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AN ANALYSIS OF TWO RESPONSE SETS:
TRUE RESPONDING AND ITEM ENDORSEMENT

by

Martin Edward Morf

Department of Psychology

Submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

Faculty of Graduate Studies
The University of Western Ontario
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ABSTRACT

The focus of the study was on acquiescence or agreement response set, a hypothesized response set which has been assumed to predispose respondents to answer consistently true, yes, or agree; or consistently false, no, or disagree to items of structured psychological tests. The study shows that what has been labeled acquiescence constitutes in fact two unrelated response sets: the tendency to answer true, yes, or agree and the tendency to endorse items as descriptive of oneself. The two tendencies emerged clearly as two factors from a factor analysis of positively worded true-keyed, positively worded false-keyed, negatively worded true-keyed, and negatively worded false-keyed self-descriptive personality scales and external referent attitude scales. The true responding factor separated true- from false-keyed scales perfectly, the item endorsement factor separated positively worded true-keyed and negatively worded false-keyed (acceptance-keyed) scales from positively worded false-keyed and negatively worded true-keyed (rejection-keyed) scales almost perfectly. Scales consisting of attitude items obtained higher loadings on the true responding factor than on the item endorsement factor, scales consisting of self-descriptive items obtained loadings on these two factors which did not differ significantly. The first finding supports, and the second need not conflict with the view that true

responding and item endorsement are response sets of some generality and with different correlates, in terms of which the controversy between response set and content interpretations of the meaning of test scores can be approached in a productive manner.

ACKNOWLEDGMENTS

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INTRODUCTION

Statement of the Problem

The aim of this study is to analyze the roles of two response tendencies elicited by psychological tests which offer the respondent strictly defined response alternatives such as true and false, or yes and no. The two response tendencies are true responding and item endorsement. Both of them are referred to by the broad and somewhat misleading label acquiescence, and before they can be discussed in more detail they and the term acquiescence must be defined clearly.

True responding can be defined as a tendency to answer true, yes, or agree to test items regardless of content and regardless of whether the items are positively or negatively worded. A subject who is high on true responding would answer true to a large proportion of items of an item pool heterogeneous in content. As Table 1 shows, such a subject would be likely to answer true to the item "I usually try to solve my problems by myself" as well as to the item "I usually do not try to solve my problems by myself."

Item endorsement can be defined as a tendency to endorse as self-descriptive the characteristics or opinions reflected by test items. A test item refers to some characteristic, as in "I usually try to solve my problems by myself", or to an opinion, as in "People

Table 1

Example to Illustrate Wording and Keying Item Variations

Item Variation	Item	Response Expected from Subject High on	
		True Responding	Item Endorsement
Acceptance-Keyed Item Variations			
positively worded true-keyed	I usually try to solve my problems by myself	True	True
negatively worded false-keyed	I usually don't try to solve my problems by myself	True	False
Rejection-Keyed Item Variations			
positively worded false-keyed	I usually try to share my problems with someone who can help me	True	True
negatively worded true-keyed	I usually don't try to share my problems with someone who can help me	True	False

who try to solve their problems on their own are to be admired." In general, a subject can ascribe to himself the characteristic or opinion referred to by an item by making a true response if it is positively worded and by making a false response if it is negatively worded. To pursue the example given in Table 1, a subject who is high on item endorsement would be expected to answer true to the item "I usually try to solve my problems by myself" and false to its negation "I usually do not try to solve my problems by myself."

Acquiescence is a label which refers to the tendency to answer true, yes, or agree when true responding and item endorsement are confounded. These two tendencies are confounded on most tests, since most test items are positively worded. This is particularly true of the two tests on which acquiescence research has focused, the California F scale and the Minnesota Multiphasic Personality Inventory (MMPI). Partly because it has been used widely, and partly because the tendencies it refers to are easily confounded, the label acquiescence cannot be dispensed with entirely.

True responding and item endorsement are thus response tendencies referred to by the label acquiescence. They will be shown to affect the scores obtained on structured personality tests like the MMPI and the F scale. In the discussion which follows the broad concepts of response set and response style are introduced first. This is followed by a brief discussion of the two most prominent response styles: acquiescence and social desirability. The focus will then be narrowed on acquiescence, and true responding and item endorsement will

be examined in detail. From this examination will emerge a basic strategy for separating the two convincingly. It will then be suggested that the two tests on which acquiescence research has concentrated elicit the two types of acquiescence under discussion in different degrees, that the F scale elicits primarily true responding and the MMPI primarily item endorsement. The whole analysis of the problem will rest on the assumption that acquiescence is not a myth, and that Rorer's (1965) and Block's (1965) dismissal of it as such is based on erroneous interpretations of the evidence. The literature on acquiescence elicited by the F scale and the MMPI will be scrutinized carefully to determine whether the evidence supports this assumption, and whether it justifies the suggestion that the F scale elicits primarily true responding while the MMPI elicits primarily item endorsement.

The response tendencies referred to by the label acquiescence can be regarded as response sets. Set is usually defined as a latent tendency or readiness to respond in a particular way to a given category of stimuli. Sets appear to be "ubiquitous" (McGee, 1967) or ever present determinants of behaviour. Cronbach (1946) was the first to explore in detail the role of set in relation to psychological tests. He defined response set as a "tendency causing a person consistently to make different responses to test items than he would have had the same content been presented in different form" (p. 491). By form Cronbach meant the way in which an item is stated, the choice of responses offered, and the instructions given to the respondent. For example, the items of the MMPI have been presented with two response categories (true and false)

and with three response categories (true, cannot say, and false). Without the cannot say option, a respondent must answer true or false to the same content which might elicit a set to respond cannot say if all three response categories were available.

Cronbach's treatment of response set raises questions concerning the relationship between what he called form and characteristics of the respondent. Cronbach treated form, not as a source of variance, but as a set of conditions permitting response sets to manifest themselves. Wiggins (1962, 1968) has made a more clearcut distinction between stimulus and organismic variables in this area. He distinguished between method variance attributable to item characteristics like social desirability scale value, endorsement frequency, and direction of keying; and stylistic variance, reflecting response tendencies or sets of the respondent.

Wiggins' distinction is similar to a distinction between response sets and response styles made by Jackson and Messick (1962b). Jackson and Messick define response sets as

Response consistencies in response to formal item properties that are restricted in time to a single test session and recurrent consistencies observed only on a specific test form. (p. 135)

Response styles they defined as

expressive response consistencies, usually in response to item characteristics other than specific content, which are relatively enduring over time, with some degree of generality beyond a particular test performance to responses both in other tests and in non-test behaviour. (p. 135)

Wiggins' method variance and the variance attributable to Jackson and Messick's response sets appear to be primarily error

variance to be removed or to be held constant, while stylistic variance appears to be treated by Wiggins as well as by Jackson and Messick as an expression of personality and as valid variance of intrinsic interest. It is tempting to assume that the latter is related to personality traits. For example, it appears plausible that a respondent who chooses the cannot say category often, lacks confidence in his decisions. The correlations obtained between measures of response style and of personality traits, however, are low and unequivocal links between the two remain to be established.

In Jackson and Messick's (1962b) terms, true responding and item endorsement appear to be response styles rather than mere response sets. Cronbach (1942, p. 414) defined acquiescence as the "tendency to mark items 'true' rather than 'false'" and he (Cronbach, 1942, 1946) and later investigators have cited or produced evidence indicating that respondents differ reliably in the degree to which they exhibit acquiescence, and that acquiescence has some degree of stability and generality. Acquiescence was regarded as one of the two major response styles in the literature. The other major response style was social desirability, i.e. the tendency to respond in the socially desirable direction (Edwards, 1957). A true response to the item "I enjoy helping old ladies cross busy streets" would probably be rated as a socially desirable response and can serve as an example of a response in the socially desirable direction. Difficulties in clarifying the relationship between acquiescence and social desirability, and the relationship between style and content as determinants of responses, led to more

refined definitions of acquiescence and social desirability and to more thorough investigation of the processes underlying them. The present study is a further effort in this direction. The two types of acquiescence on which it focuses are of interest because they have been confounded in the past and because they appear to be important sources of variance.

True responding, it was suggested earlier, can be defined as a tendency to answer true, yes, or agree to test items regardless of their content and wording. Jackson's (1967a) point concerning acquiescence, in general, applies to true responding: it is best regarded as a bipolar continuum with consistent true responders located near one pole and consistent false responders near the other. The consistent true responder tends to respond true, yes, or agree to test items, regardless of whether they are positively or negatively worded, and to obtain high scores on true-keyed scales, i.e. scales for which the score is obtained by counting the true responses, and low scores on false-keyed scales. A respondent located near the opposite pole of the true responding continuum, on the other hand, tends to obtain low scores on true-keyed scales and high scores on false-keyed scales. As a result, as Jackson and Messick (1961, 1962a) have pointed out, true responding should lead to positive correlations among like keyed scales and negative correlations among differently keyed scales, and it should emerge as a factor separating true- and false-keyed scales.

Item endorsement was defined earlier as a tendency to attribute to oneself the characteristics or opinions reflected by test items. In

order to observe its effects, one must distinguish between items in terms of wording and direction of keying, i.e. between positively worded true-keyed, positively worded false-keyed, negatively worded true-keyed, and negatively worded false-keyed items or scales. As indicated earlier, a true response to a positively worded item and a false response to a negatively worded item constitute item endorsement or acceptance. Positive true items and negative false items can thus be regarded as acceptance-keyed. Similarly, a false response to a positively worded item or a true response to a negatively worded item generally constitutes rejection of an item. Positive false and negative true items are thus rejection-keyed (see Table 1). It is clear that item endorsement, like true responding, must be regarded as a bipolar continuum, with item acceptance represented by one pole, item rejection by the other.

Also similar to true responding are the statistical effects of item endorsement. Subjects who endorse many items should obtain high scores on the acceptance-keyed scales, those who tend to reject items should get high scores on rejection-keyed scales. As Jackson and Messick (1965) and Jackson and Lay (1968) have pointed out, item endorsement should thus emerge as a factor separating acceptance- and rejection-keyed scales.

True responding and item endorsement have been confounded in the past. It is difficult to establish precisely whether earlier investigators interpreted acquiescence as item endorsement or true responding, but certain inferences about their conceptions of

acquiescence can be made. For example, Lentz (1938, p. 659) defined acquiescence as the "tendency to agree rather than disagree to propositions in general". Since propositions are usually positively worded, it is likely that Lentz saw acquiescence essentially as true responding. The same appears to apply to Cronbach's (1942) definition cited earlier. His definition emerged from an examination of personality and achievement tests, and self-descriptive item endorsement is not a process likely to be elicited by the latter. Acquiescence was also essentially seen as true responding when it began to be examined in relation to the F scale, since the F scale and conformity are related, and since there has been a tendency to assume that true responding and conformity are related. For example, Cronbach (1942) described high acquiescers as noncritical and gullible, and Stricker (1963, p. 320) argued that "one can conform with ... items, since agreeing, per se, typically brings social approval". Stricker's results forced him to reinterpret acquiescence as "the easiest way to respond in a test-taking situation" (p. 337), and conformist behaviour itself has also been reinterpreted more recently as the easiest way to respond to a situation eliciting uncertainty (R. Elliott, 1961).

When the role of response sets was examined in relation to the MMPI, acquiescence began to be seen as item endorsement and as a response tendency related to self-description, and the possibility of clearly separating true responding and item endorsement arose. Jackson and Messick (1965) and Jackson and Lay (1968) performed factor analyses on batteries of scales which in theory permitted the emergence of factors separating true- from false-keyed scales and acceptance- from

rejection-keyed scales. In neither study was the separation conclusive, chiefly because such separation was not their primary aim. The Jackson and Messick (1965) study was a reanalysis of already available data and it was not designed specifically to separate item endorsement and true responding. Especially constructed scales fitting the four item variations discussed were used in the study by Jackson and Lay (1968), but its focus was on the possibility of constructing short, homogeneous content scales, the items were highly content saturated, and little acquiescence was elicited by them.

These studies suggest a strategy involving factor analysis and positively worded true-keyed, positively worded false-keyed, negatively worded true-keyed and negatively worded false-keyed scales consisting of moderately content saturated items which elicit a maximum of acquiescence. Figure 1 shows hypothetical true responding and item endorsement factors and the separation they produce between the four scale variations.

More than such factor analytical separation may be possible. The distinction between true responding and item endorsement is one of the two basic distinctions made between response tendencies grouped together under the label acquiescence. The other is the distinction made by Damarin and Messick (1965) between interpretive acquiescence and stimulus acceptance. The former appears to be what these authors call "intellectually-based". It appears to be related to an inability to comprehend items. The latter appears to be a "temperamentally based" tendency to accept stimuli impulsively reminiscent of Couch and

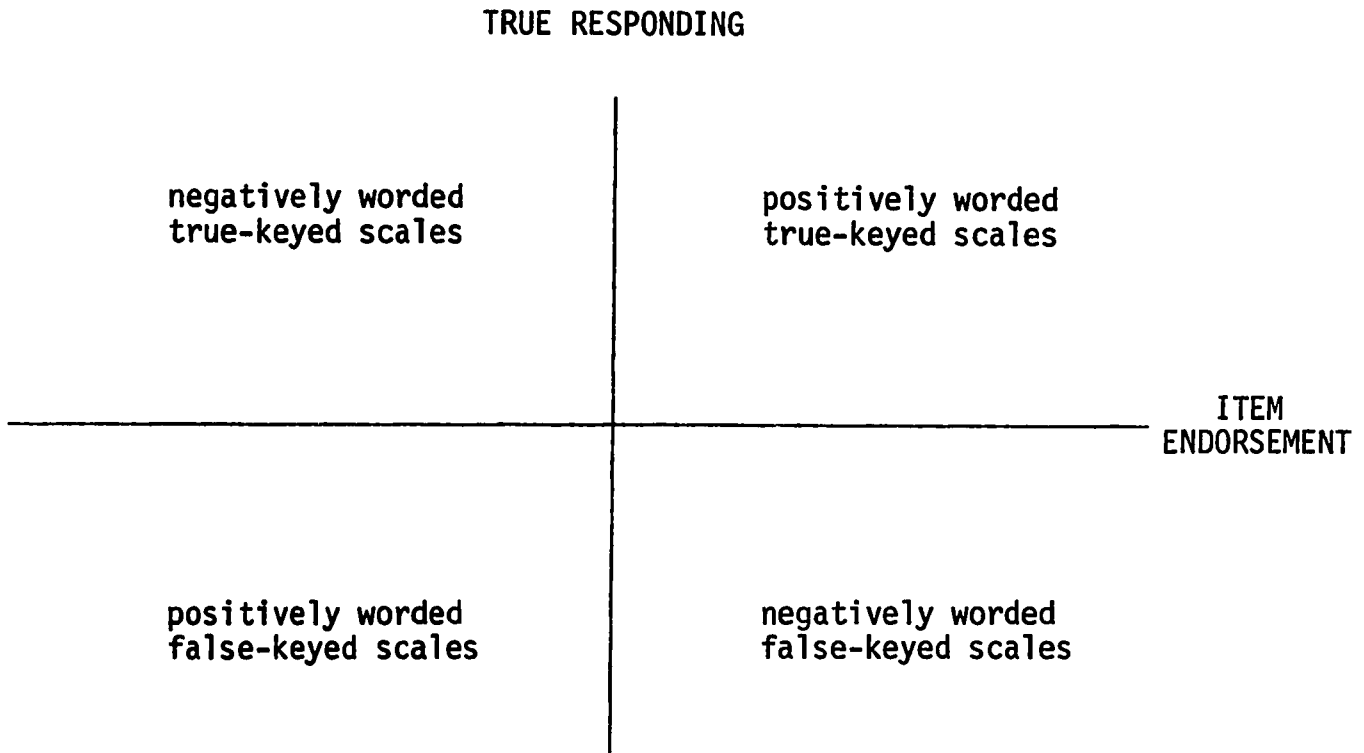


Figure 1 Predicted location of scales as defined by hypothetical item endorsement and true responding factors.

Keniston's (1960) interpretation of acquiescence. Messick (1967) suggests that stimulus acceptance and item endorsement are related and that interpretive acquiescence and true responding may be related. There is some evidence of interrelationships between self-descriptive scales, item endorsement, and impulsive acceptance (Messick, 1967) and between acquiescence and the F scale (Hyman & Sheatsley, 1954; Fredericksen & Messick, 1959; Messick & Fredericksen, 1958; Messick & Kogan, 1965). These complex relationships raise the possibility of demonstrating that true responding and item endorsement are two very basic and broad response tendencies which cover all or most of the various tendencies which have been grouped together under the label acquiescence.

In order to examine this possibility in more detail, Table 2 has been drawn up. It presents the various tendencies which have been referred to by the label acquiescence. The most important of these are characterized by their source, the F scale or the MMPI, and by the processes assumed to underly them. Jackson (1967a, p. 74) restates a distinction made by Jackson and Messick (1958): "The two species of acquiescence most firmly established are those elicited by aphorisms and attitude statements cast in the style of the F scale.... and the tendency to endorse many symptoms or characteristics in standard personality items." This distinction comes close to the first classification of acquiescence, on the basis of source, shown in Table 2. That such a classification is justified, that attitude scales and primarily self-descriptive personality scales elicit different acquiescence response

Table 2

Relationships between Different Acquiescence Response Sets

Response Sets Characterized by their Source(Lichtenstein & Bryan, 1965; Jackson, 1967a;
Jackson & Messick, 1958; Martin, 1964)

Acquiescence elicited by
personality inventories.
The salient attribute of
the items which elicit it
is their self-reference.
Jackson and Messick (1965)
distinction:

Acquiescence elicited
by F scale type scales

item endorsement
(accounted for by
Jackson's (1968)
threshold model.
Corresponds to
Messick's (1967)
"acceptance")

true responding

Corresponds to
Messick's (1967)
"agreement")

Response Sets Characterized by Processes Assumed to Underly Them

(Damarin & Messick, 1965; Messick, 1967)

Impulsive acceptance
("temperamentally based"
and "reminiscent"
(Messick, 1967) of item
endorsement or acceptance)

Interpretive acquiescence
("intellectually based" and
related to acquiescence
elicited by the F scale)

sets, is indicated clearly by the factor analytical studies of Martin (1964) and Quinn and Lichtenstein (1965). Within this dichotomy, as Table 2 shows, there is a second dichotomy based on the Jackson and Messick (1965) study showing that while the MMPI elicits primarily item endorsement, it also elicits some true responding. The second broad classification of acquiescence response sets shown in Table 2 is based on the review by Damarin and Messick (1965) of factor analytical studies involving behavioural tests carried out by Cattell and his co-workers.

Table 2 suggests further research on actual or possible links between impulsive acceptance and item endorsement, interpretive acquiescence and true responding, self-descriptive personality scales and item endorsement, F scale type attitude scales and true responding, self-descriptive personality scales and impulsive acceptance, and F scale type acquiescence scales and interpretive acquiescence. Table 2 also suggests a basic dichotomy between self-descriptive scales, item endorsement, and impulsive acceptance (Messick, 1967) on one hand, true responding, attitude scales, and acquiescence on the other. This dichotomy would be the "tidy" dichotomy envisaged by Messick (1967) and it could be regarded as essentially a dichotomy between true responding and item endorsement. The weakest link in this scheme, and the one of the greatest relevance to this study, is that between the F scale or attitude items and true responding (Messick, 1967).

Thus, the basic problem the study addresses itself to is the separation of true responding from item endorsement. This can be done

factor analytically. Beyond that the study also seeks to explore the possibility that true responding and item endorsement are the two basic response tendencies underlying what has been labeled acquiescence.

Acquiescence Elicited by the F Scale

In this and the next section, the literature pertaining to the aims and problems raised in the preceding will be reviewed in more detail. The two tests on which acquiescence research has focused, the F scale and the MMPI, will be discussed separately. In relation to both tests the first question concerns the importance of the role of acquiescence. If acquiescence were a "myth" (Rorer, 1965), attempts to distinguish between true responding and item endorsement would be futile. The second question concerns the possible links between the attitude items of the F scale and true responding, and the self-descriptive personality items of the MMPI and item endorsement.

The development of the F scale and related attitude scales (Adorno et al., 1950) raised seriously the possibility that acquiescence is, in Jackson and Messick's (1962b) terms, an expression of personality and a response style, rather than a response set. The F scale consists of 29 items, all of them true-keyed. Its authors were aware that its uniform keying would expose it to criticism, but their false-keyed items reflecting authoritarian attitudes failed to correlate adequately with the total scale. The low content correlations of these items have been taken as an indication that acquiescence is part of the authoritarian syndrome by several investigators (Gage & Chatterje, 1960; Gage, Leavitt, & Stone, 1957; Leavitt, Hax & Roche, 1955;

Zuckermann & Eisen, 1962). Gage and Chatterje (1960), for example, showed that items of the Minnesota Teacher Attitude Inventory (Cook, Leeds, & Callis, 1951) expressing authoritarian beliefs discriminated more adequately than items expressing anti-authoritarian beliefs between teachers judged to be authoritarian and nonauthoritarian by school principals. They regarded the tendency to respond true as an element of "authoritarian submission" (Adorno et al., 1950, pp. 230-232), and attributed the lower validity of false-keyed items to conflicting response tendencies elicited by them in authoritarian subjects. According to their interpretation, authoritarian subjects are inclined to respond true to these items because of their authoritarian submissiveness, and false because these items reflect anti-authoritarian content.

It is best, however, to distinguish clearly between acquiescence and authoritarian beliefs. In spite of Adorno et al.'s (1950) lack of success, other attempts have been made to obtain authoritarianism scores from balanced F scales consisting of equal numbers of true-keyed and false-keyed items. The correlation between such authoritarianism scores and acquiescence scores are moderate (cf. Chapman & Bock, 1958; Clayton & Jackson, 1961; Couch & Keniston, 1960; Gage & Chatterje, 1960; Zuckermann & Eisen, 1962). The two appear to share some trait or traits, but they are by no means identical (Damarin & Messick, 1965; Jackson, 1967a).

The F scale thus confounds content and true responding because all of its items are true-keyed. Not only are all of its items true-keyed, all of them are also acceptance-keyed. This means that the F

scale confounds not only authoritarian ideology and true responding, but also item endorsement. Even those F scale items which contain a negation must be regarded as acceptance-keyed because opinions and beliefs, unlike personality characteristics, can be negatively worded. A respondent who answers true to the item "I am not tall" is rejecting a characteristic as not descriptive of himself, but a respondent who responds true to the item "A person who has bad manners, habits, and breeding can hardly expect to get along with decent people" is endorsing a negatively worded opinion. This does not mean that any negatively worded attitude item can be endorsed by a true response. To be endorsed by a true response, negatively worded statements must be strongly worded. In general, strongly worded means positively worded, but when statements are cast in the form of sweeping generalizations, as in the example above and in the F scale in general, this need not be the case.

The F scale thus constitutes a scale which may reflect authoritarian beliefs, true responding, and item endorsement. It raises questions concerning the extent to which it reflects authoritarian ideology and acquiescence, to what extent the acquiescence it elicits is true responding, and to what extent it is item endorsement.

The role of acquiescence on the F scale. Opinions on the degree to which the F scale reflects acquiescence diverge widely. Rorer (1965, p. 138) concluded that even if the evidence is "interpreted unequivocally as showing the effects of acquiescence" it shows "that effect to be small". Block (1965, p. 9) is less categorical, according to him the "debate on the role of acquiescence within the F and related scales

continues, with no clear verdict yet in sight". Jackson (1967a), Messick (1967), and Peabody (1961, 1966), among others, attribute a major portion of the variance of F scale scores to acquiescence.

Different strategies have been used in attempts to clarify the role of acquiescence on the F scale. The F scale has been correlated with acquiescence measures (e.g. Cohn, 1954) but the correlations obtained are difficult to interpret because of the complexity of the syndrome reflected by it. Factor analytical studies (Martin, 1964; Quinn & Lichtenstein, 1965) throw more light on this problem, but the case for acquiescence on the F scale rests primarily on evidence obtained by means of the item reversal approach pioneered by Ancona (1954).

Basically, this approach involves the administration of original and reversed F scale items. On the basis of ideological content, one would expect a high positive correlation if the scales are scored for content, a high negative correlation if they are scored for agreement or acquiescence. In the first case, a negative correlation; in the second case, a positive correlation would be in the acquiescence direction.

While this design may look simple, the writing of appropriate reversals is not. This is due to the complexity of the F scale items. They have a denotative or logical meaning as well as an "irrational" (Adorno et al., 1950), "authoritarian" (Peabody, 1966), or "psychological" (Christie, Havel, & Seidenberg, 1958) meaning. It is difficult, if not impossible, to reverse both aspects of an F scale item, and it is the authoritarian meaning most authors have attempted to reverse (Peabody, 1961; Christie et al., 1958). This focus on the authoritarian meaning

raises the possibility of logically consistent double agreements and disagreements, i.e. of logically consistent agreement with both an item and its reversal or logically consistent disagreement with an item and its reversal (Peabody, 1966; Rorer, 1965; Samelson, 1964; Samelson & Yates, 1967).

An example cited by Rorer (1965) illustrates this problem.

One of the F scale items is

Young people sometimes get rebellious ideas but as they grow up they ought to get over them and settle down.

The reversal written for this item by Peabody (1961) is

Young people ought not to give up all of their rebellious ideas as they grow up.

Rorer points out that both items can be rejected by respondents who do not feel "that there is any basis for saying that anything ought or ought not to be" (p. 136). Peabody (1966) indicates that he was aware of this type of objection, and that he aimed to write reversals in such a manner that consistent agree responses could not reflect a logically and psychologically consistent authoritarian position. To obtain such reversals, he was willing to pay the price of double disagreements reflecting a logically consistent anti-authoritarian position. It is clear that the results of each item reversal study must be interpreted with these problems raised by the complexity of the F scale items in mind.

The evidence produced by the item reversal studies will be examined next. Four different variations of the item reversal approach can be distinguished.

(1) Original F scale item scales and reversed F scale item scales were correlated. This is the basic item reversal approach. Most correlations obtained were lower than would be expected on the basis of content and of the scale reliabilities, and some were clearly in the acquiescence direction. The Christie et al. (1958) study is the most detailed investigation of this type. Christie et al. wrote reversals which discriminated between high and low F scale scorers. Testing 12 samples, they obtained correlations reflecting definite but moderate degrees of acquiescence. Lower correlations than, or correlations in the opposite direction from, what would be expected on the basis of content could reflect both a tendency to agree and a tendency to disagree. If the scales are scored for content, i.e. if the originals are true-keyed and the reversals false-keyed, a tendency to agree would produce high scores on the originals and low scores on the reversals, while a tendency to disagree would produce low scores on the originals and high scores on the reversals. Christie et al. examined their data in order to be able to assess the relative contributions of these two tendencies in pushing the correlations in the acquiescence direction and they found that the tendency to agree was somewhat stronger than the tendency to disagree.

In a similar and earlier study; Jackson, Messick, and Solley (1957) obtained a substantial correlation of .35 in the acquiescence direction. Unlike Christie et al., they used reversals which, like the original F scale items, were sweeping generalizations. There is some controversy about whether relatively worded or absolutely worded,

i.e. probabilistic statements of the type used by Christie et al. or sweeping generalizations of the type used by Jackson et al., constitute the most appropriate reversals to assess the role of acquiescence on the F scale. The F scale appears to reflect acquiescence, a tendency to overgeneralize that has been regarded as a specific type of acquiescence, and content. Christie et al. isolated and examined the role of acquiescence which does not depend on the sweeping generalization format of the F scale only, on the grounds that the tendency to overgeneralize may be closely linked to authoritarianism because authoritarian subjects are intolerant of ambiguity. This is an assumption not supported by some results (Clayton & Jackson, 1961). Being dependent on the form of items, the tendency to overgeneralize is a response set, and the use of absolutely worded reversals pits content against response sets and yields a better estimate of the importance of the latter in relation to the F scale than those obtained by Christie et al.

(2) The consistency of responses to individual pairs of original F scale items and their reversals was examined. Peabody (1961) found that 33 per cent of the pairs of responses made to F scale items and their reversals were agree-agree response patterns or double agreements, nine per cent were disagree-disagree response patterns or double disagreements. The remaining response patterns were consistent in terms of content, i.e. agree-disagree patterns reflecting authoritarianism and disagree-agree patterns reflecting anti-authoritarianism. Peabody obtained similar results with other scales related to the F scale and

concluded that the tendency to agree is stronger than the tendency to disagree and that acquiescence plays an important role on the F scale and related scales.

This interpretation came under attack from two sides. Rokeach (1963, 1967) suggested that Peabody's conclusions rest on two unjustified assumptions: that scales which, together with their reversals, elicit many double agreements consist of ambiguous items and that the ambiguity of items and the amount of acquiescence they elicit are positively correlated. The evidence indicates, however, that Peabody's inferences concerning the ambiguity of his items were reasonably accurate (Miklich, 1965) and that acquiescence is a function of item ambiguity as he suggests (Cronbach, 1942, 1946, 1950; Bass, 1955; Banta, 1961; McBride & Moran, 1967; Trott & Jackson, 1967).

This does not rule out the possibility that a content interpretation is more useful than Peabody's set interpretation. Rokeach (1963, 1967) also advanced two content hypotheses: according to the first, double agreement is a consequence of a tendency of authoritarian subjects to "lie deliberately" on the reversals because agree responses to them are prodemocratic and socially desirable; according to the second, inconsistent subjects have a weak need for logical consistency. One of the scales which Peabody used and to which Rokeach's alternative hypotheses are meant to apply is the Dogmatism scale. Stanley and Martin (1964) obtained a significant negative correlation between the Martin Social Desirability Scale and the original Dogmatism scale. Subjects who agree with many items of the original Dogmatism scale

thus appear to be responding in the socially undesirable direction. This makes it unlikely that those respondents who agree with originals and reversals, agree with the reversals because agree responses to them are socially desirable. This inference is supported by the non-significant correlation Stanley and Martin obtained between the Martin Desirability Scale and the reversed Dogmatism scale for these subjects. In his latest paper, Rokeach relies more heavily on his second hypothesis, but it remains to be subjected to empirical test.

Peabody also came under attack on psychometric grounds. Samelson (1964) saw double agreement as a function of stimulus variables, i.e. the item reversals used, rather than organismic variables. More specifically, he argued that Peabody's F scale items were not symmetrically reversed and that, as a result, a respondent can agree with both the originals and the reversals without being logically inconsistent. Two studies throw doubt on the correctness of this interpretation. Miklich (1966) found that double agreement scores are sufficiently reliable to be regarded as measures of subject characteristics, and Peabody (1966) demonstrated that of the seven F scale item-reversal pairs eliciting double agreement most reliably, at best two fit Samelson's hypothesis. Peabody's results remain the most convincing evidence in support of the view that acquiescence plays a major role on the F scale.

(3) The correlations between the original F scale and original and reversed versions of other attitude and personality scales were compared. Many authors (Bass, 1957; Christie et al., 1958; Messick &

Jackson, 1957, 1958; Ong, 1963; Peabody, 1966; Rorer, 1963, 1965) have discussed the difficulties raised by reversing F scale items, at least one (Kerlinger, 1967) has concluded that it is impossible to reverse them. Campbell, Siegman, and Rees (1967) sidestepped this issue by correlating the original F scale with original and adequately reversed versions of other scales. An example of a successfully reversed scale is the Ethnocentrism scale (Adorno et al., 1950): Chapman and Campbell (1959) report a correlation corrected for attenuation of .94 between the original and a reversed version. Campbell et al. (1967) found that their correlations between the original F scale and true-keyed original versions of successfully reversed scales were significantly higher than those between the original F scale and the false-keyed reversed versions of these other scales. They report, for example, correlations corrected for attenuation of .76 and .56 between the original F scale and the original and reversed ethnocentrism scales mentioned above. The difference between these correlations thus reflect a tendency which leads to high correlations among pairs of scales consisting of two true-keyed scales, and to low correlations between pairs of scales consisting of one true- and one false-keyed scale. True responding, for reasons detailed earlier, is the most likely tendency to produce such differences among correlations.

(4) The item reversal technique was extended by means of mathematical models. Some of these permit separation of variance components attributable to acquiescence and to content (Chapman & Bock, 1958; Rorer & Goldberg, 1965b); others yield separate set and content scores

(Helmstadter, 1957; Messick, 1961; Peabody, 1964). These techniques require a set of items and their reversals, or at least a set of true-keyed and false-keyed items measuring the same dimension. Substantial proportions of variance attributable to acquiescence and reliable acquiescence set scores were obtained by means of this approach (e.g. Chapman & Bock, 1958; Clayton & Jackson, 1961).

All four item reversal approaches reviewed have produced results supporting the view that acquiescence plays more than a negligible role on the F scale. This conclusion appears to be justified even if the evidence is interpreted sceptically and with the methodological problems involved in writing adequate reversals in mind.

The F scale and true responding. Since the F scale reflects acquiescence, and since item endorsement and true responding are confounded on it because its items are positively worded or strongly worded and true-keyed, the question arising next concerns the relative strengths of true responding and item endorsement elicited by the F scale. Messick (1967, p. 144) makes the point that it would be "tidy" if the true responding he and Jackson (Jackson & Messick, 1965) isolated on the MMPI could be equated with the interpretive acquiescence he and Damarin (Damarin & Messick, 1965) detected on the F scale. This raises the question whether the evidence permits hypothesizing such a link.

Some indirect evidence appears to justify such a hypothesis. First, the F scale and self-descriptive personality scales elicit different types of acquiescence (Martin, 1964; Quinn & Lichtenstein, 1965) and the primarily self-descriptive MMPI appears to elicit primarily

item endorsement (Jackson & Messick, 1965). This makes it unlikely that the F scale elicits much item endorsement. The nature of the F scale items decreases this likelihood further. They have external referents, hence are unlikely to elicit self-description, the process assumed to underly item endorsement (e.g. Messick, 1967). The smaller the probability that it elicits item endorsement, the greater the probability that it elicits true responding. Second, one can speculate about the processes underlying true responding, and argue that it resembles conformist behaviour (Stricker, 1963). Some evidence indicates clearly that true responding and conformity are related (Quinn, 1963), other evidence suggests that acquiescence elicited by the F scale, authoritarianism, and conformist behaviour are elements of a broad dimension (e.g. Berg, 1967; Gage & Chatterje, 1960). There thus appear to be possible links between the acquiescence elicited by the F scale and conformity, and between true responding and conformity. This makes a direct link between the acquiescence elicited by the F scale and true responding more likely.

Acquiescence Elicited by the MMPI

The MMPI is the second of the two tests on which acquiescence research has focused. The MMPI, like the F scale, confounds true responding and item endorsement. About 80 per cent of its items are positively worded and a majority (whose exact size depends on the scales scored) are true-keyed. As in the case of the F scale, the importance of these factors is a matter of dispute. Those who regard acquiescence as having a negligible influence have stated their case in an even more

final manner in relation to the MMPI than to the F scale (Block, 1965; Rorer, 1965) and some who regard acquiescence as a major factor on the F scale dismiss its effect on the MMPI (Peabody, 1966; Dicken, 1967). The case for the acquiescence hypothesis in relation to the MMPI must be examined carefully.

One of the chief differences between the F scale and the MMPI is that the former consists entirely of attitude items with external referents, while the latter consists largely of self-descriptive or personality items. Its self-descriptive format increases the probability that the MMPI elicits primarily item endorsement, a process in which self-description plays a role. The evidence relevant to this possibility will be pursued in more detail.

The role of acquiescence on the MMPI. Two main approaches have been used to separate content and acquiescence in the MMPI and to estimate the portions of variance attributable to them.

(1) The item reversal approach has been applied to the MMPI scales. In general, studies using this approach yielded correlations between original and reversed scales in the content direction and close to the maximum values the reliabilities of these scales would permit (Chapman & Campbell, 1959; Desoto & Kuethe, 1959; Dicken & VanPelt, 1967; Lichtenstein & Bryan, 1965; Rorer & Goldberg, 1965a, 1965b). These results have been interpreted as evidence against the hypothesis that acquiescence plays an important role on the MMPI. This interpretation implies that acquiescence is identical with true responding and does not take into account the possibility that there is a tendency to

endorse items which is confounded with content in the item reversal studies. A respondent high on item endorsement and another respondent high on a particular content dimension will both obtain high scores on the original version of a scale measuring this particular content dimension and low scores on its reversals, and high correlations between original and reversed scales in the content direction could be due to either content or item endorsement. To determine what contribution these tendencies make to the correlation, consistencies in the subjects' performance across different content dimensions must be examined, and this leads to the use of scales measuring different content dimensions and to multivariate studies.

(2) Factor analytical studies of the MMPI scales have yielded acquiescence factors accounting for major proportions of the variance. For each of a number of factor analytical studies of MMPI scales which they examined, Messick and Jackson (1961a) obtained a high and positive correlation between the number of true-keyed items of the scales and the scale loadings on the first factor. The first factors of these studies thus appear to reflect acquiescence. Confirmation of this interpretation came from studies specifically designed to allow acquiescence to emerge more clearly (Jackson & Messick, 1961, 1962a). In these studies, separate true- and false-keyed MMPI subscales were factor analyzed and two major factors emerged: acquiescence, separating true- and false-keyed subscales, and social desirability.

The interpretation of the factors separating true-keyed and false-keyed scales in terms of acquiescence has come under attack from

a number of investigators. Edwards and his colleagues have argued that they reflect social desirability and are a function of the items keyed in the socially desirable direction rather than of the true-keyed items (Edwards, 1961; Edwards & Diers, 1962; Edwards & Heathers, 1962). On the surface, this is a plausible alternative to the acquiescence interpretation since for the MMPI there is a substantial correlation of about .55 (as estimated by Rorer, 1965) between item keying and social desirability. Block (1965) argued that Jackson and Messick's (1961, 1962a) use of overlapping scales caused an artificial clustering of the true-keyed and of the false-keyed subscales since the keying of items appearing in more than one MMPI scale is relatively constant. Several investigators (Block, 1965; Rorer, 1965; Dicken, 1967) regard the factors separating true- and false-keyed scales partly as a consequence of the confounding of item keying and content. Dicken (1967), for example, showed that true-keyed MMPI items tend to reflect serious pathology while false-keyed items tend to reflect somatic complaints.

The merits of these criticisms vary. Jackson (1967c) showed that Block's criticism in terms of item overlap is based on statistical errors and that the item overlap variance of the Jackson and Messick (1961, 1962a) studies did not affect the major factors and can be accounted for by four minor factors. Jackson (1968) also constructed a new model which clarifies the relationship between acquiescence elicited by the MMPI and desirability responding and which assigns to both clearly different and important roles. Finally, a relationship between content and direction of keying does not rule out the operation

of acquiescence. Conceived of as a response style, acquiescence may be related to personality traits, and this complicates the explanation of the relationship between keying and content (Jackson, 1967c).

More important, however, in countering these criticisms is that the acquiescence interpretation of the MMPI no longer focuses on factors separating true-keyed and false-keyed scales. Instead, it focuses presently on factors separating acceptance-keyed and rejection-keyed scales, i.e. on item endorsement. The study which initiated this shift is that of Jackson and Messick (1965). What appeared to be contradictory results obtained by Jackson and Messick (1961, 1962a) and Rorer and Goldberg (1965a, 1965b) caused Jackson and Messick (1965) to re-analyze the Rorer and Goldberg (1965a, 1965b) data. Rorer and Goldberg (1965b), it will be recalled, obtained high positive correlations between original true-keyed and reversed false-keyed MMPI scales whose size approximated the scale reliabilities. Their scales were keyed in the direction of content, and a positive correlation between original true and reversed false scales is thus in the content direction. Jackson and Messick (1965) factor analyzed Rorer and Goldberg's true- and false-keyed subscales of both the original and reversed MMPI scales. Since most of the original MMPI items are positively worded, and since most of Rorer and Goldberg's reversals are negatively worded, Jackson and Messick were dealing with four sets of scales: true-keyed and mostly positively worded original subscales, false-keyed and mostly positively worded original subscales, true-keyed and mostly negatively worded reversed subscales, and false-keyed and mostly negatively worded

reversed subscales. For both male and female subjects, Jackson and Messick obtained a factor which separated the true-keyed original and false-keyed reversed subscales from the false-keyed original and true-keyed reversed subscales, i.e. essentially acceptance-keyed from essentially rejection-keyed scales. They also obtained a small true responding factor for male and for female subjects.

The Jackson and Messick reanalysis accounts for Rorer and Goldberg's correlations between original and reversed MMPI scales in terms of item endorsement and, as far as the MMPI is concerned, it shifts the emphasis from true responding to item endorsement. This reduces the relevance of much of the criticism leveled against the acquiescence interpretation of the MMPI. Even if the merits of the criticisms leveled against the earlier acquiescence position were substantial, their relevance to the multidimensional acquiescence interpretation (Jackson & Messick, 1965; Bentler, Jackson & Messick¹) would have to be explored in more detail.

The MMPI and item endorsement. The evidence appears to indicate quite clearly that the MMPI elicits primarily item endorsement. The major acquiescence factor obtained by Jackson and Messick (1965) separated scales which were primarily positively worded from scales which were primarily negatively worded. The item reversals studies of the MMPI do not reflect true responding and some have produced evidence of

¹Bentler, P., Jackson, D. N., & Messick, S. A multidimensional interpretation of response style. In preparation.

item endorsement (Desoto & Kuethe, 1959; cf. Dicken, 1967).

Jackson's (1968) new model clarifies the relationship between acquiescence elicited by the MMPI and social desirability, and it also suggests strongly that the acquiescence elicited by the MMPI is primarily item endorsement. Jackson counted the number of true responses made by high acquiescers and low acquiescers on each of 28 heterogeneous MMPI scales ranging in desirability from highly undesirable to highly desirable. The two groups differed most on somewhat undesirable scales and they did not differ on the extreme scales. This led him to reinterpret acquiescence as a function of a desirability or endorsement threshold, the value of an item on the desirability dimension at which it elicits a true response with a given probability. The threshold varies from individual to individual, it is low for high acquiescers and high for low acquiescers, i.e. high acquiescers tend to respond true to less desirable items than low acquiescers. Jackson sees this threshold as one of two parameters accounting for a major portion of the variance due to response set on the MMPI. The other is the biserial correlation between a subject's desirability ratings of items and his endorsement or non-endorsement of them. Rogers² selected a random sample from a population of hypothetical subjects normally distributed with respect to their desirability or endorsement threshold, generated their MMPI scale scores on the basis of their threshold values, and replicated the

²Rogers, T. Monte Carlo simulation of the factor structure of the MMPI. In preparation.

factor structure obtained by Jackson and Messick (1961, 1962a). The threshold parameter thus appears to account for the separation of true- and false-keyed scales obtained in these earlier studies and initially explained in terms of true responding.

Hypotheses

The focus of the study may be restated in terms of two related questions. Does the label acquiescence refer to empirically unrelated response tendencies of which the two most important are true responding and item endorsement? If so, is true responding primarily elicited by attitude items with external referents while item endorsement is primarily elicited by self-descriptive personality items?

The reasons for asking the first question have already been dealt with in detail. Those for asking the second question require some elaboration. The preceding review of the literature of acquiescence indicates quite clearly that a distinction must be made between acquiescence elicited by the F scale and acquiescence elicited by the MMPI. It also indicates that the former may be primarily true responding, while the latter may be primarily item endorsement.

This raises questions concerning the differences in item properties between the F scale and the MMPI. The two tests differ most obviously in item ambiguity and in type of referent (external referents versus the self of the respondent). F scale items appear to be very ambiguous (Miklich, 1965; Peabody, 1966); they certainly are more ambiguous than MMPI items. The latter are shorter, they are not cast in the form of sweeping generalizations which give rise to confusion,

their referent is constant and relatively unambiguous and they elicit, because of the type of referent they have, more desirability responding. All of these factors are likely to make them less ambiguous than the F scale items. Such a difference in item ambiguity has a direct bearing on the assumption that F scale items elicit true responding more strongly than MMPI items. Cronbach (1942) postulated very early a relationship between item ambiguity and acquiescence and, for reasons discussed, it is likely that he regarded acquiescence as true responding.

It is the second difference--the difference in type of referent--which is of primary interest in this study, however. The F scale items have external referents like 'criminals' and 'young people', while most of the MMPI items are self-descriptive. Item endorsement implies self-description, and responses to self-descriptive items explicitly constituting self-description are likely to reflect it strongly. In the case of external referent attitude items, self-description is at best implicit and item endorsement is likely to play a less important role. The preceding examination of the acquiescence literature related to the F scale and to the MMPI suggested that the former elicits primarily true responding and the latter primarily item endorsement. This difference is probably a manifestation of a difference between the broader categories of attitude items and self-descriptive personality items in general.

Hypothesis 1. A factor analysis of a battery of appropriate scales will yield a true responding factor separating true-keyed and false-keyed scales and an item endorsement factor separating acceptance-keyed and rejection-keyed scales.

By appropriate battery is meant a battery consisting of scales of positively worded true-keyed, positively worded false-keyed, negatively worded true-keyed, and negatively worded false-keyed formats or variations. Positive true and negative false scales are acceptance-keyed, since a high score on them reflects item endorsement. Positive false and negative true scales are rejection-keyed; a high score obtained on them reflects item rejection. Hypothesis 1 implies that the two factors will define four quadrants and that each quadrant will contain scales of only one wording and keying variation as illustrated in Figure 1.

Hypothesis 2. As a result of their external referent format, attitude items tend to elicit true responding more strongly than item endorsement.

The word strongly as used here requires some elaboration. Its meaning can best be clarified by referring to a hypothetical long scale, heterogeneous in content, consisting of equal numbers of positively worded true-keyed, positively worded false-keyed, negatively worded true-keyed, and negatively worded false-keyed attitude items. Such a scale could be scored for both true responding and item endorsement. To score it for true responding, one would count the number of true responses. To score it for item endorsement, one would count the number of true responses to positively worded items and the number of false responses to negatively worded items. Hypothesis 2 implies that the variance and the reliability of the true responding scores would be greater than those of the item endorsement scores. It also implies that

attitude scales will have higher loadings in the predicted direction on a true responding factor than on an item endorsement factor. The latter is the implication the study will examine.

Hypothesis 2, as explained earlier, is based on the assumption that external referent attitude items elicit self-description at best implicitly and indirectly, and that they therefore are not likely to elicit item endorsement strongly. It is also based on evidence indicating that both the acquiescence elicited by the F scale and true responding are related to authoritarianism and conformity (Gage & Chatterje, 1960; Stricker, 1963) and on evidence indicating that a battery consisting largely of social attitude items other than F scale items elicit acquiescence which is positively correlated with conformity (Quinn, 1963).

Hypothesis 3. As a result of their self-descriptive format, personality items tend to elicit item endorsement more strongly than true responding.

The implications of hypothesis 3 are analogous to those of hypothesis 2. The focus again will be on the implication that personality scales should have higher loadings in the predicted direction on an item endorsement factor than on a true responding factor. Hypothesis 3 follows from the discussion of the MMPI and its relation with item endorsement. It is based on the assumption that MMPI items are representative of personality items and that if they elicit item endorsement more strongly than true responding, it is because of their self-descriptive format since this format makes their desirability level a crucial variable and causes the subjects to respond on the basis of their item endorsement threshold as specified by Jackson's (1968) new model.

METHOD

Subjects

The sample tested consisted of 87 male and 108 female students enrolled at a small Canadian university. The subjects ranged in age from 16 to 34 years, the median age was 18. In education, they ranged from high school matriculation to fourth year university; the median educational level was second year university.

Measures

A two-part questionnaire consisting of 560 items and an adjective checklist were used to measure 51 variables (see Appendix A). The questionnaire was labeled Trait and Attitude Survey. This label appeared likely to sound plausible to the subjects and to dissimulate the purpose of the questionnaire. The questionnaire consisted of 47 scales. Of these, 32 were experimental scales, 14 were marker variables measuring acquiescence and desirability, and one scale was included to check on the validity of the records obtained. This last scale consisted of items with extreme endorsement frequencies selected from the Infrequency scale of the Personality Research Form (PRF), Form A. The subjects were instructed to answer yes or no to the items. The adjective checklist was designed to yield three scores: the number of desirable, neutral, and

undesirable adjectives checked as self-descriptive. The questionnaire scales and the adjective checklist variables are listed in Table 3.

Experimental scales. The 32 experimental scales were made up of four groups of eight scales. Each group reflected one of the following PRF traits or content areas: Exhibition, Play, Succorance, and Understanding. A group of eight scales consisted of a set of four self-descriptive scales and a set of four attitude scales, and each set of four scales included a positively worded true-keyed scale, a positively worded false-keyed scale, a negatively worded true-keyed scale, and a negatively worded false-keyed scale. All of these scales were content keyed.

Exhibition, Play, Succorance, and Understanding were the content areas selected for a number of reasons. They yield a large number of suitable items from the source of items for the experimental scales, the original PRF item pool. They imply a mode of orientation towards others, work, direction from others, and objects and ideas respectively (Jackson, 1967b). As a result, they were expected to yield self-descriptive items which could be translated relatively easily into the attitude item form. The correlations between the PRF scales which measure them and desirability are low, similar for males and females, and they tend to balance each other out--two of the scales have small, positive correlations with desirability, two have small negative correlations (Jackson, 1967b). Finally, the correlations between the PRF scales measuring these content areas are low (Jackson, 1967b). The four content areas selected appeared to form a content domain neutral in desirability on the average, and

Table 3

List of Variables

<u>Experimental Scales</u>				
Label	Content	Format	Wording	Keying
ESPT	Exhibition	self-descriptive	positive	true
ESPF	"	"	positive	false
ESWT	"	"	negative	true
ESNF	"	"	negative	false
EAPT	"	attitude	positive	true
EAPF	"	"	positive	false
EANT	"	"	negative	true
EANF	"	"	negative	false
PSPT	Play	self-descriptive	positive	true
PSPF	"	"	positive	false
PSNT	"	"	negative	true
PSNF	"	"	negative	false
PAPT	"	attitude	positive	true
PAPF	"	"	positive	false
PANT	"	"	negative	true
PANF	"	"	negative	false
SSPT	Succorance	self-descriptive	positive	true
SSPF	"	"	positive	false
SSNT	"	"	negative	true
SSNF	"	"	negative	false
SAPT	"	attitude	positive	true
SAPF	"	"	positive	false
SANT	"	"	negative	true
SANF	"	"	negative	false
USPT	Understanding	self-descriptive	positive	true
USPF	"	"	positive	false
USNT	"	"	negative	true
USNF	"	"	negative	false
UAPT	"	attitude	positive	true
UAPF	"	"	positive	false
UANT	"	"	negative	true
UANF	"	"	negative	false

Questionnaire Marker Scales

Label	Content	Source of Items	Wording	Keying
HMPT	heterogeneous	MMPI	positive	true
HMPP	"	"	positive	false
HMNT	"	"	negative	true
HMNF	"	"	negative	false
HPPT	"	PRF	positive	true
HPPF	"	"	positive	false
HPNT	"	"	negative	true
HPNF	"	"	negative	false
FRT		F scale	relative	true
FRF		"	relative	false
FAT		"	absolute	true
FAF		"	absolute	false
DA		desirability scale (PRF Form A)		
DB		desirability scale (PRF Form B)		

Adjective Checklist Variables

Label	Description
AD	Desirable adjectives
AN	Neutral adjectives
AU	Undesirable adjectives

Other Variables

Label	Description
IMFR	Infrequency scale
SEX	

they appeared to sample four independent content areas, each of which is by itself as neutral in desirability as possible.

The endorsement frequency, differential reliability index (DRI; Jackson, 1967b), and correlation with desirability of the items constituting the original PRF item pool of over 2000 items were available. They were used to select items likely to elicit a maximum of acquiescence for the self-descriptive scales. The self-descriptive items selected ranged in relative endorsement frequency from .22 to .73. This made them reasonable controversial (Hanley, 1962) and ambiguous (Wiggins, 1962) and likely to elicit acquiescence (Cronbach, 1942, 1946, 1950; Trott & Jackson, 1968). The correlations between the items selected and the desirability scale used in the construction of the PRF ranged from -.32 to .23. As Damarin and Messick (1965, p. 8) have phrased it, it appears that if "an item can measure social desirability it will; if it cannot, it may then be suitable for an acquiescence test". The relatively neutral items selected appeared unlikely to elicit desirability responding sufficiently strong to suppress acquiescence. Finally, the DRI's of the items range from .17 to .50. The DRI "may be considered the portion of the variance for a given item associated with the total scale score for a given trait, from which the variance shared by the item and a desirability scale has been subtracted" (Jackson, 1967b, p. 16). It is defined by the formula

$$DRI = \sqrt{r_{is}^2 - r_{id}^2}$$

where:

r_{is} is the biserial correlation between an item and its own

scale, and

r_{id} is the biserial correlation between an item and a desirability scale.

It is thus a more refined measure of content saturation than the point biserial correlation between an item and its total scale because it takes into account the possibility that this correlation could be attributable to shared desirability rather than shared content variance. The DRI's of the selected items indicate that they measured the appropriate content, but that their content saturation was moderate. Trott and Jackson (1967) have shown that moderately content saturated items elicit more acquiescence than highly content saturated items.

The items obtained were translated or translated and duplicated, until there were six items in each of the positively worded true-keyed, positively worded false-keyed, negatively worded true-keyed, and negatively worded false-keyed self-descriptive scales. As used here, translation of an item means changing its form (e.g. from positively worded to negatively worded) and duplication of an item means using it twice in different form. Twelve items were duplicated because not enough suitable items were available for some of the scales.

Experimental attitude scales, parallel to the 16 self-descriptive scales, were obtained by translating the self-descriptive items into attitude items as literally as possible. For the purpose of this study, attitude items were defined as items having an external referent and eliciting an evaluative response toward it. Attitudes are regarded as consisting of a cognitive, an affective, and a behavioural component

(Secord & Backman, 1964). Of these, the first is the most important. The cognitive component corresponds to Osgood and Tannenbaum's (1955) evaluative dimension. This dimension is the most important among three dimensions defining the meaning of an object in Osgood and Tannenbaum's sense of the term, and Osgood and Tannenbaum defined the attitude towards an object as its location on this dimension.

In most cases, the self-descriptive item permitted identification of an external referent that could serve as subject of its attitude version. For example, the direct object of the positively worded and true-keyed exhibition item

I would like to have a flashy car that would make others stop and look as I drove by

makes a suitable subject for a translation of the item into attitude item form:

A flashy car that makes people stop and look is well worth paying a lot of money for.

Care was taken to assure that the objective or external referents appeared relevant to the values or orientation of high scorers on the particular trait which the corresponding personality item measured, and that neither the referent nor endorsement of the attitude statement were unduly desirable or undesirable.

Questionnaire marker scales. Of the 47 scales of the questionnaire, 14 were marker variables, i.e. variables which were expected to be closely related to certain factors and to help in their identification and interpretation. Four heterogeneous MMPI acquiescence scales were constructed by selecting items from the MMPI with social desirability

scale values (Messick & Jackson, 1961) as neutral as possible and endorsement frequencies ranging from .20 to .80 and similar for males and females. The information required was obtained from Wiggins' (1964) MMPI characteristics deck. Sixty per cent of these items were used in their original form, the remaining items were used in reversed and negatively worded form. Where available, the negation reversals of Lichtenstein and Bryan (1965) were used; where not, new reversals were written. This procedure yielded a set of 60 positively worded and a set of 60 negatively worded items. Each set was randomly divided into two 30-item scales, one of these was keyed true, the other was keyed false.

Four 30-item acquiescence marker scales consisted of PRF items selected and translated in the same manner as the items of the self-descriptive experimental scales. Four items for each of 15 PRF traits were selected from the original PRF item pool. Depending on their original form, these were translated into negatively worded or positively worded reversals. Four positively and four negatively worded items were thus available for each trait. Two positively and two negatively worded scales balanced with respect to content were then constructed. Each scale consisted of 15 pairs of items, one pair for each trait. The items of each pair measured the same trait but in different directions; i.e. in terms of content, one item was true-keyed, the other was false-keyed. One positively worded and one negatively worded scale were arbitrarily keyed true, the remaining two were keyed false.

The absolutely worded and relatively worded true- and false-keyed

F scale type item scales constructed by Clayton and Jackson (1961) were included because they represent frequently used attitude items and appeared to be potentially useful marker variables for true responding. The desirability scales of the PRF Forms A and B were included as desirability marker variables.

Assignment of items to questionnaire Forms A and B. The items of each of the experimental scales were numbered from 1 to 6. For half of the self-descriptive scales, the even-numbered items were assigned to Form A, the odd-numbered items to Form B; for the other half, the even-numbered and odd-numbered items were assigned to Forms B and A respectively. If the even-numbered items of a self-descriptive scale were assigned to one form, the odd-numbered items of the corresponding attitude scale were assigned to the other. Half the items of each acquiescence marker scale and of the infrequency scale, and one of the PRF desirability scales, were assigned to each form. The items were ordered randomly, with two restrictions. Duplicated items were intentionally separated by approximately 150 items, and the MMPI acquiescence marker scales were put at the end. The latter was done to permit reducing the questionnaire length if necessary, since the relatively ambiguous items of the questionnaire appeared to require considerably more time than expected at first.

Adjective Checklist. The Adjective Checklist consisted of 90 neutral, 45 desirable, and 45 undesirable adjectives selected from Anderson's (1968) list and arranged in random order. The three sets of adjectives served as marker variables. All three were expected to load

on the hypothesized item endorsement factor, and the desirable and undesirable sets were expected to load in different directions on the desirability factor.

Procedure

The subjects were tested in four groups. Each group appeared for two sessions separated by a one-week interval. The first session lasted one and one-half hours during which Form A of the questionnaire and a general reasoning test were administered. The general reasoning test served to fill time and prevent disruption produced by subjects leaving early. The second session lasted one hour during which Form B, the Adjective Checklist, and a post-experimental questionnaire were administered. For this session, the post-experimental questionnaire served partly as time-filler.

Ratings of the items of the two forms of the questionnaire were obtained on a 6-point scale ranging from "extremely ambiguous" to "extremely unambiguous" from 22 subjects drawn from the same population as the original sample. These subjects were randomly divided into two equal groups, one group rated the items of Form A, the other the items of Form B.

RESULTS

Scale Statistics

Scale reliabilities. The means, standard deviations, and (in the case of the dichotomous questionnaire scales) the Kuder-Richardson formula 20 reliabilities of the 51 variables are shown in Table 4. The highest reliabilities, ranging from .46 to .68 were obtained by the two desirability scales, the MMPI acquiescence scales, and the true-keyed F scale type item scales. These were relatively long scales of 20 items, 30 items, and 12 items respectively. The median of the reliabilities of the 6-item experimental personality and attitude scales was .33. Application of the general form of the Spearman-Brown formula relating reliability and test length indicates that a reliability of .26 obtained for a 6-item scale corresponds to a reliability of .64 obtained for a 30-item scale. Results obtained by Payne and Anderson (1968) suggest that for a 30-item scale exhibiting the properties of the experimental scales used here such a reliability would be significant at the .05 level. Of the 32 experimental scales, 20 have reliabilities exceeding .26. Considering the small number of items per scale and the moderate content saturations of the items, the reliabilities of the experimental scales appear to be as high as could be expected.

Mean ambiguity ratings. Since true responding may be more

Means, Standard Deviations, and Kuder-Richardson 20 Reliabilities of
the Questionnaire Scales and Adjective Checklist Variables

Variable	Mean	Standard Deviation	K-R 20
ESPT	3.3	1.2	.23
ESPF	2.8	1.4	.36
ESNT	2.9	1.4	.33
ESNF	3.3	1.4	.39
EAPT	3.8	.9	.07
EAPF	2.5	1.3	.33
EANT	2.4	1.2	.11
EANF	3.5	1.1	.17
PSPT	2.2	1.3	.38
PSPF	3.7	1.5	.41
PSNT	2.8	1.2	.22
PSNF	3.2	1.3	.25
PAPT	3.3	1.4	.34
PAPF	2.8	1.3	.36
PANT	3.3	1.2	.08
PANF	3.1	1.4	.33
SSPT	2.5	1.3	.31
SSPF	3.3	1.3	.33
SSNT	2.5	1.3	.27
SSNF	2.3	1.5	.51
SAPT	3.2	1.1	.09
SAPF	3.7	1.3	.32
SANT	3.7	1.1	.14
SANF	2.9	1.2	.21
USPT	2.8	1.4	.37
USPF	3.3	1.4	.35
USNT	3.7	1.3	.29
USNF	4.2	1.4	.46
UAPT	3.8	1.4	.41
UAPF	4.2	1.3	.38
UANT	3.0	1.2	.10
UANF	5.0	.9	.23
HMPT	16.6	3.6	.51
HMPF	13.8	4.2	.65
HMNT	13.0	3.4	.46
HMNF	17.5	3.5	.52
HPPT	15.1	3.5	.44
HPPF	13.1	3.0	.27
HPNT	12.4	3.1	.33
HPNF	16.9	2.9	.23
FRT	6.6	2.9	.46
FRF	6.2	2.0	.25
FAT	4.3	2.0	.50
FAF	9.4	1.7	.17
DA	15.2	2.6	.55
DB	15.7	2.7	.61
AD	19.7	9.3	
AN	27.7	11.0	
AU	5.2	4.8	
INFR	.3	.6	.12

Note.-The labels used are explained in Table 3.

closely linked with item ambiguity than item endorsement, it is important to keep in mind ambiguity levels when making comparisons of the strength with which the two response tendencies are elicited by different scales. Different groups of judges rated Forms A and B. Consequently, two independent split-half reliability estimates, one based on Form A, the other based on Form B ratings, were computed for the experimental attitude items, experimental personality items, and the F scale type items. The estimates obtained for the experimental attitude items were .85 (Form A) and .97 (Form B), those obtained for the experimental personality items were .73 (Form A) and .94 (Form B), and those obtained for the F scale type items were .92 (Form A) and .80 (Form B). These estimates are the original split-half correlation coefficients adjusted for tests four times the length of the scales correlated to obtain the original split-half correlation. They reflect the relatively small number of judges used and the ambiguity of the task of rating item ambiguity, but the ambiguity ratings appear to be sufficiently reliable to serve their purpose in this study. Table 5 shows that the ambiguity ratings of the experimental attitude and personality scales were almost identical, while the F scale type items were judged to be more ambiguous. One might expect that negatively worded items are more difficult to read than positively worded items, but the ambiguity ratings received by negatively worded and positively worded items do not differ significantly.

Relationships Between Content Variables and Between Stylistic Variables

Relationships between content variables. The correlations between the 51 variables are shown in Appendix B. Table 6 focuses

Table 5
Mean Ambiguity Ratings of Questionnaire Scales

Scales	Mean Ambiguity Rating
Experimental scales	
Experimental attitude scales	4.1
Experimental personality scales	4.1
F scale type item scales	3.4 ^a
Positively worded and negatively worded scales	
20 scales consisting exclusively of positively worded items	4.2
20 scales consisting exclusively of negatively worded items	4.1

Note. - The ratings were made on a 6-point scale ranging from 1 ("extremely ambiguous") to 6 ("extremely unambiguous").

^aThe difference between this mean and that obtained by the experimental attitude scales is significant at the .01 level.

Table 6

Intercorrelations among Content Scales

Intercorrelations among Personality Scales

Scale Variation	Exhibition				Play				Trait				Succorance				Understanding			
	PF	NT	NF	KR	PF	NT	NF	KR	PF	NT	NF	KR	PF	NT	NF	KR	PF	NT	NF	KR
	20				20				20				20							
positive true	29	32	15	23	12	34	27	38	17	32	43	31	31	17	37	37				
positive false		62	36	36		37	28	41		25	17	33		18	42	35				
negative true			31	33			18	22			36	27			05	29				
negative false				38				25				51				46				

Intercorrelations among Attitude Scales

Scale Variation	Exhibition				Play				Trait				Succorance				Understanding			
	PF	NT	NF	KR	PF	NT	NF	KR	PF	NT	NF	KR	PF	NT	NF	KR	PF	NT	NF	KR
	20				20				20				20							
positive true	06	17	-04	07	03	28	26	34	02	08	13	09	09	01	13	41				
positive false		09	18	33		22	26	36		19	18	32		-04	38	38				
negative true			-09	11			10	08			21	14			-10	10				
negative false				17				33				21				23				

Correlations between Personality and Attitude Scales

Personality Scales

Attitude Scales Scale Variation	Exhibition				Play				Trait				Succorance				Understanding			
	PT	PF	NT	NF	PT	PF	NT	NF	PT	PF	NT	NF	PT	PF	NT	NF	PT	PF	NT	NF
	positive true	52	18	12	07	36	27	36	19	42	12	24	28	40	12	26	09			
positive false	14	54	36	31	-03	41	19	21	15	57	22	11	24	64	18	34				
negative true	11	29	17	-08	30	33	53	12	16	14	38	17	00	-05	30	-10				
negative false	-03	16	02	32	24	29	11	48	35	26	16	36	24	38	07	45				

Note.—Decimals omitted. PT stands for positively worded true-keyed, PF for positively worded false-keyed, NT for negatively worded true-keyed, and NF for negatively worded false-keyed. For N=195, Pearson r's of .15 and .20 are significant at the .05 and .01 levels of confidence respectively.

specifically on the correlations between the four self-descriptive personality scales for each trait, between the four attitude scales for each trait, and between corresponding sets of self-descriptive and attitude scales.

Three questions are answered by Table 6. First, the self-descriptive scales constructed to measure the same trait appear to be reasonable highly correlated. The median of the correlations corrected for attenuation between self-descriptive scales constructed to measure the same trait is .60. This value is as high as could be expected considering the low content saturation of the items and relative brevity of the scales. Second, the attitude translations appear to be adequate. The correlations between the personality scales and their corresponding attitude scales are shown in the main diagonal of the third set of correlation matrices. They range from a significant .17 to a substantial .64, or, if corrections for attenuation are made, from .40 to 1.00. Third, the correlations between the attitude scales translated from personality scales measuring the same trait tend to be moderate. Of 24 correlations between attitude scales belonging to the four content areas, 20 are positive and 10 are significant. For these scales, the median correlation, corrected for attenuation, is .30. The translation of scales originally already somewhat discrepant has taken its toll, but the attitude scales of the same content area are still correlated. The selection and translation procedures appear to have been reasonably successful.

Relationships between stylistic variables. Table 7 presents the correlations between the stylistic measures. The F scale type item scales

Table 7

Intercorrelations among Stylistic Measures

	HMPT	HMPF	HMNT	HMNF	HPPT	HPPF	HPNT	HPNF	DA	DB	AD	AN	AU
HMPT													
HMPF	-59 ^a												
HMNT	-20 ^{bc}	30 ^{bc}											
HMNF	24 ^{bc}	-32 ^{bc}	-52										
HPPT	35 ^a	-24 ^a	21 ^{bd}	04 ^{bc}									
HPPF	-34 ^a	36 ^a	-04 ^{bd}	-05 ^{bc}	-23								
HPNT	-07 ^{bc}	-05 ^{bd}	10 ^{bc}	02 ^{bc}	-28 ^{bc}								
HPNF	-06 ^{bd}	05 ^{bd}	16 ^{bc}	-16 ^{bc}	10 ^{bc}								
DA	-23	40	-25	16	07								
DB	-23	40	-25	09	10								
AD	00	17	08	-06	23								
AN	29	-37	-28	-15	10								
AU	27	-43	-30	-03	03								

Note.-Decimals omitted. The labels used are explained in Table 3. For N=195, correlation coefficients of .15 and .20 are significant at the .05 and .01 levels of confidence respectively

^aCorrelation between two scales on each of which true responding and item endorsement operate in the same direction.

^bCorrelation between two scales on one of which true responding and item endorsement operate in the same direction.

^cCorrelation in the direction of item endorsement.

^dCorrelation in the direction of true responding.

are not included in this table because their status as marker variables is at best tentative. Presumably, the MMPI and PRF acquiescence scales reflect both true responding and item endorsement. On some of them, the two tendencies operate in the same direction, both leading to a high or a low score; on the remaining scales they operate in opposite directions. The correlations between the first type should be the highest in the matrix. With one exception, they are. These correlations also reflect a certain degree of generality of the combined effects of true responding and item endorsement across the MMPI and PRF item pools. The correlations between a scale on which the two tendencies operate in the same direction and a scale on which they operate in opposite directions permits comparison of their relative strengths. The positively worded true-keyed and the negatively worded true-keyed PRF acquiescence scales form such a pair and the correlation of $-.28$ indicates that they elicit item endorsement more strongly than true responding. In general, the correlations appear to reflect a slight predominance of item endorsement.

The positively worded true-keyed and negatively worded false-keyed (acceptance-keyed) MMPI scales are negatively correlated with the desirability scales, the positively worded false-keyed and negatively worded true-keyed (rejection-keyed) MMPI scales are positively correlated with them. In contrast, the correlations between the PRF acquiescence scale and desirability are low and not consistent. Acceptance of MMPI items appears to be undesirable and rejection of MMPI items appears to be desirable because the social desirability scale values used for these items were those obtained by Messick and Jackson (1961b). MMPI items are generally undesirable

and adaptation level effects may have caused moderately undesirable items to be rated neutral by Messick and Jackson's judges (cf. Jackson & Lay, 1968). The Adjective Checklist variables are related to the desirability scales in the expected manner. The correlations between the neutral adjectives and the two desirability scales of $-.09$ and $-.19$ are in the same direction as, but somewhat lower than, those of $-.34$ and $-.30$ obtained by Jackson and Lay (1968) with a different set of neutral adjectives from the same source.

Factor Analysis

The correlation matrix for the 51 variables was subjected to a principal axis analysis. Sixteen factors were extracted. Three stylistic factors, four content factors, and a factor separating attitude and personality scales were predicted. On the basis of the number of predicted factors, and of the size and pattern of the eigenvalues, the first eight factors presented in Appendix B were retained for rotation. They accounted for 90 per cent of the common variance as estimated by the sum of the original communalities.

A simultaneous varimax program (Horst, 1965) was used to accomplish the first phase of the rotation. Blind rotation to a varimax criterion ordinarily yields a solution characterized by simple structure; more specifically, by factors whose loadings are either as high or as close to zero as possible. This is not the type of solution predicted in hypothesis 1. According to hypothesis 1, two of the major factors are not characterized by their high or negligible loadings, but by their separation of true-keyed from false-keyed scales and of acceptance-keyed from rejection-keyed scales

respectively. In view of hypothesis 1, it is not surprising that the varimax solution obtained was psychologically not parsimonious. Three different factors, for example, distinctly reflected true responding. While the varimax solution was not final, it served to simplify the graphical rotations that followed.

The graphical rotations of the varimax factors were undertaken with respect to four criteria. These followed from the hypotheses of the study, from related research, and from examination of the varimax factor matrix. The latter did not indicate any possibility of obtaining a factor separating attitude and personality scales, eliminating the emergence of such a factor as a fifth possible criterion. In order of importance, the four criteria were:

(1) Emergence of a true responding factor separating true-keyed and false-keyed scales perfectly. This previously obtained and replicated factor (Jackson & Messick, 1961, 1962a; Trott & Jackson, 1968) was expected to serve as a reference factor in Brown, Guilford, and Hoepfner's (1966) sense of the term. In other words, it was confidently assumed to be a factor accounting for a significant portion of the common variance, clearly interpretable in a hypothesized manner, i.e. a factor in relation to which others could be placed and interpreted.

(2) Emergence of a desirability factor on which the desirability scales and the desirable and undesirable adjectives have the highest loadings. This desirability factor clearly also qualifies as a reference factor.

(3) Emergence of four factors reflecting the four traits constituting

the content domain of the study.

(4) Emergence of an item endorsement factor separating positively worded true-keyed scales and negatively worded false-keyed scales (acceptance-keyed scales) from positively worded false-keyed scales and negatively worded true-keyed scales (rejection-keyed scales).

The graphically rotated factor matrix is shown in Table 8. The factor plots obtained in the process of rotation did not call for oblique orientation of the axes. Four of the factors reflect response styles, the remaining four reflect content. The response style factors will be dealt with first. In the discussion of each of them below, the largest (in almost all cases larger than .30) absolute loadings are listed first. PT and PF stand for positively worded true-keyed and positively worded false-keyed scales respectively, NT and NF stand for negatively worded true- and false-keyed scales.

Factor I

MMPI acquiescence PT	52
MMPI acquiescence NF	45
PRF acquiescence PT	44
PRF acquiescence NF	33
Understanding (self-descriptive) PT	33
Neutral adjectives	31
MMPI acquiescence NT	-28
PRF acquiescence PF	-33
PRF acquiescence NT	-37
MMPI acquiescence PF	-46

Factor I separates acceptance-keyed and rejection-keyed scales and reflects item endorsement. It will be recalled that acceptance-keyed scales are positively worded true-keyed scales and negatively worded

TABLE 8
Rotated Factor Matrix

Variable	Factor								h ²
	I	II	III	IV	V	VI	VII	VIII	
ESPT	22	14	18	-05	00	52	-02	-20	41
ESPF	-09	03	-16	-08	17	75	03	05	63
ESNT	-04	09	13	-01	12	69	-01	13	53
ESNF	25	26	-32	02	05	40	11	12	41
EAPT	05	18	16	-08	-11	36	-03	-20	25
EAPF	-04	-05	-35	09	14	57	10	09	49
EANT	-08	01	34	-02	00	26	11	-08	21
EANF	06	06	-33	03	14	11	12	09	17
PSPT	25	44	12	14	13	13	12	13	35
PSPF	-11	54	-32	02	12	13	-26	01	50
PSNT	01	69	20	11	03	06	01	-06	53
PSNF	23	35	-36	01	07	17	-05	-14	36
PAPT	24	47	10	-01	13	07	-08	01	32
PAPF	-21	36	-39	09	-04	02	-16	-12	37
PANT	-10	62	18	10	-01	-03	-05	-10	45
PANF	13	36	-42	10	12	14	-04	-02	37
SSPT	15	12	01	17	53	12	-13	-30	47
SSPF	-02	-16	-28	12	50	18	01	10	41
SSNT	05	06	10	06	54	17	-01	06	34
SSNF	23	15	-12	00	51	06	-07	-28	43
SAPT	20	09	30	18	36	08	-04	-16	33
SAPF	-08	-23	-38	05	46	20	07	22	50
SANT	-05	13	10	-08	46	-04	03	07	26
SANF	04	02	-21	01	49	-03	-15	-09	32
USPT	33	-06	02	-10	-09	04	55	-04	43
USPF	-01	00	-34	-36	-01	-05	54	-09	54
USNT	-24	-14	14	03	-01	-02	44	02	30
USNF	18	-04	-42	-16	-18	00	39	07	42
UAPT	15	-20	27	-21	-07	-20	37	08	37
UAPF	-15	-08	-40	-29	16	-15	51	-07	53
UANT	-27	13	23	07	03	-02	12	-09	17
UANF	06	-17	-45	-26	04	01	30	14	41
HMPT	52	09	29	10	04	12	15	-34	51
HMPF	-46	-10	-22	-09	-01	00	-15	59	64
HMNT	-28	00	37	-08	-20	04	05	46	46
HMNF	47	06	-35	07	20	08	-06	-31	47
HPPT	44	08	36	-01	-09	06	21	16	41
HPPF	-33	-25	-23	11	-07	-10	-21	10	31
HPNT	-37	06	23	05	-16	-03	-28	-26	37
HPNF	33	10	-37	-08	03	-10	03	13	29
FRT	22	06	46	-07	08	-10	-40	-05	44
FRF	05	01	-36	-02	04	04	-31	-09	24
FAT	26	05	53	-14	09	-14	-38	01	53
FAF	10	-10	-38	-20	14	-01	-27	-08	30
DA	02	-11	-06	03	-03	00	16	68	49
DB	-03	-07	03	-19	12	-01	-02	68	51
AD	25	13	07	37	-09	-02	08	56	54
AN	30	16	07	64	09	-13	16	-17	60
AU	13	07	01	52	11	00	08	-54	61
INFR	-08	01	-18	11	-16	18	-06	-07	11
SEX	01	08	-10	-08	37	-25	06	-16	25

NOTE.- Decimals omitted. The abbreviations are explained in Table 3.

false-keyed scales on which a respondent obtains a high score if he endorses items, while the rejection-keyed scales are positively worded false-keyed and negatively worded true-keyed scales on which he obtains a high score if he rejects items. It will also be recalled that an item is endorsed if the respondent answers it in such a way that he attributes to himself the characteristic or opinion reflected by it.

Of the 51 variables factor analyzed, 44 are acceptance-keyed or rejection-keyed, i.e. consist of items keyed in the same direction and either preponderantly positively or preponderantly negatively worded. These 44 scales include the four F scale type item scales, since 80 per cent of their items are positively worded and since it is possible to endorse strongly but negatively worded opinions. They do not include the desirability scales and the infrequency scales. All 24 acceptance-keyed scales obtained positive loadings on Factor I. All but two of the 20 rejection-keyed scales obtained negative loadings. The two rejection-keyed scales which do not load in the predicted direction are 6-item experimental personality scales with reliabilities below the median reliability of the experimental scales. They obtained negligible loadings of .01 and .05. The biserial correlation between the acceptance- and rejection-keying of the 44 scales on one hand, and their loadings on Factor I on the other, is .97. With a standard error of .19, and assuming a normal sampling distribution, this correlation is significant at the .001 level.

Two additional properties of Factor I deserve attention. The eight MMPI and PRF acquiescence marker scales obtained the highest loadings, and the three adjective checklist variables have moderate but consistent

loadings ranging from .19 to .33. These are variables one would expect to load on an item endorsement factor, the former because they reflect response bias rather than content, the latter because they reflect an activity which, on the surface at least, resembles item endorsement.

Factor III

Absolutely worded true-keyed F scale	52
Relatively worded true-keyed F scale	45
PRF acquiescence PT	36
Relatively worded false-keyed F scale	-37
Absolutely worded false-keyed F scale	-38
Play (attitude format) PF	-39
Understanding (attitude format) PF	-40
Understanding (attitude format) NF	-45

The true and false-keyed scales are perfectly separated by this factor. It clearly reflects true responding. The high loadings of the F scale type item scales indicate that reliance on them as marker variables for true responding in the process of rotation was justified, and that true responding and attitude scales may be linked as hypothesized.

Factor IV

Neutral adjectives	64
Undesirable adjectives	52
Desirable adjectives	37

The three Adjective Checklist Variables obtained the highest loadings on Factor IV and it reflects adjective endorsement. This factor is similar to a factor obtained by Jackson and Lay (1968) and it confirms their finding that adjective endorsement is a process which is related to, but by

no means identical with, item endorsement. Figure 2 represents the relationship between the adjective endorsement and item endorsement factors more clearly.

Factor VIII

Desirability, PRF Form A	68
Desirability, PRF Form B	68
MMPI acquiescence PF	59
Desirable adjectives	56
MMPI acquiescence NT	46
MMPI acquiescence NT	-31
MMPI acquiescence NF	-34
Undesirable adjectives	-54

This is a clearcut desirability factor. The desirability markers and the MMPI acquiescence scales obtained the highest loadings. Factor VIII does not confirm Block's (1965) contention that what appears to be desirability responding can be explained in terms of consistent responding to content. Block maintained that Edwards' (1957) social desirability (SD) scale and MMPI scales are correlated because both the SD scales and the clinical MMPI scales reflect pathological content such as anxiety and tension. Factor VIII appears to reflect desirability responding that is not confounded with pathological content. The highest loadings on it were obtained by the PRF desirability scales and undesirable adjectives of the Adjective Checklist, and these variables are certainly far more independent of the pathological content reflected by the MMPI than Edwards' SD scale.

Item endorsement, true responding, and desirability are, not surprisingly, the three major stylistic factors which emerged from the analysis. If the sum of the calculated communalities is taken as an estimate

ITEM ENDORSEMENT

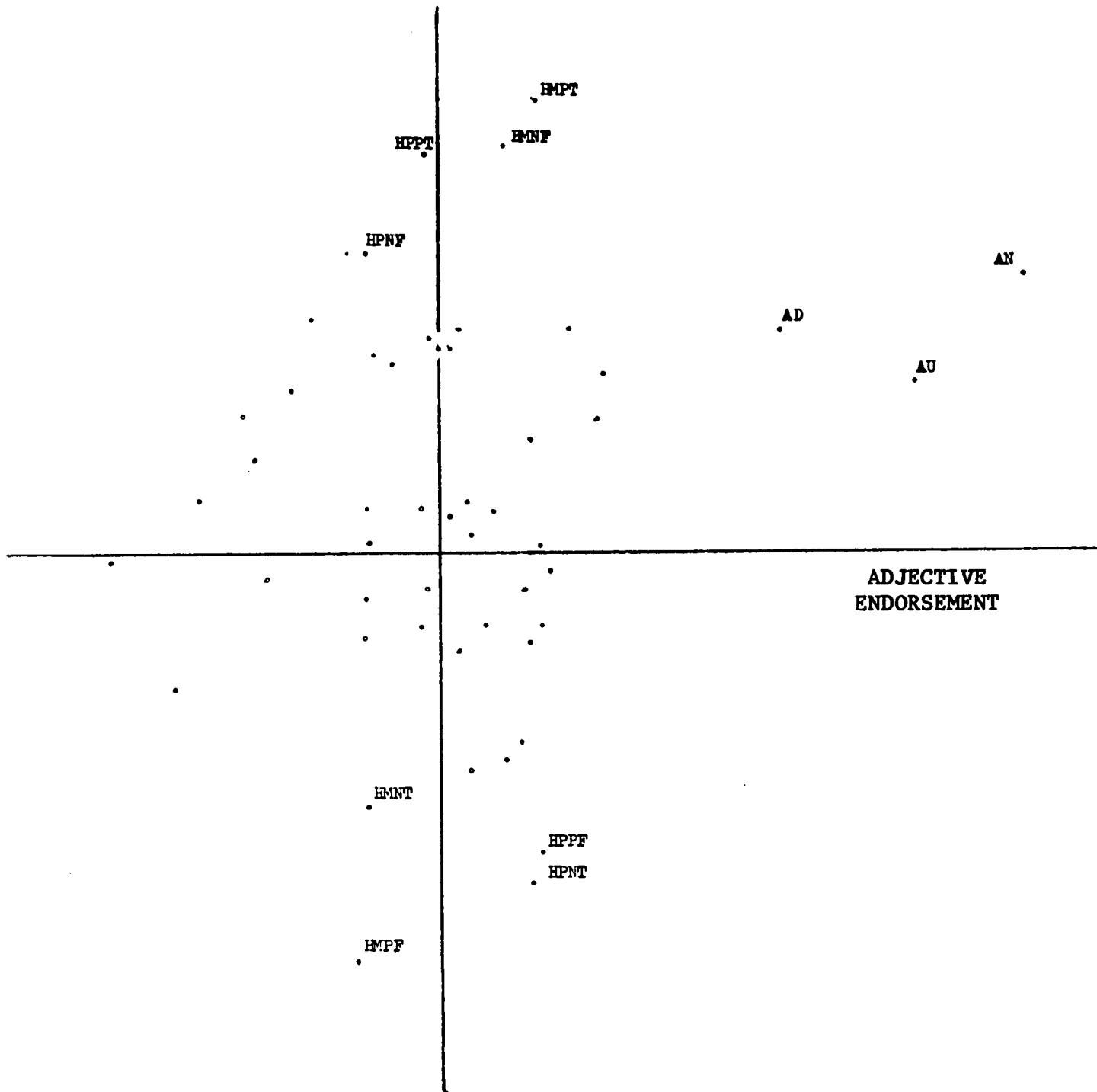


Figure 2 Scatter plot of the item endorsement and adjective endorsement factors.

of the common variance, and if the sum of the squared loadings of a factor is taken as an estimate of the variance it accounts for, then true responding accounts for 19 per cent of the common variance and item endorsement for 12 per cent. About 30 per cent of the common variance can thus be attributed to acquiescence. It is difficult to compare this estimate with others, since other estimates have been obtained on different item pools, usually the MMPI or the F scale. But acquiescence appears to account for a sizeable portion of the variance, and to reflect the selection of items for their acquiescence eliciting potential. Desirability, on the other hand, accounts for an estimated 15 per cent of the common variance, less than in other studies (Jackson & Messick, 1961, 1962a) and reflecting both the use of relatively neutral items and the clearcut separation of the item endorsement and desirability factors.

Figures 3 and 4 show the factor plots of desirability and item endorsement and of desirability and true responding respectively. In both cases, the factors have been placed orthogonally. The high loadings of the MMPI acquiescence scales on both desirability and item endorsement raise questions about the relationship between these two factors. The solution represented by Figure 3 is the most convincing among several possibilities examined. It indicates that the MMPI scales are factorially complex, that they elicit desirability, item endorsement, and true responding.

The four expected content factors emerged clearly, in spite of the moderate content saturation of the items used. The personality scales tended to obtain higher loadings than the attitude scales. In 14 out of 16 cases, the personality scale had a higher loading on the appropriate content

ITEM ENDORSEMENT

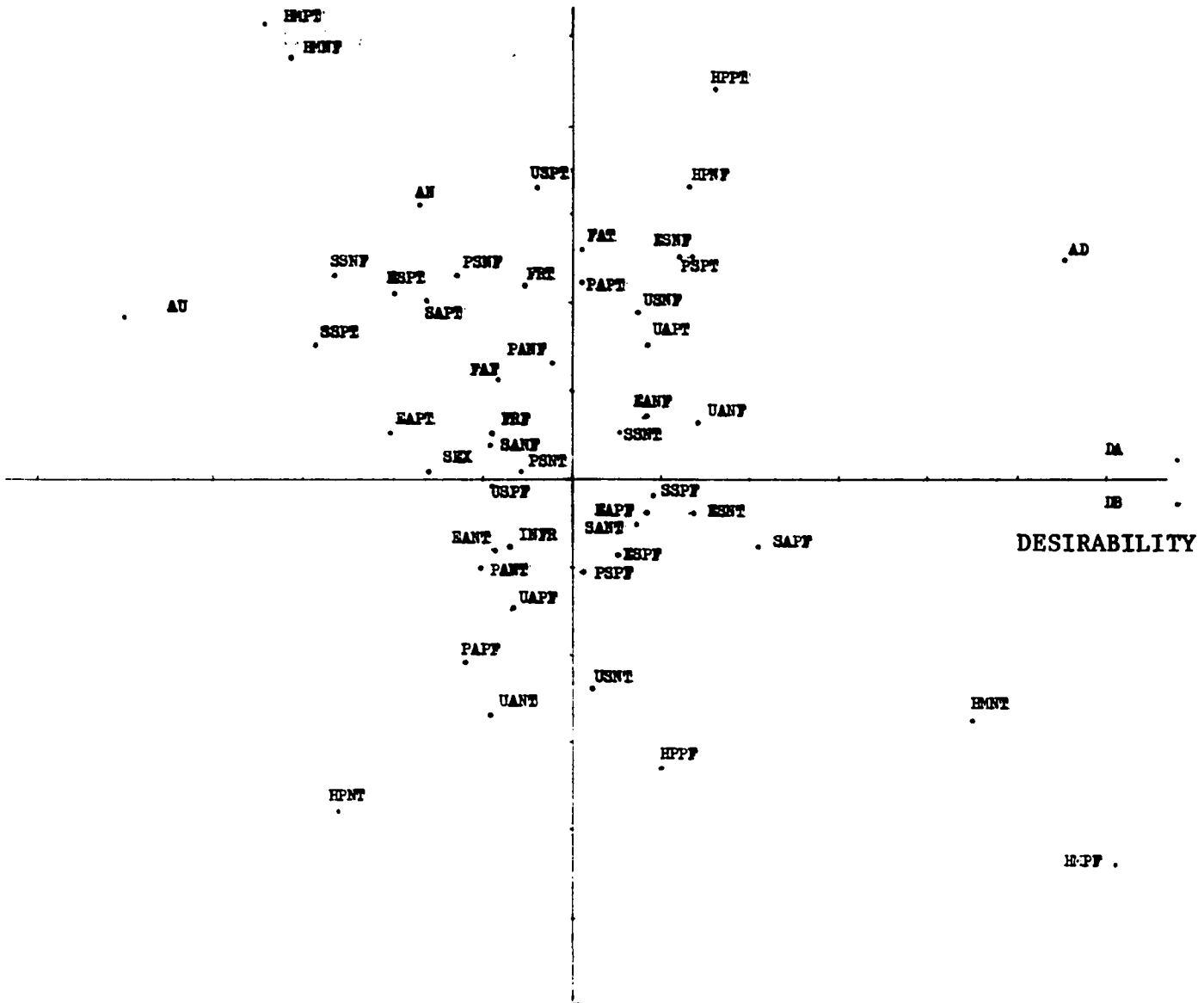


Figure 3 Scatter plot of the item endorsement and desirability factors.

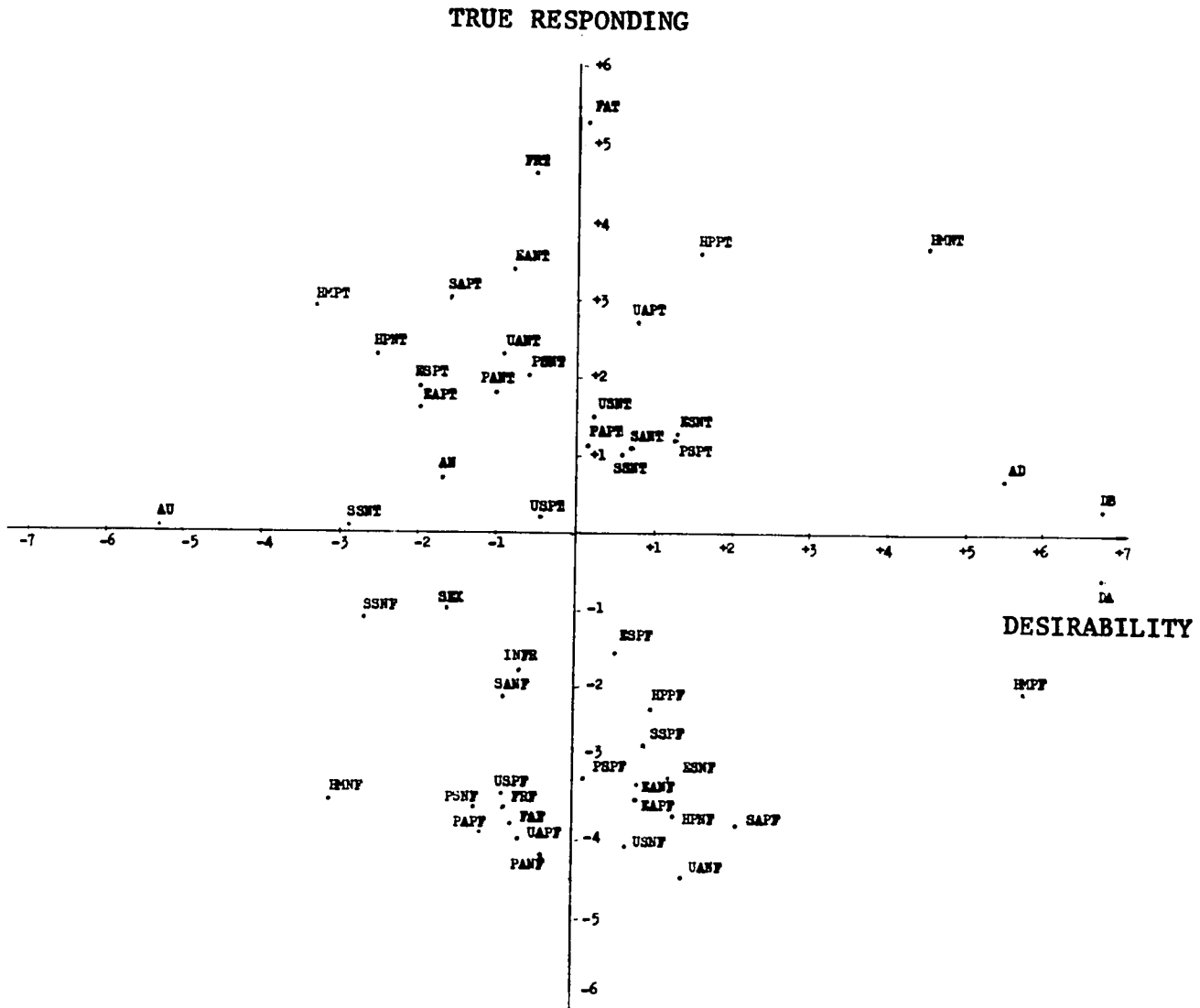


Figure 4 Scatter plot of the true responding and desirability factors.

factor than the attitude scale translated from it ($\chi^2=9$, $df=1$, $p<.01$). There were no systematic differences in the magnitude of the loadings of positive true, positive false, negative true and negative false scales. In the following discussion, the variables which obtained the highest absolute loadings are listed first for each factor.

Factor II

Play (self-descriptive) NT	69
Play (attitude) NT	62
Play (self-descriptive) PF	54
Play (attitude) PT	47
Play (self-descriptive) PT	44
Play (attitude) NF	36
Play (self-descriptive) NF	35
Play (attitude) PF	35

The eight Play scales obtained the highest loadings and the interpretation of Factor II is clear-cut.

Factor V

Succorance (self-descriptive) NT	54
Succorance (self-descriptive) PT	53
Succorance (self-descriptive) NF	50
Succorance (self-descriptive) PF	50
Succorance (attitude) NF	49
Succorance (attitude) NT	46
Succorance (attitude) PF	45
Succorance (attitude) PT	36

The interpretation of Factor V is also clear-cut. The eight highest loadings were obtained by the eight Succorance scales. Among these, the self-descriptive scales had consistently higher loadings than the attitude scales. This consistent difference suggests that the content of Succorance

items may make them less amenable to translation into the attitude format than items measuring other traits. Figure 5 shows the projections of the Play and Succorance scales on Factors II and V and demonstrates more clearly the clear-cut content factors obtained in this study with short scales of moderate content saturation.

Factor VI

Exhibition (self-descriptive) PF	75
Exhibition (self-descriptive) NT	69
Exhibition (attitude) PF	57
Exhibition (self-descriptive) PT	52
Exhibition (self-descriptive) NF	40
Exhibition (attitude) PT	36
Exhibition (attitude) NT	26

The Exhibition scales obtained the highest loadings on Factor VI, with the exception of the negatively worded false-keyed attitude scale. This scale differed from the others in that four of its six items had relative endorsement frequencies falling outside the .20-.80 range. Its variance, and consequently its reliability (Gulliksen, 1950), were very low.

Factor VII

Understanding (self-descriptive) PT	54
Understanding (self-descriptive) PF	53
Understanding (attitude) PF	51
Understanding (self-descriptive) NT	44
Understanding (self-descriptive) NF	39
Understanding (attitude) PT	36
Understanding (attitude) NF	30
Absolutely worded false-keyed F scale	-27
Relatively worded false-keyed F scale	-31
Absolutely worded true-keyed F scale	-38
Relatively worded true-keyed F scale	-40

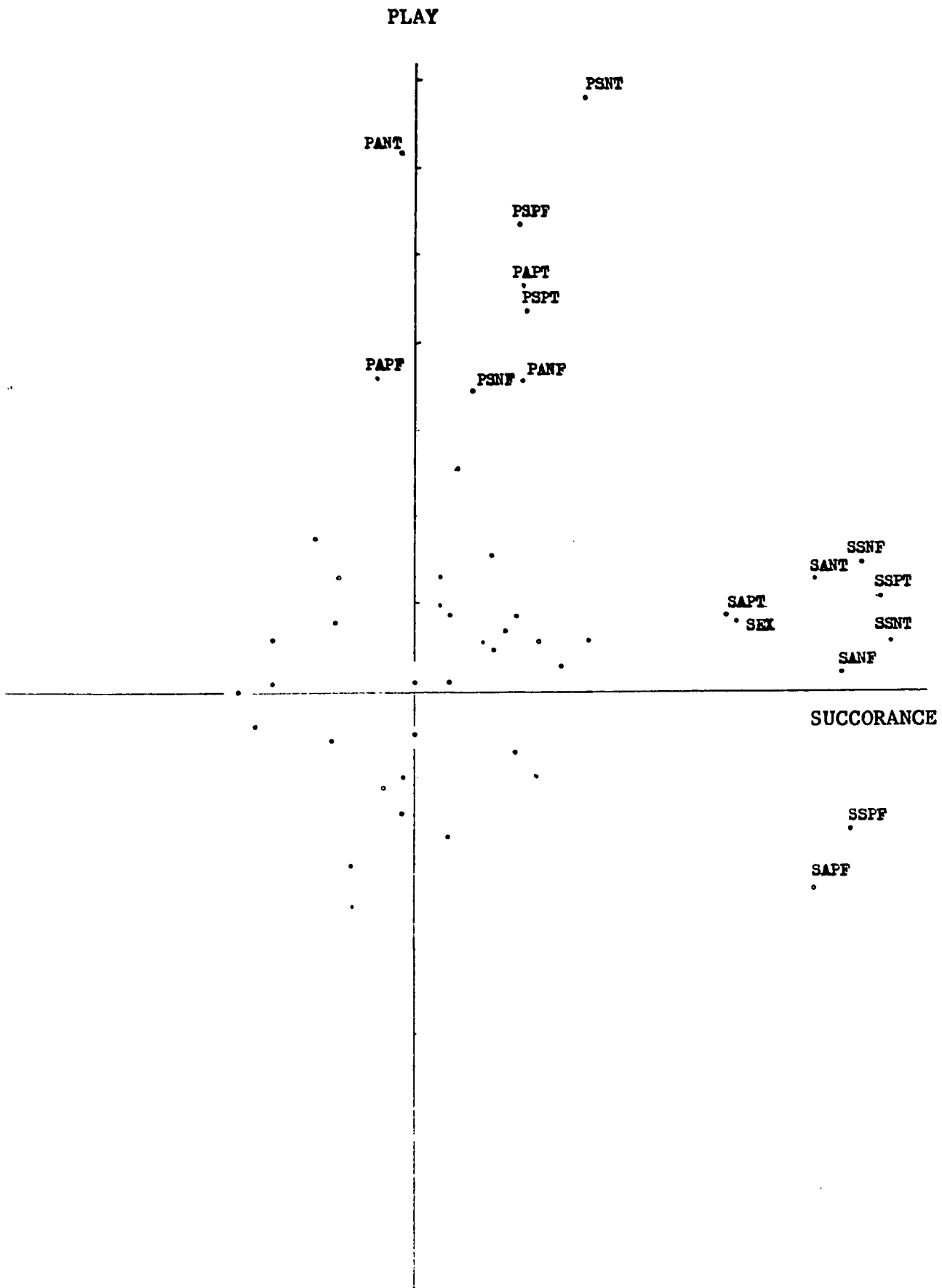


Figure 5 Scatter plot of the Play and Succorance factors.

Unlike the other three content factors, Factor VII is bipolar. The positive pole is defined by seven Understanding scales which obtained the highest positive loadings. The eighth Understanding scale had a low reliability of .10 and its loading was lower than, but in the same direction as that of the other Understanding scales. Both true-keyed and false-keyed F scale type item scales load consistently in the negative direction, and the negative pole reflects one of the most difficult traits to demonstrate, namely authoritarianism. The true-keyed and false-keyed scales differ somewhat in that the former have slightly higher loadings than the latter. This difference, however, need not be ascribed to response set. It is plausible that the carefully selected original true-keyed items are more saturated with authoritarian content than the false-keyed reversals. Jackson (personal communication) has pointed out that Factor VII suggests a possible reinterpretation of the relationship found between F scale scores and educational level (e.g. Hyman & Sheatsley, 1954). The negative correlation between the two may be due to differences between high and low F scale scorers on broad personality traits like Understanding rather than directly to differences in intellectual or, more specifically, verbal aptitudes.

The Factor Analytical Results in Relation to the Hypotheses

Separation of true responding and item endorsement. Hypothesis 1 predicts that two factors will emerge from the variables factor analyzed; a true responding factor separating true-keyed from false-keyed scales, and an item endorsement factor separating acceptance-keyed from rejection-keyed scales. It also implies that these two factors will define four quadrants each of which would contain only scales of the appropriate wording and

keying variation. This implication was diagramed in Figure 1.

Figure 6 shows the projections of all 51 variables for Factors I and III, the item endorsement and true responding factors. The 44 positively worded true-keyed, negatively worded true-keyed, negatively worded false-keyed, and positively worded false-keyed scales are located in the quadrants predicted by hypothesis 1. There are two exceptions, the self-descriptive negatively worded and true-keyed Succorance and Play scales. As noted earlier, while these two scales do not load in the predicted direction on item endorsement, their loadings are negligible and they are exceptions only in a technical sense.

As would be expected on the basis of the discussion of the item endorsement and true responding factors, the pattern of projections of the relevant variables in Figure 6 is not attributable to chance. The 44 relevant scales are made up of 12 positive true, 12 positive false, 10 negative true, and 10 negative false scales. On the basis of chance, the scales of each item variation should be divided equally among the four quadrants. For example, three of the 12 positive true scales should be located in each quadrant. Chi square was computed for the number of relevant scales in each quadrant. It was computed separately for each of the four scale variations and was significant at the .01 level in all cases.

Attitude items as elicitors of true responding and personality items as elicitors of item endorsement. The results support hypothesis 2, according to which attitude items elicit true responding more strongly than item endorsement. The absolute value of the loadings of the F scale type item scales ranged from .36 to .52 on true responding and from .05 to .26

TRUE RESPONDING

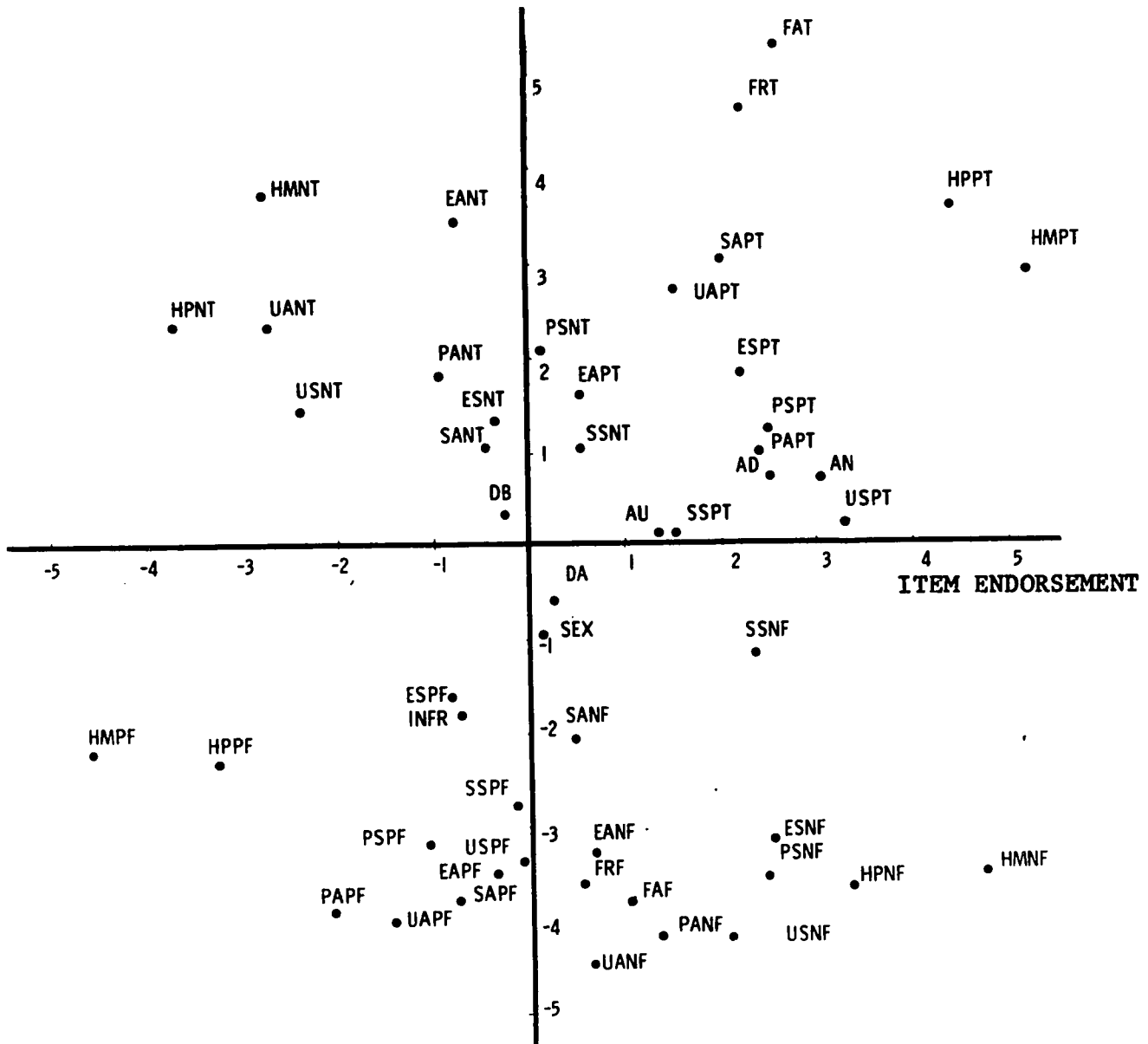


Figure 6 Scatter plot of the true responding and item endorsement factors.

on item endorsement. Similarly, of the 16 experimental attitude scales, 13 obtained higher loadings on the true responding factor than on the item endorsement factor ($\chi^2=6.2$, $df=1$, $p<.02$).

Hypothesis 3, stating that personality items elicit item endorsement more strongly than true responding, is not supported by the results. Out of the eight MMPI and PRF acquiescence scales, six obtained higher loadings on the item endorsement factors than on the true responding factor. For the experimental personality scales, the proportion was 6 out of 16.

A comparison of the experimental attitude and experimental personality scales confirms these findings. Out of the 16 experimental attitude scales, 13 obtained larger loadings in the predicted direction on true responding than the personality scales from which they were translated ($\chi^2=6.2$, $df=1$, $p<.02$), but out of the 16 experimental personality scales, only nine obtained higher loadings on item endorsement than the attitude scales translated from them. Since attitude items elicit true responding somewhat more strongly than item endorsement, one would expect them to elicit true responding more strongly than personality items. The results of the comparisons between the experimental attitude and personality scales must be interpreted with care, however, since these scales may differ in respects other than self-descriptive versus external referent formats. Because of its apparent link with true responding, the most crucial characteristic in which they could differ would be item ambiguity. Table 5 indicates that they do not differ in this respect, however, and while the results of comparing the attitude and personality scales may reflect extraneous differences, there does not appear to be any evidence that they do.

Replication of the Three Main Stylistic Factors and Separate Analyses
of the Results for Male and Female Subjects

Principal axis solutions were obtained separately for random halves (labeled 'odd' and 'even' samples) of the total sample, and for male and female subjects. The factor analyses for the odd and even samples were done to check on the invariance or stability of the three main stylistic factors obtained in the original solution, those for the male and female subjects were done to explore possible differences between the sexes on these factors. The relatively small size of the male sample (N=87) called for a reduction in the number of variables included in the factor analysis for each sex. The 15 questionnaire scales which had obtained the lowest K-R 20 reliabilities on the total sample were excluded. Thirty-five variables remained, since sex itself disappeared as a variable. For each of the four subsamples, the first eight factors were rotated by means of the simultaneous varimax program used in the original analysis.

In each of the four varimax solutions, four similar stylistic factors emerged. These resembled four of the factors obtained in the original varimax solution. It was thus possible to attempt to replicate the original graphical rotations. The first rotation performed to obtain the original graphical solutions consisted of two steps: an orthogonal shift of two axes through 45 degrees, and an orthogonal shift of two different axes also through 45 degrees.

True responding. For all four subsamples, the first step was replicated with the new varimax factors most closely resembling the appropriate original varimax factors. This shift yielded clear-cut true responding

factors in every case. Among the loadings of the four new true responding factors obtained, only ten did not load in the predicted direction and the highest loading in the nonpredicted direction was $-.13$. The correlations among the various true responding factors obtained are shown in Table 9.

Item endorsement. The second step performed to obtain the original graphical solution for the total sample was replicated as closely as possible. The new varimax factors most similar to the two rotated for the total sample were rotated orthogonally through angles ranging from 23 to 35 degrees. No rotation of the two equivalent factors was indicated for the female sample. These rotations produced item endorsement factors for the odd and even samples. Table 9 shows the correlations between these item endorsement factors. These rotations did not lead to the emergence of an item endorsement factor for the male sample, and for both sexes no other rotations are indicated that would lead to its emergence.

Desirability. Replication of the second step of the original graphical rotations also yielded more clear-cut desirability factors for the odd, even, and male samples. The high correlations shown in Table 9 indicate that the desirability factors obtained for these samples and a desirability factor obtained by means of the varimax program for the female sample reflect the same dimension.

Table 9

**Intercorrelations among Replicated True Responding,
Item Endorsement, and Desirability Factors**

True Responding Factors

Sample	Odd	Even	Male	Female
Total	95	82	79	82
Odd		74	78	82
Even			84	72
Male				59

Item Endorsement Factors

Sample	Odd	Even
Total	63	86
Odd		59

Desirability Factors

Sample	Odd	Even	Male	Female
Total	91	95	95	87
Odd		81	89	91
Even			94	82
Male				84

Note.-Decimals omitted. The samples for which these factors were obtained were the total sample, random halves of the total sample ('odd', 'even'), and the male and female subjects.

DISCUSSION

The Multidimensional Nature of Acquiescence

Three factors reflecting response sets which have been subsumed under the label acquiescence in the past emerged from the present study: true responding, item endorsement, and adjective endorsement. The first two of these are clearly orthogonal, while adjective endorsement is positively correlated with item endorsement. Of the three factors, the two important ones are true responding and item endorsement. Item endorsement emerged with greater clarity than in the Jackson and Messick (1965) reanalysis of Rorer and Goldberg's (1965b) data. The true responding factor emerged under conditions to which many of the criticisms raised by Rorer (1965), Block (1965), and Dicken (1967) against the acquiescence interpretation of Jackson and Messick's (1961, 1962a) factors separating true- from false-keyed scales do not apply. In the present study, relationships between content and keying of the type that appear to hold for the MMPI items were explicitly avoided by selecting items from relatively independent but homogeneous item pools and by balancing some of the marker scales with respect to content. In addition, item overlap was indirect since each item belonged to only one scale and since even those items which were 'duplicated' appeared only once in the same form.

The present study thus strongly supports the multidimensional interpretation of acquiescence first suggested by Jackson and Messick (1965). Its results contribute substantially to the evidence reviewed recently by Bentler, Jackson and Messick (see Footnote 1) in support of the multidimensional interpretation of acquiescence. The three acquiescence factors identified in the present study--and it should be remembered here that acquiescence is used simply as a label for the tendency to agree when true responding and item endorsement are confounded--correspond to the three which emerge from Bentler et al.'s review. The Bentler et al. paper and the present study suggest strongly that the term acquiescence is meaningful only in a historical context, that it can serve no purpose in future theorizing and research because it refers to specific response tendencies which are unrelated. These specific response tendencies, on the other hand, appear to constitute functional unities or clusters of correlated and covarying variables. Focus on them rather than on acquiescence is likely to have a number of consequences. These will be discussed next.

True responding and item endorsement as broad response sets with different correlates. First, focus on true responding and item endorsement is likely to lead to fruitful attempts to establish how general they are and to what theoretically important variables they are related. As long as acquiescence itself was regarded as a concept or a functional unity with explanatory power, it was expected that measures of it would correlate highly among themselves and consistently with theoretically relevant variables. Rorer (1965) has criticized the case for acquiescence

because neither expectation is met by empirical evidence. It is now becoming increasingly apparent that different measures of acquiescence reflect different processes which are relatively broad and general and which are most likely to have different correlates. True responding and item endorsement may be broad response sets which account for differences in the acquiescence elicited by the F scale and self-descriptive personality inventories (Jackson, 1967a) and for the difference between interpretive acquiescence and stimulus acceptance (Damarin & Messick, 1965). The present study indicates clearly that the F scale elicits true responding strongly and item endorsement negligibly, and in Messick and Kogan's (1967) study, F scale type item scales obtained the highest loadings on interpretive acquiescence. Stimulus acceptance is "reminiscent" (Messick, 1967) of, if not identical with, item endorsement; and Jackson and Messick (1965) have shown that the largely self-descriptive MMPI items elicit item endorsement more strongly than true responding. The present study indicates that personality items do not elicit primarily item endorsement because of their self-descriptive format. Self-reference and moderately undesirable social desirability scale values appear to be item properties which interact to produce the preponderance of item endorsement observed by Jackson and Messick (1965). This possibility will be examined in more detail later. The results confirming hypothesis 2 are thus consistent with, and the results which fail to confirm hypothesis 3 need not be inconsistent with the view that true responding and item endorsement are broad response sets which account for both of the dichotomies summarized in Table 3.

The inferences that can be made concerning the generality of true responding and item endorsement are somewhat tentative. The same applies to the inferences that can be made concerning their correlates. There is some evidence linking true responding to conformity either directly (Gage & Chatterje, 1960; Quinn, 1963) or indirectly (Stricker, 1963; R. Elliott, 1961). Item endorsement, on the other hand, is primarily a function of the desirability threshold below which respondents will not endorse, and above which they will endorse, items with a certain probability. Precisely what correlates of this threshold will be discovered remains to be seen. Conformity, however, is unlikely to be one of them (Jackson, 1968).

The relationships between true responding and desirability and between item endorsement and desirability. A second consequence of focusing specifically on true responding and item endorsement rather than on acquiescence is likely to be a more definitive analysis of the relationships between desirability and what has been labeled acquiescence. The correlating of measures of desirability and acquiescence has not proved to be a useful method to clarify these relationships. In general, the correlations obtained have been negative, but disagreement arose in their interpretation. Stricker (1963) and Bernhardson (1967a) have suggested that they reflect an actual negative relationship between acquiescence and desirability. Other investigators attributed them to the confounding of keying and social desirability scale values. Couch and Keniston (1961), for example, argue that their correlation of $-.34$ between the Overall Agreement Score and Edwards' Social Desirability

scale is attributable to the fact that 77 per cent of the items of the latter are false-keyed. Edwards and Walker (1961a, 1961b), on the other hand, attribute the same correlation to the undesirability of the items comprising the Overall Agreement Score. Attempts to construct 'pure' measures of acquiescence and social desirability have not been successful. The reasons for this are numerous. Bernhardson (1967b) has recently pointed out that the effect of social desirability cannot be removed from acquiescence measures by simply pairing items with equal social desirability scale values since these values have been averaged over a group of judges and may not be applicable to a particular respondent. Problems also arise in the construction of 'pure' social desirability scales. Jackson (1967a) has analyzed in detail the deficiencies of balancing scales to remove the effects of true responding, and the problem is confounded by the increasingly obvious necessity to balance the effects of item endorsement as well.

Research focusing on true responding and item endorsement appears to confirm Jackson and Messick's (1961, 1962a) findings indicating that while there is a curvilinear relationship between the social desirability scale values of items and the amount of acquiescence they elicit, there is little correlation between acquiescence and desirability responding. This applies to both the present study and to Jackson's (1968) study of item endorsement. True responding and item endorsement appear to be independent of desirability. What little correlation Jackson and Messick (1961, 1962a) obtained between acquiescence and desirability may be due to anchor effects produced by the overall undesirability of

MMPI items on the social desirability scale values obtained for MMPI items (cf. Jackson & Lay, 1968).

The need to isolate and control true responding and item endorsement. A third consequence of focusing on true responding and item endorsement will probably be efforts to isolate them and to control not only true responding but also item endorsement in future research on response sets. Their isolation would involve increased use of positively worded true-keyed, positively worded false-keyed, negatively worded true-keyed, and negatively worded false-keyed scales in the same study, and the control of item endorsement may require balanced scales consisting of equal numbers of positively worded and negatively worded items.

In practice, there may be difficulties in attempting to control item endorsement by balancing scales. Negatively worded items raise the problem of implicit negations. In the case of attitude items, they also raise the problems of strongly but negatively worded items which can be endorsed by a true response and, although this is a somewhat technical point, of the location of the negation as part of the subject or as part of the predicate. Fortunately, controlling for item endorsement does not appear to be important in test construction since, as Jackson and Lay (1968) have shown, highly content saturated test items elicit little true responding and item endorsement.

Attitude Items and True Responding

Both the F scale type item scales and the experimental attitude scales elicited true responding more strongly than item endorsement. In addition, the experimental attitude items elicited true responding more strongly than the experimental personality items. As indicated, these results have a bearing on the interpretation of the relationships underlying the acquiescence response sets shown in Table 3. But they must be examined carefully before they are interpreted as evidence supporting hypothesis 2, i.e. as indicating that attitude items elicit more true responding than item endorsement because of their external referent format. In particular, two possibilities must be considered: first, that extraneous differences between the experimental attitude and personality items account for the difference in the degree to which they elicit true responding, and second, that both the F scale type items and the experimental attitude items are not representative of attitude items in general.

It is unlikely that any approach to translation could produce attitude items equivalent to the personality items from which they were translated in all respects but their external referent format. Apart from format, the experimental attitude and personality items might be expected to differ in ambiguity and content saturation. Unlike self-descriptive items, attitude items may not only consist of ambiguous statements about a referent, their referent itself may be broad and ambiguous (Banta, 1961). The referent may also lack salience for many respondents. Items which lack salience or personal relevance have been

shown to elicit more acquiescence than highly relevant items (L. Elliott, 1961). Because they lack self-reference, attitude items probably also elicit desirability responding less strongly than personality items. This may make them more ambiguous as well (Messick, 1967), but this variable is unlikely to play a role in this study because the items of the experimental scales were selected on the basis of their neutral desirability scale values.

Differences in item ambiguity between the experimental attitude and personality scales would markedly affect the interpretation of the results. As shown earlier, the well-established relationship between ambiguity and acquiescence is probably a relationship between ambiguity and true responding, since ambiguity appears to elicit conformist behaviour (R. Elliott, 1961) and since true responding and conformity appear to be related (Gage & Chatterje, 1960; Quinn, 1963). The absence of any difference in the ambiguity ratings of the experimental attitude and personality scales thus rules out a theoretically very plausible alternative to hypothesis 2.

Because the ambiguity ratings assume such importance in the interpretation of the results in relation to hypothesis 2, it is important to examine their adequacy. The number of judges was relatively small. However, the sample of judges was drawn from the same population as the respondents of the main sample and the comparisons shown in Table 5 are based on large numbers of items. The method used here to obtain the ambiguity ratings correlated highly with three other methods in a study by Miklich (1965), the split-half reliabilities of

the sets of items compared were adequate, and the procedure used was sufficiently sensitive to yield a highly significant difference between the experimental attitude scales and the F scale type item scales.

Content saturation is the property on which one would expect the experimental attitude and personality items to differ most markedly, since only the latter were selected from appropriate homogeneous item pools. The attitude scales obtained somewhat lower loadings on relevant content factors than the personality scales. However, while differences in content saturation must be kept in mind in making comparisons between the attitude and personality items, they do not have an obvious bearing on the potential to elicit true responding, particularly if they are, as in this case, small enough not to produce differences in ambiguity.

The experimental attitude and personality items thus appear to differ primarily in format and they do not differ in item ambiguity, the extraneous characteristic that could most directly affect the interpretation of the results. Furthermore, the experimental attitude items used are not unusually ambiguous and appear to elicit true responding more strongly than item endorsement primarily because of their external referent format. That the strength with which attitude items elicit true responding also depends on ambiguity, however, is indicated by the fact that the distinctly more ambiguous F scale type item scales elicited true responding more strongly than any other set of scales.

Self-Descriptive Items and Item Endorsement

The average of the loadings on item endorsement and true responding did not differ for the experimental personality scales, the PRF

acquiescence scales, and the MMPI acquiescence scales. Hypothesis 3, stating that personality items elicit item endorsement more strongly than true responding, was not supported by the results. This is surprising, since hypothesis 3, unlike hypothesis 2, was based on directly relevant evidence. The results of this study appear to contradict those obtained by Jackson and Messick (1965).

The most likely explanations for this apparent contradiction focus on the difference between the items used in this study and by Jackson and Messick (1965), and in the context in which the items were answered. Jackson and Messick obtained their major item endorsement factor and minor true responding factor using the items of MMPI. Their items covered a wider range of social desirability scale values and tended to be more undesirable than the neutral items used in the present study. The evidence suggests that moderately undesirable items elicit more item endorsement than neutral items. Jackson (1968) factor analyzed his 24 heterogeneous MMPI scales and obtained a major acquiescence factor which in the light of his threshold model and of Rogers (see Footnote 2) simulation study, clearly reflects item endorsement. The largest absolute loadings on this factor were obtained by six moderately undesirable scales. Jackson's (1968) comparison of the performance of high and low item endorsers also appears to indicate that moderately undesirable scales elicit a maximum of item endorsement. The two groups differed most on the moderately undesirable 20-item MMPI scales. According to Jackson's new model, high item endorsers are subjects who have a low endorsement or desirability threshold and who more readily endorse

relatively undesirable items. Neutral items have desirability values above the threshold of a large proportion of the subjects, they consequently elicit item endorsement less reliably and discriminate less well between high and low item endorsers than moderately undesirable items.

A second explanation for the apparent difference between the present results and those of Jackson and Messick (1965) is that in the latter study the subjects answered items in the context of other items referring to symptoms of serious disorders and items which are highly undesirable for other reasons. This may have alerted them and made them respond more consistently on the basis of whether the desirability of an item was above or below their endorsement threshold.

Personality items thus do not appear to elicit item endorsement more strongly than true responding simply because they are self-descriptive. It is likely that they must exhibit at least one other attribute if they are to elicit primarily item endorsement. This attribute is a nonneutral social desirability scale value. They appear to elicit a maximum of item endorsement if they are moderately undesirable, and when the respondent is sensitized to their desirability value by highly undesirable items among the set of items he is answering.

SUMMARY AND CONCLUSIONS

A two-part questionnaire consisting of 560 dichotomous items and an Adjective Checklist were administered to 195 undergraduate male and female students. The questionnaire consisted of 47 scales, 20 of these were attitude scales whose items had external referents, 24 were personality scales consisting of self-descriptive items. Two desirability scales and one validity scale constituted the remaining three scales. In terms of wording and keying, 12 of the 44 attitude and personality scales were positively worded and true-keyed, 12 were positively worded and false-keyed, 10 were negatively worded and true-keyed, and 10 were negatively worded and false-keyed. The items comprising these scales were selected for their acquiescence eliciting potential and the ambiguity of each item was rated by 11 judges. The Adjective Checklist yielded three scores reflecting the tendencies to regard desirable, neutral, and undesirable adjectives as self-descriptive.

The 50 variables were subjected to a principal axis analysis. It was predicted that two major factors would emerge from this analysis: a true responding factor separating true-keyed from false-keyed scales, and an item endorsement factor separating acceptance-keyed from rejection-keyed scales. These two factors were not expected to meet criteria of simple structure. The first eight factors of the principal

axis solution were rotated to a varimax criterion, and of the resulting factors the four most clearly reflecting response sets were rotated graphically.

The two major hypothesized factors emerged clearly. True responding separated true- and false-keyed scales perfectly, item endorsement separated acceptance-keyed from rejection-keyed scales almost perfectly. The attitude scales obtained significantly higher loadings on true responding than on item endorsement, but the loadings of the personality scales on the two factors did not differ significantly. The results support the contention that ambiguous attitude items elicit true responding more strongly than unambiguous attitude items, and that attitude items in general, because of their external referent format and independently of their ambiguity, elicit true responding more strongly than item endorsement. The results also suggest that personality items elicit item endorsement more strongly than true responding under specific conditions which remain to be explored.

More generally, the results throw some light on one of the most heated controversies exercising minds as well as tempers of researchers in the area of personality assessment and test-taking behaviour. They indicate that the low correlations obtained among different measures of acquiescence, the low correlations obtained between measures of acquiescence and theoretically relevant variables like conformity, and the high content consistent correlations obtained between original and reversed MMPI scales are not inconsistent with response set interpretations and do not necessarily confirm the position that subjects respond primarily

to the content of items of structured psychological tests.

This study strongly supports the view that the key to a more adequate understanding of the evidence produced by research on test-taking behaviour in general, and on the role of content and response sets in determining responses to structured psychological tests in particular, is not the use of a broad concept of acquiescence as a panacea or explain-all, nor the attribution of score variance exclusively to desirability or content. The key is more detailed analysis of specific response determinants, among which true responding and item endorsement are likely to play a prominent role.

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LIST OF APPENDICES

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INSTRUCTIONS FOR TRAIT AND ATTITUDE SURVEY¹

Attached to this instruction sheet are an answer sheet and an item booklet. The item booklet contains statements referring to opinions or characteristics. Do not look at them until the instructions are clear to you.

You are to read each statement and answer either YES or NO.

YES indicates that you agree with the statement, or that it is a statement about something which is characteristic of you.

NO indicates that you disagree with the statement, or that it is a statement about something which is uncharacteristic of you.

It is important that you answer every item. If neither YES nor NO seems a very appropriate answer to a particular statement, choose the one which seems more appropriate.

Here are two examples:

1. Old age assistance programs should be abandoned.
2. I like to read stories about the sea.

A person who agrees with the statement that old age assistance programs should be abandoned would put a Y (for YES) in the appropriate space for Item 1 on the answer sheet. If he feels that liking to read stories about the sea is uncharacteristic of him, he would put an N (for NO) in the appropriate space for Item 2. On his answer sheet, his answers would look like this:

1. Y
2. N

All your answers are strictly confidential and only averages of groups will be made public.

Now remove the paper clip at the top of this sheet, fill in the information required at the top of the answer sheet, and start on the items.

PLEASE DO NOT MAKE ANY MARKS ON THE ITEM BOOKLETS

¹The instructions for Form A and B were identical.

INSTRUCTIONS FOR AMBIGUITY RATINGS

Attached to this instruction sheet is a list of statements referring to characteristics or opinions a person might have or express.

Read each statement and decide whether it would seem ambiguous or unambiguous (i.e. clear) to you if you had to indicate whether you agree or disagree with it or whether it is characteristic or uncharacteristic of you. Then indicate your response using the scale below:

1. extremely ambiguous
2. moderately ambiguous
3. slightly ambiguous
4. slightly unambiguous
5. moderately unambiguous
6. extremely unambiguous

KEEP THIS SCALE IN FRONT OF YOU WHILE YOU FILL OUT THE ANSWER SHEET.

For example, look at the following statement:

1. I like to go on camping trips. 1. 3
2. Peace marchers should be treated as traitors. 2. 6

Someone has answered statement 1 with a 3, indicating that he judges it to be slightly ambiguous, and statement 2 with a 6, indicating that he regards it as extremely unambiguous or clear. Your responses might have been quite different.

In a similar manner, make your responses by writing one of the numbers from 1 to 6 to the right of each item number on your answer sheet. It is important that you answer every statement, even if you are not completely sure of your answers.

FORM A ITEMS

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| 1. Pretending to be tipsy can be fun. | PAPT |
| 2. If I feel sad, I don't like to be left alone. | SSNT |
| 3. I have never felt that I was getting too wrapped up in my work. | HPNT ACH T |
| 4. In a conversation, one should let others talk more than oneself. | EAPF |
| 5. When someone asks me for directions, I don't go so far as to draw a map or take the person there myself, even if it is complicated. | HPNF NUR F |
| 6. There is nothing wrong with wanting to be the center of attention at a party. | EANT |
| 7. If I really want to wear something, I am not bothered by it having a spot of dirt here or there. | HPPT ORD F |
| 8. Unimportant games are not worth playing with for hours. | PANF |
| 9. Artists should be interested in creating, not in public attention. | EAPF |
| 10. Sometimes it is useful to act more upset than necessary, in order to gain sympathy from others. | SAPT |
| 11. I don't usually forget to relax when I am supposed to be enjoying myself. | PSNT |
| 12. Most current ideas and theories should not be accepted without serious questioning. | UANT |
| 13. When I go to a doctor, I like him to be businesslike and not ask unnecessary personal questions. | SSPF |
| 14. I do not feel ill at ease when I am with loud people. | ESNT |
| 15. A flashy car that makes people stop and look is well worth paying a lot of money for. | EAPT |
| 16. I often find myself in situations where I must actively defend my point of view. | FRT |
| 17. Science has its place, but there are probably things that might not be understood by the human mind. | SANT |
| 18. A person should not be ashamed to accept charity when he needs it. | PSPT |
| 19. I take advantage of any excuse to have a party. | HPPT AUT T |
| 20. I have learned that one must be independent to be a mature individual. | HPNT IMP F |
| 21. I am seldom outgoing in action. | INFR |
| 22. I have never seen an apple. | FAT |
| 23. Nowadays everyone is prying into matters that must remain personal and private. | USNF |
| 24. I do not have much use for abstract ideas. | HPPT CHA F |
| 25. When I was young, I had a few favorite toys that I played with all of the time. | EAPT |
| 26. A successful teacher is a little bit of an actor. | USNT |
| 27. I can't say that I am more at home in a discussion of sports than in an intellectual discussion. | USPT |
| 28. I envy scholars who have time to think. | USNF |
| 29. I will never be able to figure out why society functions as it does. | HPPT ABA T |
| 30. I accept criticism by younger people calmly. | HPNF CHA T |
| 31. I don't particularly relish the idea of having a very reliable automobile that I could use for years and years. | PAPT |
| 32. People, in general, should get more fun out of life. | EANT |
| 33. I often concentrate all my interest or effort on just one thing at a time. | USPT |
| 34. Musical talent is not something which should just be used for one's own private enjoyment. | PAPF |
| 35. I don't usually keep quiet or listen attentively when someone else is talking. | PANT |
| 36. When I take a walk, I try to identify the trees and flowers I see on the way. | PAPT |
| 37. Work is, as a rule, something quite agreeable. | SANF |
| 38. Someone who doesn't have a good sense of humour is not at all easy to talk to. | |
| 39. There is no reason why adults should not enjoy playing childrens' games. | |
| 40. Generally, sick people should not talk about their illness. | |

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| 41. I often continue with what I am doing, even though someone is waiting for me to stop. | HPPF END T |
| 42. I don't usually try to see the serious implications of a situation. | PSNT |
| 43. The food I usually eat is not exactly plain. | HPNF SEN T |
| 44. If I feel that I am right, I will not give up until I convince others that I know best. | HPNF DOM T |
| 45. The study of the history of a specific nation is more interesting than the study of the history of ideas. | UAPF |
| 46. It is a worthwhile ambition to be a famous athlete whom great crowds of people come to see. | EAPT |
| 47. I like to feel the texture of fabrics. | HPPF SEN T |
| 48. I don't give up if I am unable to persuade a friend of my viewpoint on the first or second try. | HPNF END T |
| 49. I would rather spend my life doing research than work which depends more on physical labour. | USPT |
| 50. I don't go to a doctor unless I am seriously ill. | SSNF |
| 51. Many things make me feel uneasy. | DA |
| 52. I seldom mark a calendar with things I have to do. | HPNT ORD F |
| 53. Every person should have complete faith in his own judgement, not in some supernatural power whose decisions he obeys without question. | FAF |
| 54. I usually speak in an assertive manner. | HPPT AGG T |
| 55. A sane, normal, decent person would probably find it hard to hurt a close friend or relative. | FRT |
| 56. If I were in charge of a group, I would not expect it to accomplish much unless the lines of authority are defined clearly. | HPNT DOM T |
| 57. It is not difficult to forget all about one's work when there is a chance to have fun. | PANT |
| 58. What youth needs most of all is strict discipline, rugged determination, and the will to work and fight for family and country. | FAT |
| 59. I often get so involved in my work that I don't even hear people speak to me. | HPPT ACH T |
| 60. I sometimes make an effort to have my voice sound impressive when I speak. | SSPF |
| 61. I am more self-sufficient than most people. | HPPT END F |
| 62. I need to get lots of sleep even when I'm very busy. | ESPT |
| 63. I have often thought that acting in plays would be very gratifying. | PSNT |
| 64. I don't like adults who have forgotten how to play. | USNT |
| 65. I am not likely to take a watch apart just to discover how it works. | SAPT |
| 66. It is better to follow a good leader than to do something all alone. | SSPT |
| 67. Sometimes I am unable to face the responsibilities of adulthood. | HPPF IMP T |
| 68. I enjoy games in which one has to move quickly without stopping to think. | PSPF |
| 69. I work or study during my spare time. | UANF |
| 70. The study of the mechanics of television is not worth the trouble since a repairman would still do a better job of fixing a TV set. | |
| 71. If I were a famous person, I would often regret that I was well-known. | |
| 72. An insult to our honour may sometimes be overlooked, for "whosoever shall smite thee on thy right cheek turn to him the other also". | FRF |
| 73. There have been times when I felt trying hard to make friends was a waste of time. | HPPF AFF F |
| 74. Solving riddles and puzzles is a waste of time. | UAPF |
| 75. Tight clothes are not embarrassing to wear. | EANT |
| 76. If I have to make a selection in a store, I prefer to do it without the clerk's advice. | SSPF |
| 77. I like to be around people who argue about the meanings of words. | HPPF UND T |
| 78. I don't mind stopping in the middle of a job. | HPNF ACH F |

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| 79. I often have the feeling that I am doing something evil. | DA |
| 80. To have one's picture taken for no special reason is rather vain. | EANF |
| 81. Most of my teachers were helpful. | DA |
| 82. I never read a book when someone wants to play a game. | HPNT PLA T |
| 83. I would not object to a door-to-door survey that asked questions about personal affairs. | |
| 84. Usually, I can't tell more about food by tasting it than by smelling it. | HPNT SEN T |
| 85. Once a topic is of interest to a person, it never becomes boring. | UANF |
| 86. I try to maintain an easy-going, light-hearted attitude towards almost anything. | HPPT PLA T |
| 87. Nothing that happens to me makes much difference one way or the other. | DA |
| 88. I would not be any happier if I worked outdoors all day than if I were an intellectual. | USNT |
| 89. If someone talks himself into a corner, I usually just keep quiet and see how he will get out of it. | HPPF NUR F |
| 90. People who do silly things at parties get on the nerves of the other guests. | EANF |
| 91. When a person has a problem or worry he should probably drop everything and concentrate upon it until the solution appears. | FRF |
| 92. Many of our social problems would probably be solved if we could somehow get rid of the immoral, crooked, and feeble-minded people. | FRT |
| 93. I am always prepared to do what is expected of me. | DA |
| 94. I like books or stories that are vague and unrealistic even if I have not read anything which explains what the author means. | |
| 95. If I were exploring a strange place at night, I would want to carry a light. | INFR |
| 96. One should never make light of matters which someone else considers serious. | PANF |
| 97. No weakness or difficulty can hold us back if we have enough willpower. | FAT |
| 98. A person who has bad manners, habits, and breeding would probably find it hard to get along with decent people. | FRT |
| 99. A love of freedom and complete independence are the most important virtues children should learn. | FAF |
| 100. I don't prefer pets which are very independent of their masters to small, cuddly ones. | HPNT NUR T |
| 101. I remain calm when others make fun of me. | HPPF ABA T |
| 102. Examining new inventions closely and finding out how they work is well worth one's time. | UAPT |
| 103. I would find designing children's toys a very dull activity. | PSPF |
| 104. My obligations often keep me at home when others are out having fun. | HPPT IMP F |
| 105. The latest cultural developments are not particularly interesting. | UANF |
| 106. I don't seek out activities controlled by strong leaders. | HPNT AUT T |
| 107. I would never write about myself, because it would look like bragging. | ESNF |
| 108. As a rule, I don't like to show people unusual objects I have collected. | |
| 109. If I were an inventor, I would only be satisfied with inventions that have an obvious practical application. | USPF |
| 110. I praise people, even when they may not entirely deserve it. | HPPT REC T |
| 111. I have a number of health problems. | DA |
| 112. I believe people tell lies any time it is to their advantage. | DA |
| 113. Nobody ever learned anything really important through suffering. | FAF |
| 114. A newspaper story is seldom complete and the reader really requires additional facts which he must look for himself. | UAPT |
| 115. Even if I have accomplished something, I seldom tell others about it. | HPNT ABA T |

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| 116. It is known with complete certainty that the urge to jump from high places is learned, not inborn. | FAF |
| 117. I almost always feel sleepy and lazy. | DA |
| 118. The study of business is not as interesting as the study of science. | UANT |
| 119. I always try to be considerate of the feelings of my friends. | DA |
| 120. I was really glad when I graduated from school. | USPF |
| 121. I am more than eighty years old. | INFR |
| 122. My worries don't disappear when I get into a boisterous fun-loving crowd. | PSNF |
| 123. There is nothing wrong with being just one of the crowd. | EANF |
| 124. I would work as hard for money as I would for prestige. | HPPF REC F |
| 125. The role of a friend is not to try to tell a person what to do. | SANF |
| 126. Most TV comedies are not worth watching. | PANF |
| 127. An interest in books is not important in a child. | UANF |
| 128. It is foolish and ridiculous to have ideas that our lives could ever possibly be controlled by plots hatched in secret places. | FAF |
| 129. I could not get along without as many friends as I have now. | HPNT AFF T |
| 130. I am not willing to give up my own privacy or pleasure in order to help other people. | DA |
| 131. Most people are as well-qualified as any expert to solve their own problems. | SAPF |
| 132. I have definite preferences in the type of perfume that women wear. | HPPT SEN T |
| 133. I find it very difficult to concentrate. | DA |
| 134. I prefer to study things which have a direct practical use. | HPPT UND F |
| 135. If necessary, I would spank a child who misbehaved. | HPPF AGG T |
| 136. I have attended school for at least six years during my life. | INFR |
| 137. I like people who seem willing to take care of me. | SSPT |
| 138. It would not bother me in the least if I had to "put someone in his place". | HPNT AGG T |
| 139. I do not like works of art lacking in symmetry. | HPNF ORD T |
| 140. I often question whether life is worthwhile. | DA |
| 141. The company of younger people is preferable to that of older and mature people. | SAPF |
| 142. I rarely feel the need to tell someone that I like him (or her). | HPNF AFF F |
| 143. I can't say that I would rather study mathematical theory than perform arithmetic computations. | HPNT UND F |
| 144. Because human nature is improving, war and conflict will certainly be eliminated. | FAF |
| 145. I don't like to be around people who never let me know what they are thinking about. | |
| 146. I can't imagine myself playing with childrens' toys. | PSNF |
| 147. If I had the talent, I would like to sing for people. | ESPT |
| 148. I seldom read extensively on any one subject. | USNF |
| 149. I sometimes neglect to wash my hands. | HPPF ORD T |
| 150. I usually don't see the latest popular movies. | HPNF REC F |
| 151. Wars and social troubles may someday be ended by an earthquake or flood that could destroy the whole world. | FRT |
| 152. I often take some responsibility for looking out for newcomers in a group. | DA |
| 153. I could not learn as much on my own as I can by following the suggestions of others. | HPNF AUT F |
| 154. If I were an artist, I would not only be interested in creating, but also in getting the public to notice my work. | ESNT |

155. A clerk's advice is usually helpful in making a selection in a store. SAPT
156. I always enjoy a joke, even when it is on me. PSPT
157. Knowledge of historical trends is very useful in everyday life. UAPT
158. I don't try to appear very serious and businesslike when I am working. HPNF PLA T
159. The businessman and the manufacturer are probably more important to society than the artist and the professor. FRT
160. I feel very protective towards my friends. HPPT NUR T
161. Someday it will certainly be shown that astrology can explain a lot of things. FAT
162. I try to make my work into a game. PSPT
163. I never try to be the center of attention. ESPF
164. If people talked things over and didn't work so much, everybody would be better off. FAF
165. I would probably not file a complaint if a bully roughed me up on the street. HPNF ABA T
166. I am seldom ill. DA
167. When I am with friends, I find light conversation more appropriate than weighty arguments. USPF
168. When someone feels sad, it is a good idea to leave him alone. SAPF
169. When my friends are reluctant, I will often be the first one to try something new. ESPT
170. The uses of atomic energy would be more interesting to study than the theoretical aspects of the science. UAPF
171. I usually let unkind things someone might say about me pass without making any return comment. FAF
172. All attempts to divide people into two distinct classes of the weak and the strong are doomed to failure. HPPF CHA T
173. I like to try out most new gadgets I find on the market. HPNT REC T
174. I can't tell much about a person unless I find out what other people think of him. HPPF DOM T
175. I am quick to complain about food in a restaurant when it is unsatisfactory. FRF
176. We are likely to admire and respect a person if we get to know him well. ESNT
177. When I'm in a conversation, I don't try to keep the other people talking more than I do. DA
178. My memory is as good as other people's. HPNT CHA F
179. I have neither worked for several different people nor done several different types of work during the past few years. HPPF ACH F
180. I make social engagements which interfere with my work fairly often. EAPF
181. Loud people usually embarrass those with them. HPNF UND T
182. I don't find concrete facts any more interesting than discussions of general ideas. ESNF
183. I seldom bother to tell a joke. SSNT
184. If I have injured myself, I don't hesitate to tell others about it. PSNF
185. I don't like to make up fanciful stories. ESNF
186. I don't recall every saying something shocking just to draw attention to myself. ESPF
187. If I had musical talent, I would use it for my own amusement and not to entertain others. INFR
188. I would have a hard time keeping my mind a complete blank. FRF
189. Few people are honest enough that I would let them work in my home without close supervision. DA
190. Many mature people outgrow their feelings of submissive respect and excessive love and gratitude for their parents. HPNF AGG T
191. In the long run, humanity will owe a lot more to the teacher than to the salesman. DA
192. In general, I don't try to get along in life by being gentle and agreeable. HPNF AGG T
193. My life is full of interesting activities. DA

194. I don't like books which can be interpreted in only one way.
195. In a job, I like to have a superior offer to help me do my work. SSPT
196. When I was young, I relied on other people frequently and without being bothered by it. HPPF AUT F
197. I pride myself on being able to see the funny side of every situation. HPPF PLA T
198. Nowadays, since democracy demands that people of widely different background and station mix together, a person should probably not be finicky about catching a disease from them. FRF
199. Even if something gives me pleasure, I need some other justification before doing it. PSPF
200. We ought to let the rest of the world solve their own problems and just look out after ourselves. DA
201. Rarely, if ever, has the sight of food made me ill. DA
202. Our country's way of life is disappearing so fast that force is absolutely necessary to preserve it. FAT
203. I rarely worry about being alone or helpless. SSNF
204. I am able to make correct decisions on difficult questions. DA
205. I seem to have more feeling for my friends than most people. HPPT AFF T
206. Too often it is difficult for people to relax, even after work. PAPP
207. I don't want anyone to have to take care of me when I grow old. SSNF
208. Favours from others are not something one must hesitate to accept. SANT
209. Being more self-sufficient than average is not a particularly important trait. SANT
210. What this country probably needs is a few courageous, tireless, devoted leaders in whom the people can put their faith. FRT
211. If I were planning a picnic and it began to rain, I would not go ahead with the picnic and try to find a sheltered place to have it. HPNT END F
212. I don't think better when I put things down in writing. HPNF IMP T
213. The rebellious ideas that young people sometimes get should probably be encouraged and developed to guarantee mature citizenship in adulthood. FRF
214. I would like to be a foreman. HPPT DOM T
215. The responsibilities of adulthood are not particularly difficult to face. SANF
216. Tight clothes bother me. ESPF
217. When I was a child, I seldom got along without the teacher's help. SSNT
218. People should see clearly the serious implications of every situation. PAPP
219. If something gives pleasure, one does not need some other justification for doing it. PANT
220. I have never ridden in an automobile. INFR
221. Sometimes I become so excited that I find it hard to get to sleep. HMPT
222. I do not like to go to parties and other affairs where there is lots of loud fun. HMNT
223. I do not know who is responsible for most of my troubles. HMNF
224. I daydream very little. HMNT
225. I am made nervous by certain animals. HMPF
226. I did not like "Alice in Wonderland" by Lewis Carroll. HMNF
227. I seldom worry about my health. HMNT
228. When I was a child, I never belonged to a crowd or gang that tried to stick together through thick and thin. HMNF
229. I must admit that I have at times been worried beyond reason over something that really should not matter. HMPT
230. If I could get into a movie without paying and be sure I was not seen, I would probably do it. HMPF
231. I do not have a great fear of snakes. HMNT

232. People often disappoint me.	HMPT
233. There are certain people whom I dislike so much that I am inwardly pleased when they are catching it for something they have done.	HMPF
234. I sweat very easily even on cool days.	HMPT
235. I do not try to cover up my poor opinion of a person so that he won't know how I feel.	HMNF
236. I have several times had a change of heart about my life work.	HMPF
237. Sometimes without any reason or even when things are going wrong, I feel excitedly happy, "on top of the world".	HMPT
238. At times I have worn myself out by undertaking too much.	HMPF
239. I am an important person.	HMPT
240. I prefer work which requires close attention to work which allows me to be careless.	HMPF
241. Once in a while, I think of things too bad to talk about.	HMPT
242. I believe I am no more nervous than most others.	HMNT
243. People haven't as a rule misunderstood my intentions when I was trying to put them right and be helpful.	HMNF
244. While in trains, buses, etc., I often talk to strangers.	HMPF
245. I have had periods in which I lost sleep over worry.	HMPT
246. It is not hard for me to ask help from my friends, even though I cannot return the favour.	HMNT
247. I have not given up hope of amounting to something.	HMNF
248. I have often felt that strangers were looking at me critically.	HMPF
249. I don't enjoy gambling.	HMNT
250. I almost never dream.	HMNF
251. I am easily awakened by noise.	HMPT
252. I do not like to read newspaper articles.	HMNT
253. I don't get upset when people say silly things about me.	HMNF
254. I am not more sensitive than most other people.	HMNT
255. Knowing some important people does not make me feel important.	HMNF
256. I often must sleep over a matter before I decide what to do.	HMPF
257. My relatives are nearly all in sympathy with me.	HMPT
258. When I take a new job, I like to be tipped off on who should be gotten next to.	HMPF
259. I am afraid when I look down from a high place.	HMPT
260. I work under a great deal of tension.	HMPF
261. I do not like to read about history.	HMNT
262. At times I feel like smashing things.	HMPT
263. I would not like to be a journalist.	HMNF
264. Almost never does my mind work more slowly than usual.	HMNT
265. I have met problems so full of possibilities that I have been unable to make up my mind about them.	HMPF
266. I can't remember "playing sick" to get out of something.	HMNF
267. I don't usually suffer from sleeplessness.	HMNT
268. I like dramatics.	HMPT
269. I do not get friendly with people very easily.	HMNF
270. I dream frequently about things that are best kept to myself.	HMPF
271. I don't frequently ask people for advice.	HMNT

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| 272. My conduct is largely controlled by the customs of those about me. | HMPT |
| 273. If I were a reporter, I would very much like to report news about the arts. | HMPT |
| 274. I am quite often not in on the gossip and talk of the group I belong to. | HMNF |
| 275. I have no fear of spiders. | HMNT |
| 276. I am against giving money to beggars. | HMPT |
| 277. When I leave home I do not worry about whether the door is locked and the windows closed. | HMNF |
| 278. I am not easily embarrassed. | HMNT |
| 279. I seldom become very excited. | HMNF |
| 280. I have at times stood in the way of people who were trying to do something, not because it amounted to much, but because of the principle of the thing. | HMPT |

Note.- The letters to the right of each item indicate the scale it belongs to. For the items of the balanced PRF acquiescence scales, the trait measured and the direction of keying in terms of content are also indicated. The abbreviations for the scales are explained in Table 3. The abbreviations to indicate the traits measured by the PRF acquiescence scale items are: ABA--Abasement, ACH--Achievement, AFF--Affiliation, AGG--Aggression, AUT--Autonomy, CHA--Change, DOM--Dominance, END--Endurance, IMP--Impulsiveness, NUR--Nurturance, ORD--Order, PLA--Play, REC--Social Recognition, SEN--Sentience, UND--Understanding. The items for which no identification is given were filler items which were not scored.

FORM B ITEMS

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| 1. I try to get along in life by being gentle and agreeable. | HPPT AGG F |
| 2. I seldom concentrate all my interest or effort on just one thing at a time. | |
| 3. Artists should not only be interested in creating, but also in getting the public to notice their work. | EANT |
| 4. Most people won't believe the truth no matter how obvious it is. | DB |
| 5. I can always tell more about food by tasting it than by smelling it. | HPPF SEN F |
| 6. When I'm in a conversation, I try to keep the other people talking more than I do. | ESPF |
| 7. I often sit and stare directly into the sun for hours on end. | INFR |
| 8. Our way of life is disappearing so fast that force might be necessary to preserve it. | FRT |
| 9. I am unable to accept most current ideas and theories automatically. | USNT |
| 10. I always have more fun than other people seem to. | PSPT |
| 11. Making up fanciful stories is not a very interesting activity. | PANF |
| 12. There is no reason why people should hesitate to tell others about it when they have injured themselves. | SANT |
| 13. I don't usually speak in an assertive manner. | HPNT AGG F |
| 14. I like being around people, even those who never let me know what they are thinking about. | |
| 15. If I have to make a selection in a store, I ask the clerk for advice. | SSPT |
| 16. The responsibilities of adulthood are sometimes difficult to face. | SAPT |
| 17. I don't recall ever having tried to make my voice sound more impressive than usual. | |
| 18. I would probably file a complaint if a bully roughed me up on the street. | HPPT ABA F |
| 19. I can tell much about a man without knowing what other people think of him. | HPPT REC F |
| 20. Singing for people is probably an enjoyable activity, if you have the talent. | EAPT |
| 21. I seldom find myself in situations where I must actively defend my point of view. | |
| 22. I never need much sleep when I'm very busy. | HPNT END T |
| 23. Some youths probably need the qualities of strict discipline, rugged determination, and the will to work and fight for family and country. | FRT |
| 24. I can't help getting annoyed when others make fun of me. | HPNT ABA F |
| 25. Acting in plays is very gratifying. | EAPT |
| 26. A love of freedom and complete independence may be important virtues for children to learn. | FRF |
| 27. I have never found it bothersome to try hard to make friends. | HPNF AFF T |
| 28. I usually prefer to have meat cooked before eating it. | INFR |
| 29. People should take an interest in identifying the trees and flowers they pass when taking a walk. | UAPT |
| 30. I don't like being in the background at parties. | ESNT |
| 31. If I feel sad, I prefer to be left alone. | SSPF |
| 32. Most jokes are not worth telling. | EANF |
| 33. I would never spank a child who misbehaved. | HPNF AGG F |
| 34. I often mark a calendar with things I have to do. | HPPT ORD T |
| 35. I usually attempt to see the serious side of every situation. | PSPF |
| 36. I am not more self-sufficient than most people. | SSNT |
| 37. I sometimes act more upset than I am in order to gain sympathy from others. | SSPT |
| 38. Once in a while I enjoy acting as if I were tipsy. | PSPT |
| 39. I can't say that I have learned that one must be independent to be a mature individual. | HPNT AUT F |
| 40. I don't like books or stories that are vague and unrealistic unless I have read something which explains what the author means. | |

41. I seek out activities controlled by strong leaders.	HPPT AUT F
42. I am not very interested in trying new gadgets I find on the market.	HPNF CHA F
43. When another person considers a matter to be serious, I rarely make light of it.	PSNF
44. No one will ever figure out why society functions as it does.	UANF
45. I like books which can be interpreted in only one way.	
46. I don't hesitate to accept favours from others.	SSNT
47. Perhaps people should have faith in their own independent judgement, rather than in some supernatural power whose decisions they obey without questions.	FRF
48. It is not worth the trouble to take a watch apart just to discover how it works.	UANT
49. I can learn as much on my own as I can by following the suggestions of others.	HPPF AUT T
50. Designing children's toys must be a very dull job.	PAPF
51. A person should not write about himself since it usually looks as if he were bragging.	EANF
52. Being with loud people embarrasses me.	ESPF
53. I usually use good judgement.	DB
54. Joining a boisterous, fun-loving crowd is not a very effective way to make one's worries disappear.	PANF
55. Scholars who have time to think are in an enviable position.	UAPT
56. I am glad I grew up the way I did.	DB
57. Things with sugar in them usually taste sweet to me.	INFR
58. I don't seem to have more feeling for my friends than most people.	HPNT AFF F
59. Reading extensively on any one subject does not seem to be a good investment of one's time.	UANF
60. Seldom do weaknesses or difficulties hold us back if we have enough willpower.	FRT
61. I don't like watching TV comedies.	PSNF
62. I would object to a door-to-door survey that asked questions about my personal affairs.	
63. I am more interested in learning about the uses of atomic energy than the theoretical aspects of the science.	USPF
64. My daily life includes many activities I dislike.	DB
65. Going to school is boring.	UAPF
66. If something gives me pleasure, I don't need any other justification for doing it.	PSNT
67. If I have accomplished something, I usually tell others about it.	HPPF ABA F
68. I don't like being criticized by younger people.	HPNF ABA F
69. I must admit, I never have any trouble forgetting my work when I have a chance to have fun.	PSNT
70. I don't usually let unkind things someone might say about me pass without making any return comment.	
71. People shouldn't see a doctor unless they are seriously ill.	SANF
72. I give up easily trying to convince others that I know best, even if I feel that I am right.	HPPF DOM F
73. Practical jokes provide entertainment in what might otherwise be very boring situations.	PAPT
74. I hate solving riddles and puzzles.	USPF
75. I usually go and see the latest popular movies.	HPPF REC T
76. I have worked for several different people and done several different kinds of work in the last few years.	HPPT CHA T
77. Discussions of general ideas hold my interest more than concrete facts.	HPPF UND F
78. I don't praise people unless they really deserve it.	HPNT REC F
79. Every truly mature person outgrows childish feelings of submissive respect and of excessive love and gratitude for his parents.	FAF

80. Wearing tight clothes would not bother me.	ESNT
81. A person who has bad manners, habits, and breeding, can never expect to get along with decent people.	FAT
82. I like my work and don't try to get finished with it in order to have fun.	PSPF
83. If I were planning a picnic and it began to rain, I would go ahead with the picnic and try to find a sheltered place to eat.	HPPT END T
84. I would like to have a flashy car that would make others stop and look as I drove by.	ESPT
85. I usually keep quiet and listen attentively when someone else is talking.	
86. I have sometimes felt that I or somebody I know well was getting too wrapped up in his work.	HPPT ACH F
87. Work should be made into a game whenever possible.	PAPT
88. I have never been really happy.	DB
89. I am careful to plan for my distant goals.	DB
90. I don't envy anyone who has to be a foreman.	HPNF DOM F
91. If I were a famous person, I would never regret that I was well-known.	
92. I am often outgoing in action.	HPPT IMP T
93. Sometimes I see birds near my home.	INFR
94. It is never difficult to relax at times when one is supposed to be enjoying oneself.	PANT
95. If somebody tries to make me stop in the middle of a job, I tell him to wait until I am finished.	HPPF ACH T
96. Probably few people have learned important things through suffering.	FRF
97. I am not living what I would consider to be the right kind of life.	DB
98. A new invention is no good unless it has an obvious practical application.	UAPF
99. Doing research is more worthwhile than doing work which depends more on physical labour.	UAPT
100. I would like to have one very reliable automobile that I could use for years and years.	HPPF CHA F
101. I do not prefer the study of business to the study of science.	USNT
102. I wouldn't be caught dead doing some of the things people do at parties.	ESNF
103. I am afraid to speak to a friend who has not spoken to me first.	DB
104. I am never able to do things as well as I should.	DB
105. I try to appear very serious and businesslike when I am working.	HPPF PLA F
106. Science has its place, but there are many things that can never possibly be understood by the human mind.	FAT
107. If I were to study history, I would find the history of a specific nation more interesting than the history of ideas.	USPF
108. I never get so fascinated by some unimportant game that I would play with it for hours.	PSNF
109. Abstract ideas are not of much use.	UANF
110. My obligations seldom keep me at home when others are out having fun.	HPNT IMP T
111. Adults who have forgotten how to play are not very likable.	PANT
112. I don't have definite preferences in the type of perfume that women wear.	HPNF SEN F
113. Being alone or helpless is rarely worth worrying about.	SANF
114. We are certainly bound to admire and respect a person if we get to know him well.	FAF
115. Some of the works of art I like lack symmetry.	HPPF ORD F
116. I never bother to consider the results of any act of mine before I do it.	DB
117. Doing something that would benefit humanity appeals to me.	DB
118. One should try something new even if one's friends are reluctant.	EAPT
119. I never neglect to wash my hands.	HPNF ORD F

120. A doctor should be businesslike and not ask unnecessary personal questions.	SAPF
121. Before I do something I try to figure out how it will affect my friends.	DB
122. The businessman and the manufacturer are undoubtedly more important to society than the artist and the professor.	FAT
123. I don't mind being just one of the crowd.	ESNF
124. It would bother me if I had to "put someone in his place".	HPPF AGG F
125. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put all of their faith.	FAT
126. The food I eat is usually very plain.	HPPT SEN F
127. I often feel the need to tell someone that I like him.	HPPF AFF T
128. I will not wear an article of clothing that has a spot on it.	HPNT ORD T
129. An excuse to have a party is something people should take advantage of.	PAPT
130. A teacher's help is very important to a child.	SANT
131. I have never been an unusually weak or sickly person.	DB
132. Even without clearly defined lines of authority, I would expect a group of which I were a member to accomplish quite a bit.	HPPT DOM F
133. The urge to jump from high places is probably learned, not inborn.	FRF
134. I get along with people at parties quite well.	DB
135. I like to show people unusual objects I have collected.	
136. Nowadays some people are prying into matters that should probably remain personal and private.	FRT
137. I rarely make social engagements which interfere with my work.	HPNF ACH T
138. Few of my friends try to tell me what to do.	SSNF
139. Wars and social problems will only be ended by an earthquake or flood and will destroy the whole world.	FAT
140. Nowadays, since democracy demands that people of widely different backgrounds and station mix together, a person should never be finicky about catching a disease from any of them.	FAF
141. I rarely feel unable to face the responsibilities of adulthood.	SSNF
142. I rarely get so involved in my work that I don't even hear people speak to me.	HPNT ACH F
143. I would like to be a famous athlete whom crowds of people came to see.	ESPT
144. Sometimes I am afraid of my friends, although I can't say why.	DB
145. If people occasionally talked things over and didn't work so hard some others would probably be better off.	FRF
146. I have never talked with anyone by telephone.	INFR
147. I give up if I am unable to persuade a friend of my viewpoint on the first or second try.	HPPF END F
148. It is not easy to imagine a grown up playing with childrens' toys.	PANF
149. I seek the company of younger people, rather than that of older and mature people.	SSPF
150. I prefer not to talk about how I feel when I am ill.	SSNF
151. I would rather follow a good leader than do something by myself.	SSPT
152. If someone gave me too much change I would tell him.	DB
153. When a person has a problem or worry he should always drop everything and concentrate upon it until the solution appears.	FAF
154. No sane, normal, decent person would ever think of hurting a close friend or relative.	FAT
155. Because human nature is improving, war and conflict may someday be eliminated.	FRF
156. The idea of having a very reliable automobile that I would use for years and years does not appeal to me very much.	HPNT CHA T
157. When I see a new invention, I try to find out how it works.	USPT

158. When I was young, I was seldom able to rely on other people without being bothered by it.	HPNF AUT T
159. I realize that I often forget to relax when I am supposed to be enjoying myself.	PSPF
160. In most conversations, people don't know when to stop talking and when to start listening.	EANT
161. It is silly to say shocking things just to draw attention to oneself.	EANF
162. I would not be ashamed to accept charity if I needed it.	SSNT
163. I did many very bad things as a child.	DB
164. Many attempts to divide people into two distinct classes of the weak and the strong are probably doomed to failure.	FRF
165. I would rather study the theory of mathematics than perform arithmetic computations.	HPPT UND T
166. A discussion of sports is not as interesting as an intellectual discussion.	UANT
167. Studying and working are things which one should do even in one's spare time.	PAPF
168. I am one of the lucky people who could talk with my parents about my problems.	DB
169. All of our social problems would be solved if we got rid of the immoral, crooked, and feebleminded people.	FAT
170. I think best when I put things down in writing.	HPPF IMP F
171. I often read a book even if someone wants to play a game.	HPPT PLA F
172. I find it almost impossible to talk to someone who doesn't have a good sense of humour.	PSNT
173. I don't like to have my picture taken.	ESNF
174. If I had musical talent, I would not just use it for my own enjoyment, but also for entertaining others.	ESNT
175. I rarely complain about the food in a restaurant, even when I should.	HPNT DOM F
176. I seldom continue with what I am doing when someone is waiting for me to stop.	HPNF END F
177. I don't like studying things just because they have a direct practical use.	HPNT UND T
178. I enjoy childrens' games.	PSPT
179. I don't try to maintain an easy-going, light-hearted attitude towards almost anything.	HPNT PLA F
180. People who are willing to take care of others are definitely more likable than people who are not.	SAPT
181. When someone asks me for directions, I draw a map or take them there myself if it is complicated.	HPPF NUR T
182. Trying to be the center of attention is a sign of bad taste.	EAPF
183. It is probably foolish and ridiculous for some people to have thoughts that our lives could be controlled by plots hatched in secret places.	FRF
184. If someone talks himself into a corner, I can't resist the urge to help him get out of it.	HPNF NUR T
185. I don't feel very protective towards my friends.	HPNT NUR F
186. Being taken care of as one grows old is not as pleasant an experience as some people seem to think.	SANF
187. Most people are honest enough that I would let them work in my home without close supervision.	
188. I would not work as hard for money as I would for prestige.	HPNF REC T
189. If a person feels sad, it is not a good idea to leave him alone.	SANT
190. Musical talent is something to be used for one's own enjoyment rather than to entertain others.	EAPF
191. When people are with friends, light conversation is more appropriate than weighty arguments.	UAPF
192. I have never felt sad.	INFR
193. I try to consider all sides of an issue before I form an opinion.	DB
194. Someday it might be shown that astrology can explain a lot of things.	FRT
195. I don't pride myself on being able to see the funny side of every situation.	HPNF PLA F
196. An insult to our honour should always be overlooked, for "whosoever shall smite thee on the right cheek, turn to him the other also".	FAF

197. Loud people do not usually embarrass those with them. EANT
198. Being more self-sufficient than average is an important trait. SAPF
199. If I wanted to be a good teacher, I would act a little bit like an actor in the classroom. ESPT
200. I don't enjoy games in which one has to move quickly without stopping to think. HPNF IMP F
201. The rebellious ideas that young people sometimes get must always be encouraged and developed at all costs to guarantee mature citizenship in adulthood. FAF
202. People who work outdoors all day are not happier than intellectuals. UANT
203. I would never attempt to study the mechanics of television because a repairman would still do a better job of fixing my set. USNF
204. I could get along without as many friends as I have now. HPPT AFF F
205. I prefer pets which are very independent of their masters to small, cuddly ones. HPPT NUR F
206. I don't particularly enjoy feeling the texture of fabrics. HPNT SEN F
207. When I was a child, I showed no interest in books. USNF
208. Having a superior offer to help with one's work is a pleasant surprise. SAPT
209. If I were an artist, I would try to be interested in creating only, and not in public attention. ESPF
210. It is better to make one's selection in a store without the advice of a clerk. SAPF
211. It is not necessary to see the serious implications of every situation. PANT
212. I really don't know what is involved in any of the latest cultural developments. USNF
213. I feel I am as well qualified as any expert to solve my problems. SSPF
214. Some justification other than that it provides pleasure is needed for doing anything. PAPP
215. I never seem to run out of questions on topics that interest me. USNT
216. After I have read a newspaper story, I look for additional facts that will make the story more complete. USPT
217. I don't like to be around people who argue about the meaning of words. HPNF UND F
218. I tend to be a very nervous, irritable person. DB
219. I have on occasion been able to relate some historical trend to my everyday life. USPT
220. A person should not wear tight clothes. EAPF
221. I could not be happy living all alone in a cabin in the woods or mountains. HMNT
222. I frequently have to fight against showing that I am bashful. HMPT
223. I am apt to hide my feelings in some things, to the point that people may hurt me without their knowing about it. HMPF
224. My mother and father seldom made me obey when I thought it was unreasonable. HMNF
225. I enjoy detective or mystery stories. HMPT
226. My way of doing things is apt to be misunderstood by others. HMPF
227. I have never had any breaking out on my skin that has worried me. HMNT
228. I practically never blush. HMNF
229. I resent having anyone take me in so cleverly that I have to admit that it was one on me. HMPT
230. I do not have a habit of counting things that are not important, such as bulbs on electric signs, and so forth. HMNT
231. I don't get impatient when people ask my advice when I am working on something important. HMNF
232. I have not been disappointed in love. HMNT
233. I think that I feel more intensely than most people do. HMPF
234. If I were in trouble with several friends who were equally to blame, I would rather take the whole blame than to give them away. HMPT

235. I would like to be a singer.	HMPF
236. What others think of me does not bother me.	HMNF
237. I am not usually self-conscious.	HMNT
238. I don't readily become sold one hundred per cent on a good idea.	HMNF
239. I like to keep people guessing what I'm going to do next.	HMPT
240. I commonly wonder what hidden reason another person may have for doing something nice for me.	HMPF
241. I do not like to talk about sex.	HMNT
242. I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.	HMPT
243. I feel unable to tell anyone all about myself.	HMPF
244. I think I would like the kind of work a forest ranger does.	HMPT
245. I have periods of such great restlessness that I cannot sit long in a chair.	HMPF
246. I would certainly enjoy beating a crook at his own game.	HMPT
247. I like to be with a crowd who play jokes on one another.	HMPF
248. I have very few fears compared to my friends.	HMPT
249. I am not often sufficiently annoyed when someone tries to get ahead of me in a line of people to speak to him about it.	HMNF
250. I do not worry about catching diseases.	HMNT
251. I do not find it hard to set aside a task that I have undertaken, even for a long time.	HMNF
252. I sometimes keep on at a thing until others lose their patience with me.	HMPF
253. I usually "lay my cards on the table" with people that I am trying to correct or improve.	HMPT
254. Sometimes, when embarrassed, I break out in a sweat which annoys me greatly.	HMPF
255. At times I have been so entertained by the cleverness of a crook that I have hoped he would get by with it.	HMPT
256. I do not believe there is a Devil and a Hell in the afterlife.	HMNT
257. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.	HMPF
258. I do not mind being made fun of.	HMNF
259. Often I can't understand why I have been so cross and grouchy.	HMNT
260. I like to flirt.	HMPT
261. Sometimes I am sure that other people can tell what I am thinking.	HMPF
262. I hate to have to rush when working.	HMPT
263. I feel sympathetic towards people who tend to hang on to their griefs and troubles.	HMPF
264. I don't blush more often than most people.	HMNF
265. I have been quite independent and free from family rule.	HMPT
266. I do not enjoy a race or game better when I bet on it.	HMNT
267. It makes me nervous to have to wait.	HMPF
268. I have seldom had to take orders from somebody who did not know as much as I did.	HMNF
269. I feel that it is certainly not wise to keep my mouth shut when I'm in trouble.	HMNT
270. I am often inclined to go out of my way to win a point with someone who has opposed me.	HMPT
271. I worry over money and business.	HMPF
272. Something exciting will never pull me out of it when I am feeling low.	HMNF
273. It is unusual for me to express strong approval or disapproval of the actions of others.	HMNT
274. It does not bother me that I am not better looking.	HMNF

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|---|------|
| 275. I do not like to see women smoke. | HMNT |
| 276. I don't like to stir up excitement even when I am bored. | HMNF |
| 277. I am not very shy. | HMNT |
| 278. Never have I very much wanted to leave home. | HMNF |
| 279. Even if given the chance, I could not do much of benefit to the world. | HMNT |
| 280. I do not try to correct people who express an ignorant belief. | HMNF |

ADJECTIVE CHECKLIST

Below is a list of adjectives. Place a checkmark in the space provided beside each adjective which describes you fairly well or very well.

deceptive	()	jealous	()	stern	()
pleasant	()	nonchalant	()	theatrical	()
outspoken	()	conforming	()	unsophisticated	()
rebellious	()	poised	()	respectable	()
blunt	()	unfair	()	unappealing	()
irrational	()	bashful	()	frustrated	()
entertaining	()	gracious	()	prudent	()
bossy	()	refined	()	excited	()
excitable	()	materialistic	()	venturesome	()
bragging	()	hesitant	()	talkative	()
self-contented	()	changeable	()	impressionable	()
anxious	()	self-controlled	()	proud	()
eager	()	gossipy	()	dependent	()
hard-headed	()	disturbed	()	lonely	()
self-concerned	()	deliberate	()	discriminating	()
enterprising	()	innocent	()	ordinary	()
well-bred	()	cool-headed	()	experienced	()
self-satisfied	()	forward	()	superficial	()
shy	()	unpredictable	()	cold	()
impulsive	()	sensitive	()	strict	()
tender	()	unsystematic	()	rational	()
dull	()	conventional	()	lucky	()
superstitious	()	cautious	()	critical	()
painstaking	()	solemn	()	tolerant	()
shrewd	()	congenial	()	irresponsible	()
studious	()	ungrateful	()	progressive	()
prideful	()	meddlesome	()	skeptical	()
aggressive	()	choosy	()	extravagant	()
moralistic	()	skillful	()	suspicious	()
self-conscious	()	moderate	()	inattentive	()
eccentric	()	resigned	()	crude	()
inoffensive	()	creative	()	perceptive	()
conservative	()	unpleasant	()	middleclass	()
wholesome	()	productive	()	companionable	()
childish	()	self-righteous	()	bright	()
uncivil	()	self-possessed	()	reckless	()
authoritative	()	unattentive	()	clear-headed	()
able	()	pessimistic	()	daring	()
satirical	()	unreliable	()	forceful	()
undecided	()	patient	()	cunning	()
self-reliant	()	suave	()	dissatisfied	()
prejudiced	()	trusting	()	inexperienced	()
constructive	()	well-read	()	unmethodical	()
perfectionistic	()	inefficient	()	disobedient	()
lonesome	()	kind	()	purposeful	()
boisterous	()	average	()	shallow	()
unobliging	()	emotional	()	reasonable	()
impolite	()	persistent	()	daredevil	()
admirable	()	old-fashioned	()	daydreaming	()
methodical	()	unconventional	()	wordy	()
likeable	()	naive	()	complaining	()
ambitious	()	touchy	()	optimistic	()
oversensitive	()	cordial	()	cowardly	()
talented	()	grouchy	()	conformist	()
quiet	()	clever	()	nosey	()
unlucky	()	reserved	()	frivolous	()
meticulous	()	opinionated	()	clownish	()
meek	()	opportunist	()	realistic	()
bold	()	tiresome	()	self-conceited	()
restless	()	adventurous	()	discontented	()
disagreeable	()	unsportsmanlike	()	proficient	()

PRINCIPAL AXIS FACTOR MATRIX

Variable	Factor								h ²
	I	II	III	IV	V	VI	VII	VIII	
ESPT	-40	05	00	-30	14	-31	18	09	41
ESPF	-17	-41	-26	-39	10	-44	07	03	63
ESNT	-20	-12	-28	-51	05	-37	06	01	53
ESNF	-26	-41	00	-35	17	07	11	00	41
EAPT	-26	10	-05	-17	24	-23	09	13	25
EAPF	-10	-52	-13	-27	08	-28	06	-17	49
EANT	-08	22	-01	-22	04	-31	-09	03	21
EANF	-06	-38	03	-08	-01	07	-03	-05	17
PSPT	-36	03	02	-38	03	23	-13	01	35
PSPF	-33	-29	-40	02	23	23	-11	14	50
PSNT	-45	18	-15	-21	26	24	-30	12	53
PSNF	-40	-34	-01	-02	20	16	09	08	35
PAPT	-41	06	-07	-21	03	24	-03	18	32
PAPF	-17	-27	-27	21	33	16	-12	00	37
PANT	-36	21	-19	-07	27	22	-31	13	45
PANF	-33	-41	-09	-04	16	22	-01	-01	37
SSPT	-57	-12	-05	10	-29	-12	-11	-03	47
SSPF	-11	-46	-11	-03	-36	-12	-09	-15	41
SSNT	-29	-12	-12	-17	-39	-10	-17	02	34
SSNF	-52	-23	05	11	-27	-03	-06	13	43
SAPT	-43	18	03	-08	-29	-09	-09	-06	33
SAPF	06	-57	-10	-07	-34	-13	-08	-14	50
SANT	-15	-06	-09	-08	-33	01	-28	17	26
SANF	-26	-29	-11	18	-33	02	-09	06	32
USPT	02	-06	59	-27	07	-04	00	03	43
USPF	19	-40	45	-02	16	-06	-20	28	54
USNT	25	06	22	-11	02	-21	-34	-09	30
USNF	19	-39	39	-10	21	11	08	04	42
UAPT	26	22	43	-15	-15	-02	-05	13	37
UAPF	24	-47	37	10	02	-05	-33	20	58
UANT	-02	19	-06	-01	08	-11	-33	-01	17
UANF	27	-50	25	-04	-02	02	03	12	41
HMPT	-49	24	41	-14	-03	-08	14	-01	51
HMPF	55	-25	-49	-11	-06	12	-09	-02	64
HMNT	41	31	-23	-37	03	00	-12	03	46
HMNF	-47	-33	22	15	-06	06	23	-02	47
HPPT	-10	28	30	-44	-07	12	13	04	41
HPPF	32	-13	-27	28	-01	-02	03	-20	31
HPNT	-02	34	-29	28	20	-19	-09	01	37
HPNF	-05	-33	16	-02	-03	34	17	07	29
FRT	-24	47	-14	03	-26	07	20	18	44
FRF	-13	-28	-18	24	03	07	23	02	24
FAT	-19	52	-12	-02	-32	10	21	24	53
FAF	-05	-34	-08	26	-11	03	26	17	30
DA	42	-14	-05	-43	-16	25	01	-15	49
DB	39	-10	-22	-39	-30	22	02	11	51
AD	06	06	-03	-45	-08	44	04	-36	54
AN	-43	13	26	00	-03	22	-14	-51	60
AU	-54	07	24	25	07	-09	-10	-40	61
INFR	-02	-13	-06	01	25	-09	07	-13	11
SEX	-15	-14	12	23	-23	08	-24	16	25
Eigen- value	4.76	4.40	2.74	2.60	1.94	1.77	1.29	1.19	

Note.-Decimals were omitted, except for the eigenvalues. The abbreviations are explained in Table 3.