical

AA (3)	133	115	18	550
BA	124	110	14	608
BB	127	105	22	618
AB (4)	121	101	20	635

- (1) The only pairings where there is a greater discrepancy of comfortableness between the members of complementary pairings than those of similar pairings.
- (2) The only place where similar pairings are more productive than complementary pairings. Note inversion of expected discrepancy also.
- (3) Pairing in which there was the greatest degree of comfortableness on the part of both members and which brought about the worst overall performance.
- (4) Pairing which had the lowest degree of comfortableness and which produced the best overall performance.

TABLE 17

Additional questions given to Employer after experiment was completed.

	AA	BB	AB	BA
1. How authoritarian do you feel you had to be with this person	32	25	28	26
2. If ever you became a counsellor and he needed help, how would you like having him as a client	44	43	43	47

TABLE 18

Additional questions given to Employee after the experiment was completed.

	AA	BB	AB	BA
1. How authoritarian did you feel he was?	30	30	28 (1)	28 (1)
2. If ever you had to see a counsellor, how much would you consider seeing him (this person here) if you knew he had been trained for the job?	36	38	45	41

- (1) An Employer would prefer seeing a counsellor of a different A-B type than himself ($p < .001$).

10. Degree of authoritarianism

The A Employers rated themselves as having been more highly authoritarian than did the Bs (See Table 17) ($t = 1.348$, $df = 46$, $p < .10$). They also felt they were more authoritarian with the As than with the Bs although the difference was not significant ($t = .705$, $df = 22$, $p < .25$).

Table 18 shows that Employees in similar pairings saw their Employers as slightly more authoritarian than in complementary pairings. This was however not a significant trend. It is nevertheless surprising, considering that they were more at ease with Employers of the same A-B type as themselves.

11. Counsellor and client preference

One of the most interesting results was that Employees in complementary pairings would consider seeing their Boss as a counsellor, if he were trained for it, much more than would those in similar pairings ($t=3.401$, $df=46$, $p<.001$). On the other hand if these same Employers became counsellors they would tend to prefer having As as clients ($t=1.316$, $df=46$, $p<.1$).

CHAPTER IV

DISCUSSION

This study was set up to determine whether or not the performance of A and B type subjects would depend on Employer-type (A or B) and also on the type of job being performed. The results will now be examined in terms of their implications for therapy and employment. But before doing so a short review of the major findings will be made.

A. Brief summary of results

The BA pairing as expected, was the most productive pairing in the verbal task. This had already been observed in a previous study using a different type of verbal task (de Rocquigny, 1971). However, contrary to what was expected, the BB pairing was more productive than the AB pairing in the Mechanical task. It was observed that both the Employer and Employee were more at ease in the BB pairing for this type of task than they were for the AB pairing. As a matter of fact the B Employee and the A Employer in this AB pairing were the least at ease of all four pairings for this type of task. There was also a slightly greater discrepancy of comfortableness between the members of the AB pairing than those of the BB pairing and it was found that the greater the discrepancy (when holding type of Employee constant)

the lower was the score. In most cases the members of complementary pairings showed less discrepancy than those of similar pairings.

The As did not do significantly better than the Bs on the verbal task but this was probably affected a great deal by the sample of Subjects since they were all university students. The B Employees did however significantly better than the A Employees on the mechanical task.

It is noteworthy that the Employer was rated significantly better as Interviewer if he was of a different type than the Employee. It is also quite significant that after having been through an interview and a verbal and mechanical task, it was shown that if the Employees had to see a counsellor they would prefer seeing someone being of a different type than themselves. Yet they were less at ease in complementary pairings!

B. Implications for therapy

It should be noted at this point that there are certainly some problems involved in generalizing from the analogue relationships in this study to "real therapy" relationships. Therefore most of the conclusions which are drawn concerning therapy, on the basis of results from this study, remain quite tentative and would have to be checked out in actual therapy relationships.

Since the complementary pairings for the Verbal task were the most productive pairings, this would support the

already prevalent idea concerning A-B types, that when psychotherapy is performed greater success can be expected from complementary pairings. It should be noted that this seems to apply mostly to verbal therapy in its more traditional aspects; therapy which is characterized mainly as being analytic or supportive.

The mechanical task, being less dependent on general verbal ability and ability in the area of mental dynamics but dependent on practical ability to a greater extent, is more reminiscent of a behavioral type of therapy where the emphasis for the client is more on acting or doing than on simply thinking or discussing. However, behavior modification encompasses a broad range of factors and different approaches within its own field. In this study the reference to behavior modification implies the systematic approach of setting up contingencies, of giving directions, and of a general technical set where perceptual and tactual cues and feedback are of great importance. Thus what it refers to basically, is the approach where some sort of specific plan has to be adhered to quite closely. Thus from the results in the mechanical task it would seem that when a more behavioral type of therapy (the type of behavior modification just mentioned) is called for and you have a B client, then you can expect slightly better results with a B therapist. However if you have an A client for such a type of therapy the complementary pairing would again be more effective.

Therefore it seems that B therapists would do better for both A and B clients when using a type of therapy where more external manipulations are called for both on the part of the therapist and client than is the case in ordinary psychotherapy. It is probably because Bs have a more practical approach to problem solving; they have a more pragmatic set. Betz and Whitehorn (1955) had noted that B therapists' goals appear to be less individualized and based more on external norms than those of A therapists. They found that B therapists focused on psychopathologically oriented goals such as symptom decrease and increased socialization while As stressed personality oriented goals. Bs seemed to be more content bond and also more directive as is the case for field-independent persons. It appears easier for them to think in terms of response-reinforcement contingencies and to organize life, accordingly, in a more systematic fashion.

This study seems to support the "paradoxical effects" phenomenon where the therapist is less at ease generally with clients with whom he would be more effective. It was found that similar pairings were more at ease than complementary pairings (except for B Employees in the verbal task). Thus it seems that a therapist would be more effective in a pairing where he is a little less at ease (this pairing being a complementary pairing). It also seems that Employees are more productive in pairings in which they are a little less at ease (this being generally the case in complementary

pairings), especially for A "types". This was already demonstrated in a previous study (de Rocquigny, 1971). Usually when a person is less at ease it seems that he is more concerned about what is going on and will try to make things better. He is apt to put in a greater effort.

It should also be noted that the type of pairing showing the least discrepancy in comfortableness between how both members felt in a given experimental situation also brought about the best performance. In almost all cases the complementary pairings showed the smallest discrepancy. This also was the case in a previous study done using a verbal task only (de Rocquigny, 1971). Thus it would seem that if one member feels much more at ease than the other member in a therapeutic relationship then treatment will probably not be as effective.

The Employer got a much better rating in complementary pairings after the Interview. This result coupled with the fact that the Employee (after verbal and mechanical tasks) would consider seeing his Employer for counselling much more if he were of a different type than himself, seems to speak for itself in terms of its relevance for therapy.

Keeping in mind the hypotheses that were proposed and their respective corollaries it can be concluded that since the complementary pairings brought about the best performance in the verbal task, that whenever psychotherapy is called for it would be wise to have a therapist of a different A-B

type. It seems that Bs would be actually more effective with As and that As would be more effective with Bs. However, judging from the results on the mechanical task we would expect B therapists to be more effective with both As and Bs when a more behaviorally oriented therapy is being done. Therefore the complementary pairing would still hold for the A patients when doing behavioral therapy but not necessarily for the B patients. It should be remembered, however, that the effects of complementarity still seem to be at work here; it counterbalances to a great extent some of the advantages emanating from the more practical and pragmatic approach which is characteristic of the B therapist and important for setting up behavioral programs.

Bs have certainly shown to be more productive in a more mechanical or technical type of task and therefore would probably turn out to be better candidates for behavior modification than would the As. The Employers in the experiment did in fact show a stronger preference for Bs in the mechanical task. The As failed to be significantly more productive than the Bs in the verbal task but this may have been due to the fact that all Bs were university students, and highly verbal.

C. Implications for employment

Just as the relationship between therapist and client are important for therapeutic results so is the relationship

between Employer and Employee important for performance in different jobs. It seems that when an intellectual or verbally oriented type of job is involved, that it is best if the Employer and Employee are of a different A-B type. When the job is more of the mechanical-manual or technical type, then it is best if the Employer is a B type. It seems quite evident also that a B Employee for a mechanical task will be much more productive than an A.

D. General implications for A-B

It is significant that the results in the verbal task are consistent with that of a previous similar study (de Rocquigny, 1971) in that the complementary pairings are more productive. It is however interesting to see that when a mechanical task is introduced the B Employers bring about a better performance from their Employees. This brings forth the possibility that in cases where the therapy does not ask for a depth exploration or examination of the self but is based on behavioral techniques, then the BB pairing might be more effective than the AB pairing because of the B therapist's natural set in such a type of problem solving situation.

It would be interesting to study who responds best to behavior therapy. It seems that Bs would do better because of their more practical approach to problem solving when it comes to external manipulations. A study could be done where both patients and therapists were classified on the

A-B scale. The idea would be to examine complementary pairings of therapists and patients in terms of A-B types rather than A-B therapists with schizophrenic and neurotic patients. You could then compare the results of both A and B therapists when doing behavior therapy to see if B therapists do better with behavioral techniques and also assess the superiority of results in complementary pairings when verbal psychotherapy is the main therapeutic agent. It could also be determined whether B patients respond better to behavior therapy than As and whether As respond better to verbal psychotherapy than Bs.

Another possible study using the same methodology as in the present thesis would be to have actual therapists instruct either clients or non-clients to perform both verbal and mechanical tasks following an initial interview. This would make it a lot easier to assess results because of the objective criteria and also would be much less time consuming. Thus it would make it possible to evaluate the efficiency of A and B therapists in both a verbal and more a systematic behavioral situation which should reflect their ability in bringing about changes when doing either verbal oriented psychotherapy or behavior therapy.

It was mentioned in the discussion that a possible reason why the As did not do significantly better than the Bs on the verbal task is that they were university students. A university student is normally expected to be somewhat more verbal because of what is asked of him, but this would

also have to be checked out, This could be done by comparing Bs who are not university students with Bs who are university students.

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APPENDIX A - QUESTIONNAIRE FOR INTERVIEWER AND
QUESTIONNAIRE FOR INTERVIEWEE

Name:

Date:

Questionnaire for InterviewerAfter Interview

CIRCLE THE MOST APPROPRIATE NUMBER

V. Low Low Average High. V. Hig

- | | | | | | | |
|----|---|---|---|---|---|---|
| 1. | How would you rate him as an interviewee. | 1 | 2 | 3 | 4 | 5 |
| 2. | How would you rate yourself as an interviewer. | 1 | 2 | 3 | 4 | 5 |
| 3. | How much at ease was he during the interview. | 1 | 2 | 3 | 4 | 5 |
| 4. | How much at ease were you during the interview. | 1 | 2 | 3 | 4 | 5 |

Name:

Date:

Questionnaire for IntervieweeAfter Interview

CIRCLE THE MOST APPROPRIATE NUMBER

V. Low Low Average High V. High

- | | | | | | | |
|----|---|---|---|---|---|---|
| 1. | How would you rate him as an interviewer. | 1 | 2 | 3 | 4 | 5 |
| 2. | How would you rate your present performance as interviewee (How well you cooperated in giving information about yourself to the interviewer). | 1 | 2 | 3 | 4 | 5 |
| 3. | How much at ease was he during the interview. | 1 | 2 | 3 | 4 | 5 |
| 4. | How much at ease were you during the interview. | 1 | 2 | 3 | 4 | 5 |

APPENDIX B - SCORE SHEET

Score Sheet

Date _____

<u>Verbal Task</u>	Vowel	Score
Trial I	A	_____
Trial II	E	_____
Trial III	I	_____
Trial IV	O	_____
Trial V	U	_____
Final Score		_____

<u>Mechanical Task</u>	Score
Trial I	_____
Trial II	_____
Trial III	_____
Trial IV	_____
Trial V	_____
Final Score	_____

APPENDIX C - QUESTIONNAIRE FOR INSTRUCTOR AND
QUESTIONNAIRE FOR EMPLOYEE
AFTER VERBAL TASK

Name:

Date:

Questionnaire for InstructorAfter Verbal Task

CIRCLE THE MOST APPROPRIATE NUMBER	V. Low	Low	Average	High	V. High
How would you rate his performance on this task.	1	2	3	4	5
How would you rate your performance on this task as an Instructor or Boss.	1	2	3	4	5
How much at ease was he during the task.	1	2	3	4	5
How much at ease were you during the task.	1	2	3	4	5
How would you like to be his boss (have him work for you) for a job similar to this (that is for intellectually or verbally oriented types of jobs).	1	2	3	4	5
How would you rate your interpersonal attraction to him (how you like him as a person).	1	2	3	4	5

Name:

Date:

Questionnaire for EmployeeAfter Verbal Task

CIRCLE THE MOST APPROPRIATE NUMBER	V. Low	Low	Average	High	V. High
How would you rate him as an instructor or Boss for such a task (that is for intellectually or verbally oriented types of jobs).	1	2	3	4	5
How would you rate your performance on this task.	1	2	3	4	5
How much at ease was he during the task.	1	2	3	4	5
How much at ease were you during the task.	1	2	3	4	5
How would you like him to be YOUR Boss for a job similar to this (intellectually or verbally oriented job).	1	2	3	4	5
How would you rate your interpersonal attraction to him (how you like him as a person).	1	2	3	4	5

APPENDIX D - QUESTIONNAIRE FOR INSTRUCTOR AND
QUESTIONNAIRE FOR EMPLOYEE
AFTER MECHANICAL TASK

Name:

Date:

Questionnaire for InstructorAfter Mechanical Task

CIRCLE THE MOST APPROPRIATE NUMBER	V. Low	Low	Average	High	V. High
How would you rate his performance on this task.	1	2	3	4	5
How would you rate "your" performance on this task as an Instructor or Boss.	1	2	3	4	5
How much at ease was he during the task.	1	2	3	4	5
How much at ease were you during the task.	1	2	3	4	5
How would you like to be his Boss (have him work for you) for a job similar to this (that is for mechanical or technical-manual oriented types of jobs).	1	2	3	4	5
How would you rate your interpersonal attraction to him (how you like him as a person).	1	2	3	4	5

Name:

Date:

Questionnaire for EmployeeAfter Mechanical Task

CIRCLE THE MOST APPROPRIATE NUMBER

V. Low Low Average High V. High

How would you rate him as an Instructor or Boss for such a task (that is for mechanical or technical-manual types of jobs).

1 2 3 4 5

How would you rate your performance on this task.

1 2 3 4 5

How much at ease was he during the task.

1 2 3 4 5

How much at ease were you during the task.

1 2 3 4 5

How would you like him to be YOUR Boss for a job similar to this (mechanically or manually oriented job).

1 2 3 4 5

How would you rate your interpersonal attraction to him (how you like him as a person).

1 2 3 4 5

APPENDIX E - QUESTIONNAIRE FOR INSTRUCTOR AND
QUESTIONNAIRE FOR EMPLOYEE
(ADDITIONAL QUESTIONS)

Name:

Date:

Questionnaire for InstructorAdditional Questions

- | CIRCLE THE MOST APPROPRIATE NUMBER | V. Low | Low | Average | High | V. Hig |
|--|--------|-----|---------|------|--------|
| 1. How authoritarian do you feel you had to be with this person. | 1 | 2 | 3 | 4 | 5 |
| 2. If ever you became a counsellor and he needed help, how would you like having him as a client. | 1 | 2 | 3 | 4 | 5 |
| A. 1) What did you find most satisfying in your relationship with him as an <u>interviewee</u> . | | | | | |
| 2) What did you find most annoying or dissatisfying in your relationship with him as an <u>interviewee</u> . | | | | | |
| B. 1) What did you find most satisfying in this relationship with him as your <u>employee</u> . | | | | | |
| 2) What did you find most annoying or dissatisfying in this relationship with him as your <u>employee</u> . | | | | | |
| C. Comments on the experiment (or anything else you feel might be important | | | | | |

Name:

Date:

Questionnaire for EmployeeAdditional Questions

CIRCLE THE MOST APPROPRIATE NUMBER

V. Low Low Average High V. Hi

1. How authoritarian did you feel he was. 1 2 3 4 5
2. If ever you had to see a counsellor,
how much would you consider seeing
him (this person here) if you knew
he had been trained for the job. 1 2 3 4 5
- A. 1) What did you find most satisfying in your relationship with him as
an interviewer.
- 2) What did you find most annoying or dis satisfying in your relation-
ship with him as an interviewer.
- B. 1) What did you find most satisfying in this relationship with him as
your Instructor or Boss.
- 2) What did you find most annoying or dissatisfying in this relation-
ship with him as your Instructor or Boss.
- C. Comments on the experiment (or anything else you feel might be important)

APPENDIX F - MOTIVATION SHEET GIVEN TO EMPLOYEE
BEFORE EXPERIMENT

To the student participating in the experiment VERMEC:

There is another student involved in this experiment. I would like you to go in there and perform as well as you can on the tasks for which he will give you instructions. This will be preceded by a short interview. You will be interviewed so that he may get to know you more.

Please take the tasks seriously and do as well as you can. Imagine yourself being in a situation where your involvement and performance would be important for you in terms of your future either for advancement, promotion or for your own happiness or satisfaction.

I would like you to get something out of all this. In order to succeed in doing so it is imperative that you follow the instructions. You can use the other student to achieve this purpose. You should get to know him a little bit by how he will be relating to you and helping you out. This should be an occasion for you to meet another student and see how he acquits himself of his task. As a matter of fact I am counting on you to sincerely and frankly evaluate his performance.

Sincerely,

The Experimenter. (R. de R.)