

The act frequency analysis of interpersonal dispositions: Aloofness, gregariousness, dominance and submissiveness¹

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Abstract

A series of studies explores the act frequency analysis of personal dispositions, which entails the identification of categories of prototypical acts, delineation of internal structuring within act categories (from central to peripheral), and the assessment of individuals' dispositions in terms of the relative frequency of performing prototypical acts over a period of observation. These studies were designed to replicate the research of Buss and Craik (1980) on dominance. Through nomination procedures, 100 acts were assembled for each of three dispositions: aloofness, gregariousness, and submissiveness. The internal structure of these categories was examined through judgments of the degree to which each act is a prototypical member of the category. Prototypicality judgments for each act category by three independent panels display a substantial degree of composite reliability. Multiple-act criteria based on highly prototypical acts are predicted with significantly greater success by relevant personality scales than are multiple-act criteria based on more peripheral acts within each category. This finding holds for dominance, replicating the Buss and Craik study, and for aloofness and gregariousness. The multiple-act criteria for submissiveness, however, are not well predicted by matching personality scales. This anomaly is discussed in terms of the bipolarity of behavioral domains, the selection of matching personality scales for specific act categories, and the appropriate conceptualization of submissiveness.

Although the concept of disposition is central to personality psychology, relatively little effort has been devoted to clarifying the

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behavioral domains presumably subsumed by various dispositional constructs. What does it mean when we say that Mary is dominant, gregarious, or manipulative? What behaviors does she perform that lead an observer to rate her high or low on these dimensions? One type of dispositional construct, the hypothetical proposition (Ryle, 1949) invokes situational contingencies analogous to dispositional statements in physics (e.g., "the glass is brittle"), meaning that under certain specifiable circumstances, the entity will respond in predictable ways (e.g., when struck by a sharp stone, the glass will shatter). From this perspective, the dispositional statement "Mary is gregarious" means that situations with specifiable properties will elicit certain behaviors (e.g., talking, smiling, laughing) that are manifestations of her gregarious disposition. One implication is that Mary might never encounter these situations, and so will not display her gregariousness. Alternatively, the frequency concept of disposition (Alston, 1975; Buss & Craik, 1980; Craik, 1976; Hampshire, 1953; Wiggins, Note 1) focuses on specifying the relative incidence of acts within a circumscribed category or domain. From a frequency perspective, the statement "Mary is gregarious" means that, over a period of observation, she will display a high frequency of gregarious acts, relative to the norm for that category of acts. Acts within a given category may be topographically dissimilar, but are still considered to be manifestations of a given disposition. To say that Mary is gregarious one must be able to marshal evidence of her manifestations drawn from the gregarious domain over a period of observation.

The frequency concept of disposition thus entails acts or behaviors as the basic units of analysis, and focuses on specifying the nature of the categories that encompass these acts. Recent work in cognitive psychology conceptualizes categories as "fuzzy sets" (Zadeh et al., 1975) in that category boundaries are not sharply demarcated and one category blends into adjacent categories. In this view, category membership is continuous rather than discrete. Thus, not all members of a given category possess equal status within that category. Rosch and her colleagues (Rosch, 1975a, 1975b, 1978; Rosch & Mervis, 1975; Rosch, Simpson, & Miller, 1976) have conceptualized the differing status of category members in terms of the notion of *prototypicality* (clearest cases, best examples, instances par excellence). Thus, categories may be cognitively structured around prototype or central members, with the nonprototype members of the category becoming progressively more peripheral to the category. At the borders of adjacent categories, the acts share membership and constitute a transition zone.

Applying these notions to personality theory, dispositional concepts like "gregariousness" may be viewed as categories, with acts as category members. Some acts are prototypically gregarious, while other acts, although still within the category of gregariousness, are to a greater or lesser extent more peripheral members of the category. Conjoining the frequency concept of disposition with the conceptualization of categories as fuzzy sets oriented around prototype members generates a new program of personality research: to examine the nature of dispositional categories, to establish criteria for act membership in these categories, to specify the internal structure of the categories, to predict multiple-act criteria based on the category structure, and to explore the structure and interrelationships among act categories.

Buss and Craik (1980) tested these notions with a series of studies on dominance, a disposition frequently assessed in personality research (Butt & Fiske, 1968, 1969). One hundred different acts presumably belonging to the category of dominance were generated through a nomination procedure. These acts were subsequently rated by expert and student panels on how dominant each act is, defined in terms of centrality of membership in the category of dominant acts. In this manner, an internal structure of the act category was specified such that some acts are more prototypically dominant while others are more peripheral members. They found adequate reliability for both panels and substantial agreement between the panels. On the basis of these prototypicality ratings, a series of multiple-act criteria was generated, each successive cluster of acts arranged on a gradient from most to least prototypically dominant. A third study explored how well these multiple-act criteria could be predicted from dominance scales widely in use. The multiple-act criteria were based upon the self-reported performance of the dominant acts composing an Act Report. A gradient of validity coefficients was found to be associated with the multiple-act criteria such that the most prototypically dominant cluster of acts was best predicted, with the coefficients tending to decrease as the prototypicality of the criteria decreased. These studies lend support to the notion that dispositions function as structured natural categories. In addition, these studies suggest a relatively direct means by which we can clarify the behavioral domains subsumed by various dispositional constructs.

The present strategy can be contrasted with the recent work of Cantor and Mischel (1977, 1979a, 1979b) and Neisser (1979), which is guided by a similar cognitive perspective. Their studies have focused upon the nature of person categories (e.g., extraverts, in-

telligent persons, good Samaritans) and such topics as optimal levels of abstraction in hierarchical taxonomies (e.g., from claustrophobic to phobic to emotionally unstable persons). In their procedure, prototypicality judgments are made of individuals with regard to person typologies. In the present method, prototypicality judgments are made of acts with regard to dispositional categories, in an effort to advance general understanding of these central constructs of personality theory.

But perhaps not all dispositions have a readily specifiable act domain. Although it may be relatively easy to specify the acts that are viewed as dominant (e.g., "he assigned roles and got the game going;" "she decided which TV programs they would watch"), other dispositions may elude such clear-cut act specification. The disposition toward aloofness, for example, appears to represent a serious challenge to the frequency concept. It could be argued that aloofness may be specified not so much by the acts performed, but rather by acts not performed and by subtle forms of nonverbal communication.

The present series of studies was designed to replicate and extend the findings of Buss and Craik (1980). Four dispositions were chosen for study. The first, dominance, serves as an exact replication of the previous research. The second disposition, aloofness, was chosen because it appears to represent a serious challenge to the act frequency concept of personal dispositions. Selection of the remaining two dispositional categories was guided by a circumplex model of the interpersonal domain (Wiggins, 1979); submissiveness represents the opposing pole of the dominance axis, and gregariousness, the polar opposite of aloofness.

Act nominations are used as a preliminary criterion for act membership in each dispositional category. Judgments of prototypicality serve to give internal structure to each category of acts. The hypotheses follow directly from the conceptual framework previously elaborated. It was hypothesized that multiple-act criteria based on self-reports of the frequency of the most prototypical acts would be predicted by the relevant personality scales with greater success than multiple-act criteria based on more peripheral members of each category. A gradient of validity coefficients was hypothesized to be associated with multiple-act criteria as they progressively move toward the periphery of each structured category. It was also anticipated that evidence to support the bipolarity of dominance-submissiveness and aloofness-gregariousness would be offered by the analysis of act reports.

Preliminary Studies: The Act Nominations

Method

Subjects

Two samples of subjects participated in the preliminary studies. The first consisted of 88 undergraduates (37 males and 51 females) who completed the act nominations of gregariousness and aloofness as part of an extra-credit assignment for a class in psychology. The second sample consisted of 37 undergraduates (18 males and 19 females) who received experimental credit for act nominations for the category of submissiveness.

Procedure

Each participant received a sheet with standard instructions, the basic form of which read: "Think of the three most aloof [gregarious, submissive] females you know. With these individuals in mind, write down five acts or behaviors they have performed that reflect or exemplify their aloofness [gregariousness; submissiveness]." Five lines were provided upon which the act nominations could be written. The instructions were then repeated, altering the sex of the actor to male (e.g., "Think of the three most aloof males you know . . .").

Results

The lists of aloof, gregarious, and submissive acts generated in this way were subsequently reduced by eliminating redundancies, "non-act" statements (e.g., adjectives), general tendency statements (e.g., "she tends to avoid parties"), and statements considered too vague to constitute an observable act. The final lists were examined for grammatical errors which were then corrected.

Although 100 acts each in the categories of gregariousness and submissiveness were easily obtained, the list of aloof acts remained at 89 after the reduction procedures. Therefore, an additional panel of 8 personality psychologists was asked to supplement the list of aloof acts. This expert panel received the identical instructions for act nomination as the undergraduate panels. In this way, 11 acts nominated by the expert panel as aloof were selected to supplement the 89 acts nominated by the undergraduate panel.

The acts were then prepared for subsequent studies, closely following the procedures reported by Buss and Craik (1980) for the dominant acts. First, each act was phrased in a way suitable for performance by either sex. For example, the act "he pushed his chair back from the table further than the others" could also be performed by a female ("she pushed her chair . . ."). Thus, for the second phase of the study, six lists of acts were produced for the categories of aloof, gregarious, and submissive: three containing a

Table 1. Alpha reliability coefficients.

	Male raters		Female raters		Total	
Aloof acts						
Male actor	.94	(23)	.94	(22)	.97	(45)
Female actor	.94		.94		.97	
Gregarious acts						
Male actor	.91	(21)	.92	(21)	.95	(42)
Female actor	.91		.90		.95	
Submissive acts						
Male actor	.93	(26)	.88	(21)	.95	(47)
Female actor	.94		.88		.96	

Note.—Sample *N* in parentheses.

male (he) as actor and three containing a female (she) as actor. A few acts had to be modified slightly to fit the appropriateness of the sex of the actor. For example, the act "he joined a fraternity" became "she joined a sorority" on the list with female actors. In all other respects, the lists were identical.

For the third phrase of the study, each act was transformed from the third person singular to the first person singular (e.g., "she threw a surprise party for her friend" became "I threw a surprise party for my friend"). These lists of acts then formed three separate Act Reports, supplementing the Dominance Act Report from the Buss and Craik study.

Study 1: Prototypicality Ratings

Method

Subjects

Three separate samples were used for Study 1, none of whom had participated in the preliminary studies. Forty-five subjects (23 males and 22 females) rated the aloof acts, 42 subjects (21 males and 21 females) rated the gregarious acts, and 47 (26 males and 21 females) rated the submissive acts. To insure independence, none of the subjects rated more than one category of acts.

Prototypicality ratings

Each participant rated 200 acts (100 with male as actor and 100 with female as actor) on the extent to which each is prototypically aloof (submissive, gregarious). The order in which they rated the male-actor acts and the female-actor acts was counterbalanced, so that approximately half of the male and half of the female raters received the male-actor list first,

Table 2. Aloof acts: Most prototypical.

M male actor	M female actor	Acts
5.89	6.09	He (she) displayed no emotion when meeting the long lost friend at the airport.
5.82	5.73	He (she) hid in the bedroom when the others came over to visit.
5.69	5.76	When spoken to, he (she) seemed to feign not hearing and walked quickly away in the other direction.
5.58	5.47	He (she) told a friend he (she) had no time for her.
5.33	5.04	He (she) avoided her (his) love-struck gaze and walked with his (her) nose in the air.
5.24	5.47	He (she) ignored the acquaintance who passed him (her) on the street.
5.18	4.78	He (she) continued to read a book amidst a group of people.
5.13	4.89	He (she) socialized very little at the family reunion.

while the other half of the sample rated the female-actor list first. The instructions, adapted from Rosch and Mervis (1975) were the same as those used by Buss and Craik (1980), with substitution of the appropriate category label.

Results

Reliability of the prototypicality judgments. Table 1 presents the alpha reliability coefficients (Cronbach, 1951) for the prototypicality ratings of the aloof, gregarious, and submissive acts, separately for the male and female raters and for the sex of the actor. All are uniformly high, indicating that each rating panel displays adequate composite reliability in judging which acts are prototypically aloof, gregarious, or submissive.

Prototypically aloof, gregarious, and submissive acts. Tables 2, 3, and 4 present the 8 acts rated as most prototypically aloof, gregarious, and submissive, respectively, along with their mean prototypicality ratings. In the aloof list, some acts clearly entail refraining from normative interpersonal behavior. Thus, the act "he (she) ignored the acquaintance who passed him (her) on the street" may be viewed as the absence of a greeting response. However, many of the aloof acts contain an active quality. The acts "he hid in the bedroom . . .," "she told a friend she had no time for her," and "she continued reading a book amidst a group of people" suggest

Table 3. Gregarious acts: Most prototypical.

<i>M</i> male actor	<i>M</i> female actor	Acts
5.79	6.02	He (she) took the initiative when meeting neighbors for the first time.
5.76	6.05	He (she) introduced him/herself to new co-workers without hesitation.
5.67	5.76	He (she) made him/herself prominent as the "life of the party."
5.50	5.50	He (she) spent a little time with everyone at the party, rather than staying with a single person.
5.48	5.55	He (she) threw a surprise party for a friend.
5.43	5.57	He (she) made people in a crowded elevator laugh and smile.
5.29	5.31	He (she) chatted with strangers at the bus stop.
5.26	5.26	He (she) introduced him/herself to the new neighbors.

that aloofness entails a distinctive domain, containing acts of commission as well as omission. The most prototypically gregarious acts suggest the active interpersonal initiation usually associated with behavior in this domain: chatting with strangers, starting conversations, throwing parties, hugging friends, and so on.

The prototypically submissive acts are interesting because they also seem to imply more than simply the absence of dominant behavior. Acts such as not complaining when overcharged at the store, accepting an unfair grade without questioning it, and smoking marijuana when not wanting to, seem to indicate a degree of masochism that carries beyond simply yielding to individual or group pressure. These findings support Wiggin's (1979) placement of masochism from the Leary (1957) system of interpersonal variables at the submissive pole of the dominance-submissiveness axis of the circumplex model.

Study 2: Predictors and the Multiple-Act Criteria

Method

Subjects

One-hundred and forty-seven undergraduates (82 females and 65 males) participated in Study 2. None had participated in either the preliminary studies or Study 1. Subjects received experimental credit and individual personality feedback in return for their participation.

Table 4. Submissive acts: Most prototypical.

M male actor	M female actor	Acts
5.85	6.02	He (she) accepted an unfair grade without questioning it.
5.77	5.81	He (she) agreed he (she) was wrong, even though he (she) wasn't.
5.79	5.69	He (she) did not complain when someone used his (her) car without his (her) permission.
5.29	5.75	He (she) did not complain when he (she) was overcharged at the store.
5.58	5.48	He (she) smoked marijuana when everyone else did even though he (she) didn't want to.
5.44	5.48	He (she) walked out of the store knowing that he (she) had been shortchanged.
5.21	5.48	He (she) allowed his (her) lover to bring another date home.
5.33	5.27	He (she) let his (her) roommate play the stereo when he (she) was trying to study.

Materials

Relevant personality scales were selected to match the act categories generated from the previous studies. Selection was based on the surface correspondence between act category and scale construct and the assumption of bipolarity for aloofness-gregariousness and dominance-submissiveness. The Dominance Scale from the California Psychological Inventory (CPI; Gough, 1957) and the Dominance Scale from the Jackson Personality Research Form-E (PRF-E; Jackson, 1967), were matched with the Dominance Act Report (Buss & Craik, 1980) and the Submissiveness Act Report. The Sociability Scale from the CPI and the Affiliation Scale from the PRF-E were matched with the Gregarious Act Report and the Aloof Act Report. Other selected measures for companion studies were also included (e.g., Buss, 1981a). It should be noted that the four act reports were labeled Act Report A, B, C, and D, and not explicitly identified by the disposition being assessed. For each act report (three derived from the present preliminary studies, and one from Buss & Craik, 1980), participants were asked to check "yes" or "no" according to whether or not they had ever performed each act. This is a dichotomous rather than frequency (e.g., "rarely" to "often") rating, but bear in mind that the act frequency approach analyzes *diverse* acts that count equally as instances of the same dispositional category. While not central to the approach, the repetition of *specific* acts offers the basis for a weighting system, which will be explored across several dispositions in subsequent reports.

Procedure

Data gathering occurred in three separate sessions, each separated by approximately a one-week interval. A week was allowed between each of the three sessions in order to minimize the operation of response sets. In the first session, participants were administered the personality scales. In the second session, subjects completed Act Report A (aloof acts) and Act Report C (dominant acts). In the third session, subjects completed Act Report B (gregarious acts) and Act Report D (submissive acts).

Results

Single Act \times Scale correlations. The "yes-no" dichotomy of act performance was correlated with each of the personality scales. The average correlations (calculated via Fisher's z transformation) for the CPI and PRF-E dominance scales are .13 and .09 for the dominant acts, and $-.01$ and $-.06$ for the submissive acts. For the CPI Sociability and PRF-E Affiliation scales, the mean correlations are .12 and .12 for the gregarious acts, and $-.07$ and $-.08$ for the aloof acts. Thus, the average Act \times Scale correlations are uniformly low, indicating that most single acts are not very well predicted by personality scales, a result frequently found with the prediction of single acts (Jaccard, 1974; Fishbein & Ajzen, 1974; Buss & Craik, 1980).

Multiple-act criteria. Within each category, acts were ranked on the basis of their independently generated prototypicality ratings (see Study 1). Within each category, this ranked list was then partitioned into quartiles, each successive 25 acts forming an independently composited multiple-act criterion. These composites are subsequently referred to as Aloof1, Aloof2, Aloof3, and Aloof4 (for the aloof acts); Greg1, Greg2, Greg3, and Greg4 (for the gregarious acts); Sub1, Sub2, Sub3, and Sub4 (for the submissive acts); and Dom1, Dom2, Dom3, and Dom4 (for the dominant acts). The first composite within each category of acts represents the most prototypical acts of that category, and the fourth composite represents the least prototypical acts. The second and third composites of each category represent the acts of intermediate prototypicality.

Predictors and the multiple-act criteria. For each subject, 16 composite scores were generated which represent the number of acts reportedly performed within each of the 16 multiple-act criteria. The predictor personality scales were then correlated with these criterion scores. Table 5 presents these results for the multiple-act criteria based on aloof acts and on gregarious acts; Table 6 shows the results based on dominant acts and on submissive acts. Results are presented for the sexes separately, as well as for the

Table 5. Predictors and multiple-act criteria: Aloof and gregarious.

	Aloof1	Aloof2	Aloof3	Aloof4	<i>t</i> ratio
CPI Sociability					
Males (<i>N</i> = 63)	-.37***	-.26*	-.24*	.05	-3.58***
Females (<i>N</i> = 81)	-.37***	-.31**	-.11	-.03	-3.03**
Total (<i>N</i> = 144)	-.36***	-.28***	-.16*	.02	-4.73***
PRF-E Affiliation					
Males (<i>N</i> = 63)	-.36**	-.19	-.23*	-.06	-2.47*
Females (<i>N</i> = 81)	-.45***	-.35***	-.19*	-.04	-3.83***
Total (<i>N</i> = 144)	-.39***	-.27***	-.20**	-.03	-4.50***
	Greg1	Greg2	Greg3	Greg4	<i>t</i> ratio
CPI Sociability					
Males (<i>N</i> = 63)	.44***	.42***	.31**	.12	2.57*
Females (<i>N</i> = 79)	.37***	.35***	.24*	.10	2.58*
Total (<i>N</i> = 142)	.42***	.39***	.29***	.11	3.90***
PRF-E Affiliation					
Males (<i>N</i> = 63)	.45***	.39***	.36**	.07	3.09**
Females (<i>N</i> = 79)	.37***	.29**	.18	.15	2.09*
Total (<i>N</i> = 142)	.43***	.35***	.29***	.12	3.91***

Note.—*t*-ratios reflect the difference between the correlations with the first and fourth multiple-act criteria.

*** $p < .001$.

** $p < .01$.

* $p < .05$.

total sample. In the conceptual framework elaborated earlier, it was hypothesized that each category of acts contains an internal structure such that individual acts differ with respect to prototypicality of membership. It was further hypothesized that performance of acts central to each category (i.e., most prototypically aloof, gregarious, dominant, or submissive) would be predicted with greater accuracy by the relevant scales than would more peripheral members of each category (acts rated low on prototypicality). A more stringent prediction was that a linear gradient of validity coefficients would be associated with the independently judged prototypicality of the acts.

Inspection of the rows of Table 5 for the category of aloof acts shows that for males, females, and the total sample, for both predictor scales, the correlations decrease progressively in magnitude as the prototypicality of the criteria decreases. The difference between the correlations for the most central and most peripheral category is significant beyond the .001 level for most cases.

Table 6. Predictors and multiple-act criteria: Dominance and submission.

	Dom1	Dom2	Dom3	Dom4	t ratio
CPI Dominance					
Males (N = 62)	.52***	.39***	.43***	.21	3.58***
Females (N = 78)	.46***	.20*	.31**	.01	4.76***
Total (N = 140)	.49***	.31***	.39***	.12	5.82***
PRF-E Dominance					
Males (N = 62)	.50***	.33**	.35**	.12	4.49***
Females (N = 78)	.35**	.10	.17	-.11	4.73***
Total (N = 140)	.40***	.19*	.23**	-.02	6.52***
	Sub1	Sub2	Sub3	Sub4	t ratio
CPI Dominance					
Males (N = 59)	-.13	.07	.07	.23*	-3.35**
Females (N = 76)	-.14	-.24*	-.12	-.03	-1.17 ^{ns}
Total (N = 135)	-.14	-.09	-.01	.10	-3.25**
PRF-E Dominance					
Males (N = 59)	-.19	-.03	-.03	.10	-2.61*
Females (N = 76)	-.31**	-.29**	-.30**	-.18	-1.44 ^{ns}
Total (N = 135)	-.24**	-.18	-.19	-.08	-2.15*

Note.—t-ratios reflect the differences between the correlations with the first and fourth multiple-act criteria.

*** $p < .001$.

** $p < .01$.

* $p < .05$.

The confirmation of our hypotheses is particularly noteworthy in that the category is aloofness. This category was anticipated to be a stringent test of the act frequency approach in that aloof behavior might prove to be best construed only as the absence of gregarious acts.

Inspection of the rows of Table 5 for the category of gregarious acts reveals a similar pattern. Without exception, for both predictor scales, and for males, females, and the total sample, the correlations progressively decrease in magnitude as the prototypicality of the multiple-act criteria decreases. The difference between the correlations for the most central and most peripheral criteria is significant in all cases ($p < .001$ for the total sample; $p < .05$ for the males and females separately). The validity coefficients associated with the gregarious multiple-act criteria are slightly higher than those associated with the aloof criteria, but not significantly so.

Table 6 presents in part an exact replication of the Buss and

Craik (1980) study of dominance. As found with the aloof and gregarious multiple-act criteria, the differences between the correlations with the most prototypically dominant criteria and the most peripherally dominant criteria are significant in all cases for both predictor scales ($p < .001$). The second and third criteria show a slight reversal from the predicted gradient, an anomaly also found by Buss and Craik, but only for the females in their study. By and large, the present results replicate well those reported by Buss and Craik (1980).

Inspection of the predictions of the submissive multiple-act criteria in Table 6 shows a striking contrast to the findings seen in the previous three tables. From the CPI Dominance Scale, the magnitudes of the correlation coefficients are so low that only two criteria are predicted at the .05 significance level. Although the gradient of coefficients is generally in the predicted direction, it remains largely uninterpretable because only two correlations differ significantly from zero. From the PRF-E Dominance Scale, the correlations with the first several criteria reach significance only for females. However, the difference between the correlations based on first and fourth multiple-act criteria is not significant.

In sum, the results strongly support the predictions advanced for the categories of aloofness, gregariousness, and dominance: multiple-act criteria based upon the most prototypical acts within each category are predicted by relevant scales with greater success than are composites based on acts more peripheral to the category. In addition, a linear gradient of validity coefficients is found to be associated with previously judged prototypicality, with minor anomalies occurring between the second and third multiple-act criteria for dominance. The multiple-act criteria based on submissive acts are not well predicted by the CPI and PRF dominance scales.

Discussion

The act frequency analysis of personal dispositions entails establishing criteria for specifying the appropriate act category and selecting relevant personality measures to predict multiple-act criteria. The present studies used act nominations as a preliminary criterion for category membership, and used prototypicality ratings to give internal structure to these "fuzzy sets." The results replicate and extend the Buss and Craik (1980) studies of dominance by showing that reliable judgments of the prototypicality of acts can be made, even among sets of acts previously and independently nominated as being within a given category.

Dispositional constructs are treated theoretically in this approach

as sociocultural products held by members of a culture. Panels offer a means of seeking act specification of dispositional constructs, with individual misinterpretations, transient errors and so forth, canceling each other out. Thus, composite ratings are used in all analyses and indices of composite reliability are appropriate. The obtained panel reliabilities reach sufficient levels (ranging from $+ .88$ to $+ .94$) to pursue the research program in a reasonable fashion (e.g., with panels of 20 or fewer members).

A related but distinct issue is whether the application of Rosch's concept of natural cognitive category to a judgment domain requires some minimal level of between-rater agreement. For ten categories (e.g., birds, fruit, vehicle, vegetable, weapon, clothing), Rosch (1975b) reports split-half reliabilities of $+ .97$ or higher for a panel of 209, but does not report average between-rater agreement. Based upon the average between-rater agreement for dispositional categories (i.e., $+ .42$ for aloofness, $+ .20$ for dominance, $+ .31$ for gregariousness, $+ .36$ for submissiveness), estimated reliabilities for panels of 209 would be $+ .99$, $+ .98$, $+ .99$, and $+ .99$, respectively (calculated via the Spearman-Brown formula). While these composite reliability estimates are comparable to those reported for nondispositional domains, the average between-rater agreement might still be higher in the Rosch study. In both studies, the single set of prototypicality ratings yields a conservative estimate of between-rater agreement; ideally, repeated ratings should be obtained to provide a stable estimate of each respondent's construct and then composited for use in calculating average between-rater agreement. While not offering an obstacle to the present research program, this issue warrants further examination in its own right.

Employing these structured categories based upon composite prototypicality ratings, the present studies found a gradient of validity coefficients associated with the judged prototypicality of the acts. This gradient replicates the Buss and Craik study for the concept of dominance and further extends it to the dispositions of aloofness and gregariousness, indicating that the conceptual framework possesses considerable generality across dispositional constructs.

The generalizability of the act frequency analysis is particularly noteworthy in its extension to the disposition of aloofness. While personality assessment has tended to focus on the gregarious end of the gregarious-alooof dimension, the present study represents a first attempt to identify the acts that manifest aloofness. Results

suggest that, far from being a "non-act" category, aloofness embodies a distinctive act domain. Further, this act domain can be specified, internally structured, and predicted from extant measures of gregariousness in the same manner as other, seemingly more obviously and overt domains.

The act frequency approach generates an alternative to traditional approaches to the analysis of personality. Through the variables of the California Psychological Inventory, Gough (1957, 1968) has sought to scale folk concepts of personality, and links these measures (S-data) to significant life outcomes (L-data) and to observer descriptions and evaluations (R-data). Similarly, recent research has shown that various personality dispositions, assessed through T-data (derived from laboratory test situations) correlate strongly with observer evaluations (e.g., Block, 1977; Block & Block, 1980; Buss, 1981b; Buss, Block, & Block, 1980). The act frequency approach can clarify these linkages by delineating the domain of everyday behaviors subsumed by dispositional constructs assessed through S, R, and T measures.

As an illustration of this type of linkage, consider the substantial empirical relationship between activity level as assessed by a mechanical recording device (indexing motoric movement) and observer ratings of activity level made by nursery school teachers (Buss, Block, & Block, 1980). What produces this correspondence? An act frequency analysis might find that the performance of acts such as "he ran around the room" and "he climbed a tree" provides the basis for elevated scores on the mechanical device and also specifies the domain of acts from which observers draw inferences about children's activity level. Taking a second example, several studies have now identified dominance as a modal attribute of political leaders (Costantini & Craik, 1980). Yet until the domain of acts captured by this dispositional construct is specified, the functional relation between the personality characteristic (assessed by S-data) and status within the political party structure (L-data) will not be fully examined and understood. As these two examples illustrate, an act frequency analysis is necessary to clarify the nature of correspondences observed among S, T, L, and R data.

The present results leave several questions unanswered. Predictions of the submissive multiple-act criteria from dominance scales yielded an unanticipated anomaly. For the CPI, only one correlation was significant. For the PRF-E, the correlations were significant only for females, and generally failed to show the gradient of coefficients found with the prediction of the aloof, gregarious, and

dominant multiple-act criteria. This finding raises an interesting set of issues concerning the conceptualization and assessment of submissiveness.

First is the issue of bipolarity. The present results indicate that aloofness and gregariousness may be construed as bipolar: the same scales (CPI Sociability and PRF-E Affiliation) successfully predict behavior within both categories, with the appropriate patterns of positive and negative correlations. However, dominance and submissiveness may not be properly conceptualized as polar opposites, as is generally done. If they are not bipolar, then no single personality scale can be expected to predict behavior equally well within both categories. The interpretation that dominance and submissiveness are not bipolar, although speculative and perhaps counterintuitive, is given support in a recent study by Russell (1979), who examined the bipolarity of dimensions of affective space. Although most dimensions (e.g., pleasure-displeasure; arousal-sleepiness) yielded a bipolar solution, the factors of dominance and submissiveness did not. If dominance and submissiveness are not polar opposites, it also follows that new scales will have to be discovered or developed to predict submissive behavior.

The mystery of submissiveness raises an additional issue: How to select relevant scales for use in predicting various multiple-act criteria. The present studies selected matching scales based upon surface correspondence between act category and scale construct. For example, the PRF-E Affiliation and CPI Sociability scales appeared suitable for measuring gregarious behavior. Similarly, it was anticipated that the dominance scales, although designed primarily to predict dominant acts, would forecast acts within the submissiveness category as well. This expectation proved incorrect, indicating that the selection of relevant scales may not be a straightforward or simple matter, and that attention must turn more directly to the task of developing specific scales for the domain of submissive acts. The ingredients of masochism, abasement, and deference that can be detected in prototypically submissive acts may provide useful clues. The process itself highlights the potential utility of the act frequency approach in mutually illuminating the nature of personality scales, act domains, and dispositional constructs.

Reference Note

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