Metatraits

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ABSTRACT A metatrait is the trait of having versus not having a trait It refers to whether a given trait dimension or construct can be used to describe a particular personality Using attitudes as an analog to traits, we argue that the study of personality may benefit from considering metatraits Implications for the nature of traits and for the formation and disappearance of traits within a personality are discussed We review strategies for measuring metatraits and conclude that at present it seems best to use interitem variance in responses to specific, familiar trait scales Metatraits will most commonly moderate trait effects, especially such that hypotheses about traits are appropriately tested only with trained individuals Untrained individuals may be susceptible to fluctuating states and situational manipulations Sometimes metatraits may predict behavior directly, independently of trait level Two studies are reported to illustrate metatrait moderation of trait effects and direct prediction of behavior by metatrait

Allport (1937) suggested that not all trait dimensions apply equally well to all people For example, there are introverts and extraverts, but there may also be people who are neither, whose personalities seem introverted in some respects and extraverted in other respects For these latter indi-

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viduals, the dimension of introversion-extraversion is simply irrelevant Another way of putting this view is to propose that personalities differ not only according to their levels of a given trait, but also according to which trait *dimensions* they contain

Bem and Allen (1974) revived Allport's insight in an important paper The impact of Bem and Allen's work was large for two reasons in addition to the inherent importance of the idea First, they proposed some ways of quantifying and operationalizing the idea that different trait dimensions apply to different people, thus opening up possibilities for empirical research Second, they suggested that their work offered a response to the contemporary challenge to personality research suggested in Mischel's (1968) attack on trait research Perhaps unfortunately, Bem and Allen's ideas were absorbed into the Mischel debate, at the cost of focusing on some of the broader implications for understanding the nature and structure of personality The present article hopes to reopen those issues for consideration

Specifically, this article will begin by elaborating the idea that different personalities are constructed out of different trait dimensions (which we call the *metatrait hypothesis*), which entails that a given trait dimension will not apply equally well to all individuals We will then discuss the implications of the metatrait hypothesis for understanding the nature and formation of personality traits and will discuss empirical strategies for measuring and interpreting metatraits We shall argue that metatraits can be used to improve the nomothetic precision, accuracy, and power of empirical tests of trait hypotheses, and we shall provide two illustrative studies using these methods with standard, familiar trait scales

We believe that the insight of Allport (1937) and Bem and Allen (1974) has important implications for the study of personality that have only begun to be realized The metatrait hypothesis suggests that many past empirical studies of trait-behavior relationships have underestimated the true strength of the relationship because these studies have included persons to whom the trait dimension did not apply This might be compared to including male subjects in a study correlating dietary habits with severity of menstrual cramps By eliminating untraited individuals from a sample, a researcher can conduct an improved test of his or her hypothesis Moreover, comparisons between traited and untraited individuals on various dimensions may shed valuable light on how personality traits operate

Metatraits

A metatrait is the trait of having versus not having a particular trait A metatrait is always associated with a particular trait The metatrait refers to the presence versus absence of the associated trait dimension in a person's personality

A metatrait can be conceptualized as having two categories We shall use the term *traited* to refer to individuals whose personalities do contain the associated trait dimension *Untraited* denotes the absence of the trait dimension in a given personality

In terms of research design, a metatrait is normally a moderator variable The nomothetic relationship of the trait to behavior depends on the metatrait Causation of behavior by traits should occur only for traited individuals Untraited individuals should show greater susceptibility than traited individuals to situational influences and manipulations of states Indeed, many constructs are associated with both traits and states, such as self-attention, self-esteem, and anxiety Metatraits may provide a conceptual basis for distinguishing between trait and state effects

Metatraits are not necessarily moderators It is plausible that sometimes metatraits may predict behavior directly, independent of traits Below, we shall consider the likely conditions for such effects

We emphasize that we consider the study of metatraits a nomothetic enterprise (cf Paunonen & Jackson, 1985) Some past researchers have used the idea that not all trait dimensions apply equally to all people to criticize and even reject nomothetic approaches to personality research (e g , Bem & Allen, 1974, Kenrick & Stringfield, 1980) In our view, however, traitedness constitutes a general pattern appropriate to nomothetic study, and use of metatraits can improve nomothetic prediction of behavior from trait measurements by reducing error variance

The idea of metatraits resembles the idea of self-schemata (Markus, 1977) in some respects In her studies of self-schemata, people were classified as either dependent, independent, or aschematic Two important reasons exist for distinguishing between metatraits and self-schemata, however First, metatraits refer to personality and behavior, whereas self-schemata refer to the organization of self-knowledge Use of self-report measures of personality and behavior blurs this distinction somewhat, but conceptually it is fundamental It is theoretically possible

that self-concepts may differ from personality (e g , Freud, 1900/1953), although they may agree in many respects Second, we intended metatraits to be useful to researchers who may be interested in trait dimensions unknown to laypersons We suspect that few people would describe themselves as "low in self-monitoring" or "high in surgency" because they lack familiarity with these terms and concepts It is also plausible that even with familiar trait concepts such as self-esteem, many people may not accurately predict their assessed level

An additional problem with the self-schemata approach is that it has consistently confounded intermediate levels on the dimension with absence of the dimension (cf Burke, Kraut, & Dworkin, 1984) We emphasize that *intermediate or moderate scores on a trait scale are not the same thing as being untraited,* for one can be strongly traited at an intermediate level It is misleading and wrong to describe medium self-esteem as the lack of a level of self-esteem, just as it would be unfair to describe "moderate" or "middle-of-the-road" as being the absence of a political philosophy, or to call middle age the lack of an age

What Is a Trait?

The metatrait hypothesis suggests reexamination of the concept of trait As noted above, many trait researchers implicitly assume that everyone can be classified along a given dimension, so a trait dimension is a conceptual yardstick for measuring all of humanity The metatrait hypothesis implies that any given yardstick may not work properly for all people

Conceiving of traits as simply the product of a measurement process makes each trait dimension applicable to everyone The idea that a particular dimension may not apply to someone is absurd or meaningless in that context A simple analog to this approach would be physical height A metatrait would entail that some people would not have a stable height—perhaps their height fluctuates, for example Obviously this is false with respect to height It may be that systems for measuring height might work better for some than for others It may also be that height will be differentially predictive of behavior among different subgroups For example, height may predict occupational success among basketball players but not among computer programmers But, still, everyone has a height

It is not necessary that all personality traits conform to the model of physical traits, however (To be sure, there are even some physical trait

dimensions, such as gender-linked traits, that do not apply to all Not everyone has a penis size) We suggest that attitudes may furnish a better analog to personality traits than do physical traits The resemblance between personality traits and attitudes has been discussed previously (see Sherman & Fazio, 1983) Both attitudes and personality traits tend to be symbolically mediated, abstract, inner qualities, dependent on meaningful constructs and interpretations Some personality attributes explicitly involve attitudes Self-esteem is essentially an attitude about the self, and authoritarianism and Machiavellianism are measured in part by agreement with attitude statements Personality change may resemble attitude change more than change in height (or in other physical attributes) Height change is gradual, is typically unidirectional (few people shrink, and then only slightly), is rarely controllable, and occurs in incremental movements across a continuum (that is, one never grows from 130 cm to 132 cm without being 131 cm for a while) Attitude and personality, in contrast, can change in either direction, are somewhat controllable, and can change abruptly in discrete jumps or shifts

The metatrait hypothesis becomes plausible if attitudes are taken as the analog to personality traits (cf Sherman & Fazio, 1983) Not everyone has an attitude about every issue Ignorance, indifference, and possibly other factors cause some people to lack attitudes about some things Indeed, it seems impossible for a single psyche to contain an attitude about every conceivable issue

We suggest, therefore, that classifying people according to their attitudes on a given issue must usually result in at least three broad categories pro, con, and no opinion As with metatraits, we argue that moderate opinions are not the same as having no opinion Politicians may be especially sensitive to that difference The contemporary pressures on national politicians make it impossible for a serious candidate to have no opinion on a major issue such as economic policy, busing for school desegregation, or abortion rights Yet the desire to attract maximum votes inclines most politicians toward holding moderate positions on such issues

Recent work on attitudes has suggested the usefulness of a dimension similar to metatraits Fazio, Sanbonmatsu, Powell, and Kardes (1986) revived what they call the *attitude/nonattitude distinction* (Hovland, 1959, also Converse, 1970). They suggest a continuum, having at one endpoint the nonattitude and at the other endpoint a well-learned, strong, highly accessible attitude (1986, p 230)

Perhaps an even better model for metatraits would be high-level, abstract attitudes or ideological positions, such as being liberal or conservative Conservatism would be assessed by asking someone's opinions on a large set of issues Some people may respond consistently, but others might hold some very conservative and some very liberal opinions simultaneously These people correspond to untraited individuals For example, someone might oppose abortion (conservative opinion) and also oppose capital punishment (liberal opinion) These opinions are not inherently or logically incompatible, both, for example, might derive from a belief in the sanctity of human life Yet to hold them both does deviate from a consistent ideological position in terms of liberalism versus conservatism (Also, again, strongly holding both polar views is conceptually quite different from holding moderate views on both issues)

Using attitudes as the analog for personality traits, one may suggest the following concept of a trait A trait is a permanent or semipermanent structure in personality Just as an attitude is about some object, a trait is "about" certain kinds of situations Apart from such situations, the trait is dormant and inactive It is called into action by the appearance of certain situational features It then guides interpretation and evaluation of the circumstances, and behavioral decisions follow from those interpretations and evaluations

Describing traits as structures that underlie certain situational response patterns does not mean that traits are under situational control One important aspect of situation structure is the range of opportunities for action, called the matrix of possibilities (Baumeister & Tice, 1985) The appearance of certain opportunities or options can summon the dispositional tendencies to pursue or avoid them

Like attitudes, traits can vary in strength Trait strength combines several concepts. the intensity of the affective or behavioral response, the breadth of the class of circumstances that invoke the trait, the uniformity of the response, and the automaticity with which the trait is activated Although both metatraits and the presence/absence of attitudes can be understood along a continuum, one must avoid being misled by the continuity With many issues (such as the quality of the food in a particular university's dormitories, or a given state's proposal to increase sales tax), it is quite plausible that 99% of the world's population is on the "nonattitude" endpoint Likewise, many or most people may simply be untraited on a given dimension

Traits Without Metatraits

Not all traits will have associated metatraits Test anxiety, for example, may not be susceptible to metatrait analyses, because test anxiety should be considered a metatrait itself rather than a trait Test anxiety is a proneness to state fluctuations in response to certain stimuli One does not have chronic, stable test anxiety the way one can have chronic anxiety, for test anxiety means feeling anxiety specifically and exceptionally in test-taking situations Likewise, moral traits may turn out on closer inspection to be metatraits rather than traits Few people are traited dishonest, which would mean that they would constantly and consistently lie Dishonesty occurs because of the lack of the trait of honesty Put another way, the difference between an honest person and a dishonest one is the presence versus absence of a psychological configuration in the psyche, which is a metatrait dimension

Additionally, any trait that reduces to a skill or ability may lack a metatrait dimension Either you can swim well, or you can swim poorly, or you cannot swim at all, but there is no such thing as being untraited on the dimension of being able to swim

In general terms, we suggest that all traits based on styles, orientations, beliefs or values, habits, chronic states, and the like can benefit from a metatrait approach In principle, all such traits have metatraits associated with them In contrast, traits that are basically skills or abilities, specific vulnerabilities (especially to state fluctuations), or are themselves based on the presence versus absence of a particular, consistent pattern—these do not have associated metatraits and are unlikely to benefit from metatrait analyses

It may be, however, that certain ability-type traits actually consist of a complex set of component skills, and these may combine consistently or inconsistently in different individuals, producing metatrait-like effects The ability to make friends, for example, is probably not a single skill but a complex mixture of empathy, helpfulness, friendliness, charm, and more Untraited individuals, whose mixture of those skills is quite uneven, may be able to make friends effectively with some people and very ineffectively with others.

One Metatrait, or Many?

Some past views have held that some people are simply more consistent than others in general. That is, some people's behavior is guided by inner

traits, while others are guided by situational factors This idea has led several researchers to search for the trait responsible for consistency (e g , private self-consciousness [Scheier, Buss, & Buss, 1978, Underwood & Moore, 1981] or self-monitoring [Snyder & Monson, 1975]) These views seem to assume that there is just one overriding metatrait, for in a sense the people with the trait of global consistency have more traits than others

In contrast, our approach has assumed that there are many metatraits, each associated with a given trait We have suggested that some people will be dispositionally consistent on one dimension and other people will be traited on another dimension

It is not necessary that either our view or these other views be false It could be that different people are consistent on different things, but that some people are generally more consistent than others Future research can empirically address the question of global versus trait-specific consistency by investigating whether the same people are traited on all dimensions

Trait Formation and Metatrait Change

Where do metatraits come from? Actually, because the metatrait is the presence versus absence of the associated trait dimension, it exists as soon as there is any conceptual duality with regard to having versus not having the trait dimension The metatrait hypothesis does, however, raise the question of where traits come from

If one rejects the metatrait hypothesis, then trait formation is reduced to a matter of change along a dimension That is, if every person can be classified along every trait dimension, then every psyche must already contain every dimension Every adult psyche always has a certain definite level of chronic social self-esteem, of self-monitoring tendency, of authoritarianism, of introversion/extraversion, and so forth A person may change his or her trait level, but no one can acquire new trait dimensions Using the attitude analogy, it is as if every adult had an opinion on every possible political, religious, ethical, and technical issue imaginable There would be no attitude formation, only attitude change

In contrast, the metatrait hypothesis holds that a certain trait dimension will be present in some personalities and absent from others, which implies that traits may form in untraited individuals (It also raises the

possibility that a trait may cease to exist in a given personality Longitudinal research may explore the disappearance of traits)

Although a comprehensive theory of trait formation is beyond the scope of this article, several brief comments are in order One model for trait acquisition is the learning of habits through reinforcement and punishment That is, behavioral patterns are shaped by environmental contingencies until they become consistent and automatic Another model is the acquisition of emotional patterns through powerful associations (as in classical conditioning), either in impressive single experiences such as severe traumas or (perhaps more commonly) through repeated exposure to affectively potent stimuli such as a threatening authority figure

Some traits are based on beliefs or attitudes, such as self-esteem or Machiavellianism Models of attitude formation (e g , Fazio, Lenn, & Effrein, 1983) may be invoked in these cases

A large class of traits may be created by the internalization of public behavior and expectations Induced public actions may have lasting residual effects on inner traits (e g , Jones, Rhodewalt, Berglas, & Skelton, 1981) People may conform to and then internalize the expectations of others (e g , Baumeister & Cooper, 1981) Additionally, one's reputation may cause others to treat one as if one had certain traits, and such treatment may cause these traits to appear (e g , Darley & Fazio, 1980, Rosenthal & Jacobson, 1968)

Finally, it is worth noting that traits may be conceptualized as constraints or limitations Whereas the untraited person has a broad range of possible actions, the traited person has learned to selectively ignore certain of these options In this view, for example, one becomes shy by discarding the gregarious, loquacious half of one's ontological horizon Acquisition of trait dimensions can thus be seen as the process of learning *not* to act or react in particular types of ways

Measurement of Metatraits

We turn now to the question of how to assess metatraits No perfect or ideal strategy has been identified, so we shall review past approaches and evaluate them

One approach to measuring metatraits (that is, to assessing the likelihood that a given trait will accurately and consistently predict behavior) is to ask subjects to rate their consistency with regard to that trait This approach has been criticized because reliance on a single item lowers the

reliability of psychometric measurement (Bem & Allen, 1974, Rushton, Jackson, & Paunonen, 1981) It may also be criticized because it requires the individual to integrate, evaluate, and synthesize what may be a diverse aggregate of behavioral recollections, while tempted to give the socially desirable answer of high consistency

A second approach, suggested by early work on self-schemata, is to use extremity of self-rating on the dimension Thus, people with extremely high or low ratings are classified as having the trait dimension whereas those with intermediate scores are classified as lacking it This approach systematically confounds trait with metatrait, that is, it confuses the level of the trait with the trait dimension's presence or absence in the personality (Burke et al , 1984, Rushton et al , 1981) True, at the absolute extremes one may be conceptually required to assume the trait is present (Rushton et al , 1981), but such perfect or near-perfect scores are quite rare It is completely unwarranted to assume that intermediate scores indicate the absence of the trait dimension, as argued above

A third approach is to develop new and detailed measures of behavioral consistency on various dimensions (e g , the Cross-Situation Behavior Survey, Bem & Allen, 1974) In principle, this is the best method What could be better than developing new, reliable, and valid measures of the construct? Inconvenience is the principal drawback of this method in practice, for it means that a new instrument must be developed and validated for every trait scale We sought a method that could be used effectively with existing trait scales, perhaps with some modification, without constructing dozens of new scales

A fourth approach is the "ipsatized variance index" used by Bem and Allen (1974) (Bem and Allen used this with the new scale they developed, but in principle it could be used with other scales) This method requires the simultaneous assessment of several traits For each subject, one computes the ratio of interitem variance on the target dimension to the interitem variance on all dimensions Interitem variance represents the subject's tendency to score the same number of points on each question or item in the scale, and it can be understood as a measure of consistency across items Interitem variance can vary independently of trait score (sum of items), although in practice they may be related, a point to which we shall return later

Our principal objection to the ipsatized index is that the ratio's denominator confuses the issue (cf Tellegen, Kamp, & Watson, 1982). Bem and Allen defended the use of this ratio on three grounds It corrects for

an individual's tendency to respond consistently or inconsistently to all items, it reflects a tendency to extract the particular trait dimension (and cluster it) from among other items, and it furnishes an idiographically useful indication of which traits that individual finds most consistent in him or herself The last of these is important for Bem and Allen's purpose of idiographic assessment but not ours, for our interest in nomothetic research is indifferent to the issue of finding which of four traits a subject is most consistent on, even if that consistency is low For our purposes, too, the practice of comparing variance on the target trait dimension to variance on other, irrelevant dimensions is problematic because of the necessary arbitrariness in the choice of the irrelevant dimensions Moreover, there is an artifactual source of substantial, random error in the ipsatized ratio, if interitem variance scores are related to extremity scores (such as a tendency for variances to be lower for extreme scores, see Paunonen & Jackson, 1985) Computing a ratio of variance scores on different traits may confound the relative variability on the different traits with the person's relative level on the different traits, which is intrinsically meaningless because the different traits were chosen to be separate and irrelevant to one another It is possible that this hidden source of random error variance in the ipsative measure has helped account for the discrepancy between Bem and Allen's findings and recent failures to replicate (Chaplin & Goldberg, 1984, see also Amelang & Borkenau, 1985, Cheek, 1982, Mischel & Peake, 1982)

The final technique, which we favor, is to use interitem variance of scale responses on the scale of interest Low variance signifies that the person responded consistently to all the items, indicating that the person is traited on that dimension High variance signifies that the person responded erratically, variably, or inconsistently to the different items, suggesting that he or she is untraited on the dimension measured by the scale Table 1 illustrates the difference

The interitem variance approach has several advantages First, it is a plausible method of assessing traitedness, for consistent responses are one hallmark of being traited It seems reasonably safe to say that traited people in general will respond more consistently to the various items on a trait scale than untraited people will Second, it can be conveniently used with most existing trait scales Its efficacy may depend on the breadth of the response format for the individual items In particular, scales using a true-false response format are unsuited to this approach, for interitem variance will be heavily related to scale total We suggest

Table 1
Hypothetical Illustration of Interitem Variance Method of Assessing Metatraits

	Individual scores on single items	
Scale items	Subject 1	Subject 2
1	5	8
2	5	1
3	5	9
4	6	6
5	5	3
6	5	7
7	5	2
Total trait score	36	36
Interitem variance	0 143	9 810
Conclusion	Traited	Untraited

adapting such scales by replacing the true-false dichotomy with a 10-point format (or 9-point format, if a midpoint is desired), because 10-point scales are highly differentiated, thus allowing for fine gradations of response, because they are easily coded for computer entry, and because the idea of 10-point ratings is more or less familiar in the general population of the United States It is possible that previous evidence of the scale's reliability and validity is rendered inapplicable by converting the item response format, but we doubt that this will be a serious obstacle in practice

When there are subscales, an alternative approach is to use the variance among the subscale scores (converted to standard or percentile scores to make them comparable) instead of item variance (cf Berdie, 1961, Tellegen et al , 1982) This method may be preferable when the trait scale samples several different domains of attitudes and behaviors, particularly when there are more questions on one domain than on another

The use of interitem variance to assess metatraits has two main potential obstacles First, it is plausible that other factors besides traitedness will affect interitem variance Inability to understand certain items, equivalence class discrepancies (Allport, 1937, Bem & Allen, 1974), failure to take the questionnaire seriously, and possibly other things can alter it If these are powerful, the measure must be considered as contam-

inated Future research may want to examine the extent of contamination In particular, evidence that the scale scores of untraited subjects are meaningful would constitute important evidence that interitem variance is a relatively sound, uncontaminated measure of the metatrait In other words, if the scale scores of *untraited* individuals can ever be shown to correlate with fluctuations in states or behaviors, then these scores are measuring something relevant to the construct If so, then the interitem variance itself is not a product of inability to understand the items or a product of capricious, random responding

The second problem, which we regard as potentially more serious, is the possibility that interitem variances are confounded with scale scores The importance of this issue merits a special section (below)

There is some evidence that intra-individual response variability is reliably stable across time (Fiske & Rice, 1955) The reliability of interitem variance on current personality scales deserves to be studied and verified, however

In conclusion, there is no optimal or flawless measurement technique for metatraits The development of new scales to serve as companions to existing trait scales may be the ideal approach in the long run In the short run, the best approach is to use interitem variance on existing trait scales, recognizing this approach's shortcomings

Extremity and Variance

Is interitem variance, as a means of measuring metatraits, seriously confounded by trait scores? Several writers have pointed out that extreme scores on a trait scale can only be achieved with low-variance responding (Rushton et al , 1981) Obviously, to get the highest possible score on a scale, one must get the highest possible score on each item, which means no interitem variance at all Therefore, people with extreme scores may be especially likely to end up classified as "traited" based on the interitem variance method

Two initial responses can be made First, few people obtain such extreme scores that high-variance patterns are impossible Second, it may be conceptually justified to consider extreme scorers as traited on the dimension If so, then some overlap between trait measurement and metatrait measurement can be expected and accepted

Paunonen and Jackson (1985, p 497) suggested that the correlation between score extremity (distance from sample median) and interitem

variance may hover around − 20 Underwood and Moore (1981, p 782) found no correlation (As noted below, we found $r = -17$ for Study 1 and $r = +01$ for Study 2) These results suggest that a small part of the variance is shared between the trait and metatrait measures, which is a genuine confound but perhaps not a serious problem Given the suggestion that extreme scorers should be more likely to be classed as traited, a small overlap seems acceptable

We suggest that the issue of potential confound of score extremity and interitem variance can safely be ignored if one is using metatraits to construct a sample by discarding untraited subjects If one wants to study both traited and untraited subjects, then it is worth statistically checking the extent of the confound This can be done by computing the correlation between extremity and variance, alternatively, one can divide the sample by median or other split into traited and untraited groups and examine the distribution of scale scores in the two groups

If the confound between trait and metatrait measurements is especially problematic, several corrections exist One method (Bem and Allen, 1974) divides the sample into pairs based on proximity of scale scores and then sorts each pair according to interitem variance That is, one begins with the two lowest scores on the trait scale, compares the variances of those two subjects, and puts the higher one in the untraited group and the lower one in the traited group Then one takes the two lowest remaining scores and performs the same comparison, and so forth This method ensures that the traited group will end up with almost exactly the same distribution of trait scores as the untraited group It does, however, introduce considerable randomness into the classification process, insofar as each person's classification depends on whom he/she is paired with, and it also removes any tendency for extreme scorers to show up as traited, which may be misleading

Another correction is to use the intersubscale variance (where applicable) to compensate for the tendency of extreme scores to be classified as traited

Empirical Strategies

There are three possible ways to use metatraits empirically One is to use them to construct a sample. This may be especially useful when large numbers of subjects are available for prescreening, or when large banks of data (such as in major surveys) exist In this approach, one computes

the interitem variances for all subjects and then uses a cutoff to discard untraited subjects Nomothetic hypotheses about traits are best tested on subjects whose interitem variance on the trait scale is low

This practice can be justified by comparing it to the construction of trait scales A basic principle of developing a trait scale is that all items should be intercorrelated, which is usually accomplished by factor analysis Items that do not correlate are discarded from the scale In essence, we advocate constructing research samples in the same way, by discarding *subjects* for whom the items in the scale are not well intercorrelated That is precisely what high interitem variance means—for that subject, the items were not well intercorrelated Indeed, it could be argued that the scale is not a psychometrically sound measure for subjects who respond with high variance

The other ways of using metatraits empirically compare the responses of traited versus untraited subjects There are two possibilities Either the metatrait moderates the effects of the trait, or the metatrait predicts behavior directly, independent of trait We anticipate that moderator effects will be far more common than direct, independent prediction, although the latter may occur (see below)

The main ways of incorporating metatrait measurements as independent variables in an analysis are to use a median (or other cutoff) split or to use regression analyses Psychometricians tend to favor regression and to despise median splits, but many trait researchers use median splits all the time We shall now examine the relative merits of these two approaches The most familiar differences are of course the inherent arbitrariness of the choice of median as cutoff, and the fact that dichotomizing a continuous variable wastes substantial information and lowers the power of the statistical tests These are the principal reasons that psychometricians favor regression analyses, at least whenever reliable measurements on continuous variables exist

One decisive issue is whether a metatrait is a continuum or a dichotomous category variable, for the two analysis strategies differ in how they treat the construct (Kenny, 1985) Based on our analysis above, a metatrait is part category, part continuum Being untraited is a category If you lack a certain trait dimension, you do not have varying degrees of that lack. On the other hand, someone who has the trait can have it with varying degrees of strength and consistency, so there may be degrees of traitedness (It is also plausible that there are several different subcomponents to traitedness, so traitedness may consist of not one but several

continuums) In principle, the ideal measurement strategy would involve a continuous scale with a true zero point Zero would refer to the complete absence of the trait dimension, and one would expect a substantial number of zeros

Still, until such ideal scales are available, researchers may have to remain content with interitem variances Regression analyses are distributed along a continuum but, as we have argued, the proper distribution on a metatrait should be only partly continuous The conclusion is that regression analyses, which assume a continuum, are suited to only the traited part of the sample This could be corrected, however, by doing a median split (or other cut-point) and then using the dichotomous variable as input into a moderated regression analysis A potential advantage of the regression method is that it would first provide the main effect of the moderator (i e , the metatrait)

It seems likely that the population does not divide equally into traited and untraited groups If 75% or 80% of the population is truly traited, then the continuum part of the distribution is bigger, so regression analyses (using the continuous measure) may work well If less than 50% is traited, then the category part predominates, and regression will not work well In short, regression will not work equally well with all metatrait variables

If the traited part of the population deviates substantially from 50%, then a median split will make many classification errors Ideally, researchers developing new trait scales should furnish estimates of what proportion of the population is traited, and that number rather than a median could be used as the cutoff Meanwhile, it seems best to be conservative by setting a low proportion for traitedness If untraitedness is all the same but traitedness is distributed along a continuum, then it is a more severe error to misclassify some truly untraited people as traited than to misclassify the weakest-traited individuals as untraited

Median splits have the advantage that they do not assume that the data have interval properties, an assumption that may cause particular problems for the use of interitem variances in regression analyses We have suggested that the difference in interitem variances between two untraited subjects is meaningless, whereas the difference for two traited subjects may be meaningful Unfortunately, the typical distribution of such variances shows bigger intervals between the high variances than the low ones Thus, the intrinsically meaningless differences among the interitem variances of untraited people will receive greater weight in a

regression analysis than will the presumably meaningful differences among trait ed people At the very least, some correction such as logarithmic or inverse transformations should be used, with appropriate caution regarding their potential effects on measurement error and on the problems resulting from possible confounding of extreme scores with variances

The effects of the 20 correlation between extremity and variance must be considered in their own right With a category approach, this may be a minor problem, resulting in potential misclassification of a few subjects—and as noted above, it may be appropriate to consider extreme scores as more likely trait ed Treating the metatrait as a continuum, however, renders it vulnerable to small errors all along the continuum as a result of the correlation On the other hand, the category errors are radical errors, while the continuum errors are small errors (Again, though, we suggest that misclassifying weakly trait ed individuals as untrait ed is a relatively minor error)

The broader issue here is whether interitem variance is sensitive enough to measure a continuum We have argued that the trait ed part of a metatrait is distributed on a continuum, but this does not guarantee that interitem variance is adequately sensitive to this continuum We can find no a priori rationale for whether to use the interitem variance, the standard deviations, the logarithms of the variances, or indeed a rank ordering of these variances as input variables into a regression analysis, and the lack of such a rationale is disturbing A category approach will yield the same results regardless of which of those versions of the measure is used

In conclusion, we favor the category approach at present, although with some reservations A category approach demands only that the measure be reliable and valid across one dividing point, whereas a continuum approach requires it to be reliable and valid at all points We consider interitem variance adequate for distinguishing relatively trait ed subjects from untrait ed subjects in a normal population, but we are not yet convinced of its adequacy to distinguish effectively between degrees of trait edness

For preliminary work, medians may be suitable as cutoffs, although it is imperative to come up with some other basis for estimating the trait dimension's preponderance in the general population A median split ensures only that most truly trait ed subjects will end up in the trait ed group and most truly untrait ed subjects will end up in the untrait ed group It

seems likely that trait scales currently in use must have a reasonably high prevalence within the population (i e , somewhere above 50%, but perhaps far from 100%), or else researchers would have had difficulty obtaining any significant results without discarding untraited subjects Therefore use of the median may be reasonable as an appropriately conservative starting point

It is important to realize, though, that research may be quite different with trait scales developed in the future, especially if the metatrait hypothesis is supported and put to use. The practice of discarding untraited subjects from research samples may enable researchers to begin to study some trait dimensions that have only a limited prevalence in the general population In the past, research that used a trait dimension that applied to only, say, 20% of the population would have had very little success, for a typical test of a trait hypothesis would be starting off with 80% of the sample contributing just error variance (Attitude researchers have cleverly avoided this problem by always choosing attitudinal issues that are familiar and important to their samples) But metatraits provide a methodological rationale for discarding those irrelevant 80% Although the results of such studies will by definition have limited generality, some may nonetheless be quite important

Interpretation of Results

We assume that the most common pattern of results will be that trait scale scores predict behavior in the traited group but not in the untraited group This pattern of results means that the trait does indeed predict the behavior, but only in individuals for whom the trait dimension is an important and established part of their personality By definition, a trait hypothesis does not apply to untraited individuals, so it cannot be properly tested on them Using metatrait measurement to screen out untraited individuals thus increases both the power and the accuracy of the obtained relationship between the trait construct and the behavior

On an a priori basis it is plausible that the reverse pattern may occur, that is, the scores of untraited individuals may correlate with the behavior but not the scores of traited individuals This pattern would contradict a hypothesis about the trait, but it may hold considerable theoretical interest Scale scores for untraited individuals presumably reflect the frequency of certain states and experiences For example, an untraited person with a high score on self-consciousness (Fenigstein, Scheier, &

Buss, 1975) is someone whose level of self-attention fluctuates but who is prone to frequent experiences of high self-focus (cf Fridhandler, 1986, on states) When a behavior is influenced by familiarity with a particular state or by changes in that state, then the behavior may be predicated by the scores of untraited individuals In addition to the theoretical importance of such results, they would have methodological significance as well, for they would imply that the responses of untraited individuals are not produced by randomness, capriciousness, or ignorance

A last possible pattern of results would consist of direct prediction of behavior by the metatrait, independent of the trait Care should be taken to rule out the possibility that this is a statistical artifact, such as metatrait effects mimicking trait effects because the metatrait is correlated with the trait in that sample If the metatrait does indeed predict the behavior directly and independently, this means that the mere presence of the dimension alone is sufficient to elicit the behavior Being traited on a particular dimension could create interest in certain things, so information seeking (or information avoiding) behaviors may be caused by metatraits Another plausible source of such effects would be when behaviors depend on flexibility The existence of a stable trait may entail a reduced degree of situational flexibility A third plausible source would be situations that are ambiguous and multifaceted or that invoke the trait dimension in several possible ways In such a case, people with high and low levels of the trait may respond similarly, perhaps for different reasons, but their responses will differ from those of untraited persons

We shall now present two studies done to illustrate the usefulness of metatrait measurement The hypothesis for both studies was simply that there would be differences between traited and untraited groups Because these studies are designed to be illustrative more than substantive, and in order to increase the generality of the methodological demonstration, we used different traits and different behaviors Study 1 shows a metatrait moderating the effect of a trait Study 2 illustrates direct prediction of behavior by the metatrait

Study 1

Our first experiment involved locus of control, practice in preparation for a test, and attributions for performance We informed subjects that they were to be tested on a task that depended on internal traits, namely ability (skill) and effort Individuals were allowed to practice as long as they

wanted, it was necessary for the subject to declare him or herself ready for the test The simple trait hypothesis was that internals (i e , people who habitually feel in control of their lives) would be quicker to take the initiative of asking for the test, especially because the task itself allegedly depended on internal factors Externals, in contrast, were predicted to passively postpone the test for a longer period Our particular interest, of course, was in whether these predictions would receive stronger support among traited subjects than among untraited ones

METHOD

Rotter's (1966) Locus of Control scale was administered to 33 students in a psychology class We converted the response format from true-false to 9-point scales in order to facilitate the scoring of interitem variance No items were reworded Two subjects were lost due to failure to complete the questionnaire fully

Subjects made individual appointments for a laboratory experiment Each subject was told by the experimenter that the task involved performance of a skill task and that performance on this task depended on skill and effort more than on luck Subjects were shown how to play a video game that required maneuvering an airplane through a race course while avoiding various obstacles The subject performed the task three times, then was permitted to practice the task for as long as he or she wished in preparation for a final performance To fulfill the cover story, three trials were performed after the practice period The subject then filled out a questionnaire asking for attributions for the causes of performance The major dependent variables were the duration of practice (timed unobtrusively by the experimenter) and the attributional ratings

RESULTS AND DISCUSSION

We computed the interitem variance for each subject on the Locus of Control scale These variances were subjected to a median split Within each group, locus of control scores were then correlated with duration of practice, with attributions to luck or chance, and with attributions to effort (including practice)

The traited and untraited groups were distributed similarly with respect to trait scores For untraited subjects, the standard deviation on locus of control scores was 15 6, and for the traited subjects it was 15 4 This contradicts any possibility that higher correlations in the traited group would be due to restriction of range among the untraited subjects,

caused by a possible tendency for extreme scorers to fall in the traited group The mean score for the traited group was higher (more external) than that for the untraited group, however On duration of practice, the two groups did not differ significantly ($t = 1\ 4$, *ns*), nor did their mean attributional ratings differ significantly (both $ts < 1$, *ns*)

In the untraited group, locus of control trait scores showed a nonsignificant negative correlation with duration of practice, $r = -\ 297$ In the traited group, a significant positive correlation emerged, $r = +\ 502$ The most important result for our purposes was that there was a significant difference between those two correlations, $Z^2 = 4\ 59$, $p = 032$ (Darlington, 1975) Thus, classification by metatrait produced a significant difference in the prediction of behavior from trait scores Had we simply ignored metatraits and computed the trait-behavior correlation across the entire sample, we would have concluded that no relationship existed, $r = +\ 096$, *ns*

These results confirm our predictions Among traited subjects, internals declared themselves ready for the test sooner than externals Untraited subjects showed a nonsignificant trend in the opposite direction Thus, the trait hypothesis was strongly confirmed among traited subjects, but disconfirmed among untraited subjects

Attributions of performance to luck or chance were uncorrelated with trait scores in the untraited group, $r = 06$, but were moderately correlated in the traited group, $r = 497$, which has a marginal level of two-tailed significance for $n = 16$ The difference between the two correlations did not reach significance but is sufficiently large to suggest more use of metatraits with a larger sample The same holds for attributions to effort and practice The correlation between locus of control score and effort was $-\ 41$ for the untraited group, but was $-\ 008$ for the traited group

Finally, we checked the possibility that extreme scores might be more likely to end up in the traited group We computed the distance from the median score for each subject's scale score and correlated these with interitem variances A slight relationship was found, $r = -\ 178$, using standard deviations instead of variances, the relationship was $r = -\ 145$ These results are consistent with Paunonen and Jackson's (1985) estimate of $-\ 21$ for the relationship between extremity and variance

Our purpose in this investigation was not to advance knowledge about locus of control and initiative but to show that use of metatraits can clarify empirical results Without metatraits, the results of Study 1 would

have been misleading and negligible Most importantly, the relation between trait scores and behavior was substantially and significantly different between the traited and untraited groups

Study 2

Greenberg, Pyszczynski, and Solomon (1986) proposed that self-esteem is more involved in public situations than in private ones Their argument implies an interaction between metatrait and publicness Public circumstances would increase the behavioral differences between traited and untraited individuals

We argued that metatraits may have direct effects on seeking versus avoiding information and on behaviors that have several possible relations to the trait Accordingly, we selected the behavior of getting advice as our dependent variable Obtaining advice prior to performing a task is by definition seeking information, it reduces one's potential credit for success insofar as the credit must be shared with the advisor, it likewise reduces one's potential blame or humiliation in case of failure, and it presumably increases one's chances for succeeding Thus, we predicted that self-esteem traited versus untraited individuals would seek different levels of advice in a public situation but would not differ in a private situation

METHOD

Forty-five subjects participated in an experiment entitled "Puzzles " Subjects were scheduled individually and were randomly assigned to either the public or the private condition Upon arrival, the subject first filled out the Fleming and Courtney (1984) revision of the Janis and Field (1959) measure of self-esteem. Subjects were told that the research was concerned with developing new educational software They were told they would be given a series of puzzles to solve Prior to the puzzles, they would have an opportunity to receive up to eight tips on how best to approach and solve these puzzles The experimenter explained that she did not care how many tips the subject chose to see, because she needed data from subjects who received no help, from subjects who received all eight tips, and from every level in between

In the public condition, the experimenter remained in the room with the subject throughout the experiment The subject put his or her name on all materials and entered it into the computer In the private condition, the ex-

perimenter said that absolute confidentiality was necessary, and the subject was instructed not to put his or her name on any materials The computer program in the private condition did not request the subject's name The experimenter said she would leave the room while the subject did the experiment and would be working out in the hallway until the subject came out In both conditions, the experimenter read a book while the subject worked on the computer

The computer program reiterated the experimenter's instructions regarding the puzzles and the advice and then asked the subject to request a quantity of tips between 0 and 8, inclusive After the subject made a response, the screen instructed the subject to consult the experimenter, who then debriefed the subject

RESULTS AND DISCUSSION

Traited and untraited groups were created by a median split on interitem variances on the self-esteem scale Once again, there was no indication that the untraited group suffered from restriction of range due to any tendency for extreme scorers to be classified as traited The standard deviation on scale scores for the traited group was 27 7 and for the untraited group it was 28 1 Indeed, the correlation between interitem variance and distance from the sample median score was very weak, $r = + 007$

To ascertain whether the metatrait moderated trait effects, we computed the correlations between self-esteem scale scores and number of tips requested The four correlations (traited and untraited groups, in the public and private conditions) were all between -2 and -3 and were nonsignificant Across the whole sample combined, the correlation between self-esteem and tips showed a weak tendency for high self-esteem people to request less advice, $r = - 206$, *ns* Thus, the trait itself appears to have had a weak or negligible relation to the behavior, and metatrait analyses did not moderate it In particular, the metatrait did not moderate the relation between self-esteem and advice-seeking in the public condition The correlation bertween self-esteem score and number of tips taken in the public condition was $- 201$ for traited subjects and $- 219$ for untraited subjects

The focus of this study, however, was on direct prediction of behavior by the metatrait Analysis of variance revealed a significant interaction between metatrait and publicness, $F(1, 41) = 4\ 34, p < 05$ In the public condition, untraited subjects requested significantly more advice than traited subjects, post hoc $t(41) = 2\ 37, p < 05$, whereas the corre-

Table 2
Metatrait Self-Esteem and Requesting Advice Study 2

Metatrait	Private	Public
Untrait ed	3 42	4 27
Trait ed	2 91	2 00

Note Numbers represent mean number of tips requested by subject Range is 0 to 8, $n = 11$ in all cells except $n = 12$ for untrait ed/private

sponding difference was negligible in the private condition, $t < 1$, *ns* Table 2 shows the means

An alternative strategy of analysis would be to use the interitem variance as a metatrait coefficient and correlate it directly with the behavior In the private condition, there was only a weak relation between metatrait coefficient and number of tips requested, $r = 183$, *ns* In the public condition, however, there was strong evidence that higher variance on the self-esteem scale predicted greater advice taking, $r = 701$, $p < 001$ (The point-biserial correlation based on the dichotomous metatrait rather than the interitem variance is $r = 537$) The difference between the two correlations is significant, $Z^2 = 4\ 56$, $p < 05$ We note, however, that use of variance as a continuous measure would have reduced significance levels in Study 1, and we remain skeptical of it as a viable measure of metatrait strength, despite the impressive results in this study

The results of Study 2 thus support the Greenberg et al (1986) hypothesis that public situations can involve self-esteem more than private ones Individuals for whom self-esteem was a well-defined, stable trait sought less advice in a public situation than individuals whose self-esteem was not consistent or well-defined In a private situation, the two groups did not differ in the amount of advice they sought

These results may deserve further study by researchers interested in self-esteem or in help-seeking In particular, several conceptual uses of self-esteem, such as "certainty" of self-esteem (e g , Maracek & Mettee, 1972), or attributional bias designed to protect one's self-esteem (e g , Darley & Goethals, 1980), do not rely on the distinction between high and low self-esteem, and metatraits may be an effective way to formulate and test such hypotheses Our purpose, however, was simply to demonstrate that trait ed and untrait ed groups behave differently In this study, metatrait self-esteem interacted with a situational variable to determine behavior, independently of level of trait self-esteem

CONCLUSIONS

We have proposed that metatraits form an important and useful basis for approaching the problems of personality structure and provide a means for improving the accuracy and power of nomothetic tests of trait hypotheses

We presented two experiments In one, the metatrait moderated the effect of the trait on behavior In the other, the metatrait predicted the behavior directly In both studies, the results would have been misleading and negligible without metatrait analyses, but significant and meaningful results were found using metatraits

Considerably more research is needed One avenue would be to study the differences between traited and untraited individuals on several particular dimensions. Untraitedness in particular has been neglected in past personality research What does it mean, for example, to lack a sense of stable, global self-esteem, especially while interacting with other people who have such a sense? Another important issue concerns perceptions of choice and control When behavior is guided by traits, do the traited or the untraited people feel greater internal control? The importance of choice in attitude research has been repeatedly established (e g , Linder, Cooper, & Jones, 1967, also Baumeister & Tice, 1984), and this suggests study of its role in metatraits Another avenue would involve longitudinal study of the formation and disappearance of traits A very important issue is whether a metatrait is a category variable, a continuous variable, or (as we argued) part category and part continuum Finally, of course, the metatrait hypothesis itself needs further verification, including studies with replications

Several methodological comments about metatraits deserve mention First, metatrait effects may be unusually above suspicion with regard to experimenter demand Even a properly blind experimenter may sometimes be able to surmise a subject's trait level but probably not a metatrait level For example, an experimenter may guess how a particular subject responded to questions about feeling nervous in front of others or feeling in control of one's performance, but surmising whether the subject responded with high or low interitem variance to a trait scale seems nearly impossible, at least without prolonged observation in multiple settings

Second, use of interitem variance with category splits seems to be a satisfactory way to proceed for the present It was effective at yielding clear and useful differences between groups, and there did not appear to

be any substantial problem with restriction of range due to a tendency of extreme scores to be classed as traited

Third, metatraits may be especially useful with large sets of survey data, in which not much statistical power is lost by discarding half the sample We hope that metatraits can be used to improve the use of personality variables in survey research

The ideas of Bem and Allen (1974) elicited considerable attention and controversy, unfortunately including some failures to replicate (e g , Chaplin & Goldberg, 1984, see also Amelang & Borkenau, 1985, Cheek, 1982) Our results support the main thrust of their argument that trait dimensions apply to some people more than others We consider it unfortunate that most of the follow-ups to their work focused on the issue of whether personality traits show any cross-situational consistency (cf Mischel, 1968), and we hope that our research may stimulate exploring some of the implications of their work for understanding personality structure, the nature of traits, and individual differences in social behavior

REFERENCES

Allport, G W (1937) *Personality A psychological interpretation* New York Henry Holt

Amelang, M , & Borkenau, P (1985) The trait concept Current theoretical considerations, empirical facts, and implications for personality inventory construction In A Angleitner & J Wiggins (Eds), *Personality assessment via questionnaire Current issues in theory and measurement* (pp 7–34) Heidelberg Springer

Baumeister, R F , & Cooper, J (1981) Can the public expectation of emotion cause that emotion? *Journal of Personality*, **49**, 49–59

Baumeister, R F , & Tice, D M (1984) Role of self-presentation and choice in cognitive dissonance under forced compliance Necessary or sufficient causes? *Journal of Personality and Social Psychology*, **46**, 5–13

Baumeister, R F , & Tice, D M (1985) Toward a theory of situational structure *Environment and Behavior*, **17**, 147–192

Bem, D J , & Allen, A (1974) On predicting some of the people some of the time The search for cross-situational consistencies in behavior *Psychological Review*, **81**, 506–520

Berdie, R F (1961) Intra-individual variability and predictability *Educational and Psychological Measurement*, **21**, 663–676

Burke, P A , Kraut, R E , & Dworkin, R H (1984) Traits, consistency, and self-schemata What do our methods measure? *Journal of Personality and Social Psychology*, **47**, 568–579

Chaplin, W F , & Goldberg, L R (1984) A failure to replicate the Bem and Allen study of individual differences in cross-situational consistency *Journal of Personality and Social Psychology*, **47**, 1074–1090

Cheek, J M (1982) Aggregation, moderator variables, and the validity of personality tests A peer ratings study *Journal of Personality and Social Psychology*, **43**, 1254–1269

Converse, P E (1970) Attitudes and non-attitudes Continuation of a dialogue In E R Tufte (Ed), *The quantitative analysis of social problems* (pp 168–189) Reading, MA Addison-Wesley

Darley, J M , & Fazio, R H (1980) Expectancy confirmation processes arising in the interaction sequence *American Psychologist*, **35**, 867–881

Darley, J M & Goethals, G R (1980) People's analyses of the causes of ability-linked performances In L Berkowitz (Ed), *Advances in experimental social psychology* (Vol 13, pp 1–37) New York Academic Press

Darlington, R B (1975) *Radicals and squares* Ithaca Logan Hill Press

Fazio, R H , Lenn, T M , & Effrein, E A (1983) Spontaneous attitude formation *Social Cognition*, **2**, 217–234

Fazio, R H , Sanbonmatsu, D M , Powell, M C , & Kardes, F R (1986) On the automatic activation of attitudes *Journal of Personality and Social Psychology*, **50**, 229–238

Fenigstein, A , Scheier, M F , & Buss, A H (1975) Public and private self-consciousness Assessment and theory *Journal of Consulting and Clinical Psychology*, **43**, 522–527

Fiske, D W , & Rice, L (1955) Intra-individual response variability *Psychological Bulletin*, **52**, 217–250

Fleming, J S , & Courtney, B E (1984) The dimensionality of self-esteem II Hierarchical facet model for revised measurement scales *Journal of Personality and Social Psychology*, **46**, 404–421

Fridhandler, B M (1986) Conceptual note on state, trait, and the state-trait distinction *Journal of Personality and Social Psychology*, **50**, 169–174

Freud, S (1953) The interpretation of dreams In J Strachey (Ed and Trans), *The standard edition of the complete psychological works of Sigmund Freud* (Vols 4 & 5) London Hogarth Press (Original work published 1900)

Greenberg, J , Pyszczynski, T , & Solomon, S (1986) The causes and consequences of a need for self-esteem A terror management theory In R Baumeister (Ed), *Public self and private self* (pp 189–212) New York Springer-Verlag

Hovland, C I (1959) Reconciling conflicting results derived from experimental and survey studies of attitude change *American Psychologist*, **14**, 8–17

Janis, I L , & Field, P (1959) Sex differences and personality factors related to persuasibility In C Hovland and I Janis (Eds), *Personality and persuasibility* (pp 55–68) New Haven Yale University Press

Jones, E E , Rhodewalt, F T , Berglas, S C , & Skelton, A (1981) Effects of strategic self-presentation on subsequent self-esteem *Journal of Personality and Social Psychology*, **41**, 407–421

Kenny, D A (1985) Quantitative techniques of interest to social psychologists In G Lindzey & E Aronson (Eds), *Handbook of social psychology* (3rd Ed , Vol 1, pp 487–508) New York Random House

Kenrick, D T , & Stringfield, D O (1980) Personality traits and the eye of the beholder Crossing some traditional philosophical boundaries in the search for consistency in all of the people *Psychological Review*, **87**, 88–104

Linder, D E , Cooper, J , & Jones, E E (1967) Decision freedom as a determinant of the role of incentive magnitude in attitude change *Journal of Personality and Social Psychology*, **6**, 245–254

Maracek, J , & Mettee, D R (1972) Avoidance of continued success as a function of self-esteem, level of esteem certainty, and responsibility for success *Journal of Personality and Social Psychology*, **22**, 98–107

Markus, H (1977) Self-schemata and processing information about the self *Journal of Personality and Social Psychology*, **35**, 63–78

Mischel, W (1968) *Personality and assessment* New York Wiley

Mischel, W , & Peake, P K (1982) Beyond déjà vu in the search for cross-situational consistency *Psychological Review*, **89**, 730–755

Paunonen, S V , & Jackson, D N (1985) Idiographic measurement strategies for personality and prediction Some unredeemed promissory notes *Psychological Review*, **92**, 486–511

Rosenthal, R , & Jacobson, L (1968) *Pygmalion in the classroom* New York Holt, Rinehart & Winston

Rotter, J B (1966) Generalized expectancies for internal versus external control of reinforcements *Psychological Monographs*, **80** (1, Whole No 609)

Rushton, J P , Jackson, D N , & Paunonen, S V (1981) Personality Nomothetic or idiographic? A response to Kenrick and Stringfield *Psychological Review*, **88**, 582–589

Scheier, M F , Buss, A H , & Buss, D M (1978) Self-consciousness, self-report of aggressiveness, and aggression *Journal of Research in Personality*, **12**, 133–140

Sherman, S J , & Fazio, R H (1983) Parallels between attitudes and traits as predictors of behavior *Journal of Personality*, **51**, 308–345

Snyder, M , & Monson T C (1975) Persons, situations, and the control of social behavior *Journal of Personality and Social Psychology*, **32**, 637–644

Tellegen, A , Kamp, J , & Watson, D (1982) Recognizing individual differences in predictive structure *Psychological Review*, **89**, 95–105

Underwood, B , & Moore, B S (1981) Sources of behavioral consistency *Journal of Personality and Social Psychology*, **40**, 780–795

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