Behavior as a function of the situation

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Behavior as a Function of the Situation

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The power of several well-known and important situational factors to affect behavior is assessed in terms usually reserved for measuring the power of dispositions. The linear effects of incentive for counterattitudinal advocacy on attitude change, of degree of "hurry" and number of onlookers on bystander intervention, and of proximity of authority and "victim" on obedience average slightly less than .40. This magnitude is quite comparable to that of important dispositional effects.

The comparative power of dispositions versus situations to provide an account of behavior is an issue that has polarized the field of personality and social psychology for several years. This polarization has persisted despite the existence of a number of studies that allow a comparative examination of variance components and show the extreme dispositional and the extreme situational view to be equally lacking in empirical support (Bowers, 1973; Sarason, Smith, & Diener, 1975). These studies have not had the impact that they might perhaps because of certain methodological difficulties inherent in the variance-components approach (Epstein, 1977; Golding, 1975; Olweus, 1977). Nor has the insight that both situational and personal factors can vary widely in their ability to affect behavior had much influence toward moderating the controversy (cf. Snyder & Ickes, in press). Rather, it appears that many personality and social psychologists would still endorse Mischel's (1968) assertion that "the initial assumptions of trait–state theory . . . simply have not been supported adequately" (p. 147) and believe that situational factors generally overwhelm dispositional ones in the determination of behavior.

Specifically, it has been claimed that when correlations are calculated between scores on dispositional variables and measures of experimental behavior, the values only rarely exceed .40 (Nisbett, 1980, p. 124).[1]

The general preference for situational over dispositional explanations appears to be based on a belief that this "personality coefficient" is a small number and is routinely exceeded by important situational effects. Valid comparisons, however, require a common metric. Yet situational and dispositional influences are rarely measured in the same terms (cf. Funder, 1982a). The typical method for assessing situational power is to measure the behavior of one sample of subjects under one set of circumstances, measure another sample of subjects under another set of circumstances, and calculate a t or F statistic that represents the ratio of between-group variance to within-group variance. Often only two groups are used; that is, only two, extreme levels of the situational independent variable are studied. Seldom are more than three groups (or three levels of the independent variable) studied. In any case, the t or F only assesses the probability that the between-group differences could have occurred by chance; neither statistic is a measure of the degree to which behavior can be considered some function of the situational factor in question.

[1] It may be noticed that this recent estimate of the "personality coefficient" represents an increase from its earlier purported value of .30 (Mischel, 1968).

The typical method for assessing dispositional power is to assess a sample of subjects on a personality scale, measure their behavior in an experimental situation, and then calculate Pearson's correlation (r) between the two variables. In such an analysis, as many levels of the "independent variable" are studied as there are different scores in the sample on the personality scale employed. Moreover, the correlation statistic is a direct measure of the degree to which behavior is a linear function of the dispositional factor of interest.

Provided with the necessary information, the t, F, r, and various other statistics can be converted from one to another (Friedman, 1968), even though this is rarely done in practice, because they are all definitionally derived from the same general linear model. This fact opens the possibility of assessing the power of situations to affect behavior in terms usually reserved for measuring the power of dispositions. Such assessment is the purpose of the present study.

We will look at three behaviors and the situational factors that influence them: attitude report as a function of incentive for counterattitudinal advocacy (Festinger & Carlsmith, 1959), bystander intervention as a function of number of others present and degree of "hurry" (Darley & Batson, 1973; Darley & Latané, 1968), and obedience to commands to harm another as a function of proximity of the authority figure and the victim (Milgram, 1975). These studies were chosen on the basis of their prominence in the literature of social psychology and on the basis of their status as impressive demonstrations of the influence of situational factors on behavior. The importance of these situational effects cannot be questioned; instead, we will ask, What is their size?

In each case, we will calculate the degree to which behavior can be considered a linear function of the situational independent variable. We will restrict ourselves to assessing linear trend not because we necessarily believe it the best measure of effect in all cases (although it does have certain advantages) but because this procedure can render our assessment of situational influence directly into the same terms typically used to assess dispositional influences and so often used rhe-

torically to characterize the unimportance of personal factors generally (e.g., the "personality coefficient," Mischel, 1968, p. 78).

Case 1: Attitude Change Under Forced Compliance

The study of attitude change has long been a central concern of social psychology. One of the most dramatic and well-researched attitude change effects is the phenomenon of "forced compliance." In a forced compliance experiment, a subject is induced to advocate a position he or she does not believe. If the incentive for performing this advocacy is low, the subject will tend to change his or her attitude to match the advocated position. But if the incentive is high, little or no attitude change is usually obtained.

This effect has greatly interested many psychologists for a number of reasons. For example, the "reverse incentive effect" within forced compliance appears to contradict directly the commonsense presumption that more incentive should produce more, not less, attitude change. Moreover, the effect demonstrates that subjects' attitude reports are not simply a function of their stable, underlying cognitions but can also be importantly affected by subtle and transient situational factors.

The study of forced compliance that is cited most often is the one by Festinger and Carlsmith (1959). In this famous experiment, subjects performed two manifestly dull tasks (e.g., turning pegs in a large pegboard) and then were induced to describe them to the "next subject" as having been interesting. Payment for such counterattitudinal advocacy was either $20, $1, or nothing. Subjects' reports of "true" favorability toward the dull task at the end of the experiment were found to be an inverse function of the amount of incentive offered; that is, the less a subject would be paid, the more likely he or she was to report that the task was "in truth" interesting.

What is the strength of this inverse function? In their published report, Festinger and Carlsmith (1959) provide most but unfortunately not all of the information required to compute the linear trend. Specifically, the t for the difference between the no-incentive

group and the $1-group is not reported; therefore, the sum of squares of the $1 group (a necessary term for calculating the linear eta) cannot be derived. The total sum of squares can be estimated, however, by assuming either that the variance of the $1 condition was equivalent to the variance of the no-incentive condition or that it was equivalent to the $20 condition.[2] The two estimates of eta associated with the linear trend (analogous to r) on the basis of these assumptions turn out to be, respectively, .36 and .35.

Case 2: Bystander Intervention

The study of bystander intervention in crisis situations has been a second important area for research in social psychology. One reason for the great interest in this topic is the steady stream of news accounts describing people in clear and desperate need who are not aided by others who become aware of their plight. Social psychologists have performed a great deal of research, therefore, into the nature of the situational variables that promote and prevent helping behavior.

Two of the most important factors found to affect bystander intervention are the degree to which the potential helper is in a hurry (Darley & Batson, 1973) and the number of other bystanders that are present (Darley & Latané, 1968). Helping behavior turns out to be an inverse function of both of these variables. In one study, Darley and Batson (1973) stationed an apparently distressed confederate along the route a subject had to take between two appointments. The later the subject had been told he or she was for the second appointment, the less likely the subject was to stop and help. Darley and Latané's (1968) subjects heard a voice cry for help over an intercom and were led to believe either that they were the only one who could hear the victim, that another subject could also hear, or that four other subjects could also hear. The more others the subject believed were present, the less likely he or she was to come to the victim's aid.

How strong are these functions? Commendably, Darley and Batson themselves calculated the linear correlation between degree of hurry and amount of helping in three different ways. They calculated a point-biserial correlation between help versus no-help and degree of hurry as the first step in a stepwise multiple regression analysis, similarly calculated Pearson's correlation between a graded scale of helping and degree of hurry, and computed the Kendall rank correlation between the helping scale and degree of hurry (Darley & Batson, 1973, pp. 105–106). The three values obtained were, respectively, −.37, −.42, and −.38.

The correlation between number of bystanders present and helping behavior must be computed on the basis of other statistics reported by Darley and Latané (1968). These investigators studied bystander intervention as it occurred in groups of size two, three, and six and reported the frequencies of helping and not helping in each condition. From this information one can lay out a bivariate table in which the X column consists of numbers representing group size (two, three, or six) and the Y column consists of ones and zeros representing the helping and not helping of each subject. The point-biserial correlation calculated from this table, which is a direct measure of the degree to which an individual's helping is a function of the number of bystanders present, turns out to be −.38.[3]

Case 3: Obedience

Perhaps the most dramatic and famous research program in the history of experimental social psychology has been the series of behavioral studies of obedience conducted by Milgram (1975). Many people were astonished by the degree to which obedience to commands to harm an innocent victim turned out to be a function not of moral choice and personal values but of subtle situational variables. Milgram identified two such variables as particularly important.

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[2] Fortunately, this analysis is quite robust with respect to moderate changes in within-group variance. However, if the variance differed importantly across conditions, then the homogeneity-of-variance assumption underlying the statistical tests performed by Festinger and Carlsmith was violated.

[3] The rectangular distribution of the group-size variable is less than optimal for this analysis, but the point-biserial correlation is as good an estimate of linear trend as the design permits.

Table 1
Three Behaviors as Linear Functions of Situational Variables

Behavior	Situational variable	Correlation	Reference
Attitude report	Incentive for advocacy	−.36	Festinger & Carlsmith (1959)
Bystander intervention	Hurry	−.39	Darley & Batson (1973)
Bystander intervention	Number of onlookers	−.38	Darley & Latané (1968)
Obedience	Victim's isolation	.42	Milgram (1975)
Obedience	Proximity of authority	.36	Milgram (1975)

Note. Correlations were estimated using various methods; see text for details. Wherever more than one estimate was calculated, the average appears in the Table.

The first variable was the physical proximity of the victim to the subject. The more isolated the subject is from the victim, the more likely the subject is to obey instructions to harm him: "The concrete, visible, and personal presence of the victim acted in an important way to counteract the experimenter's power and to generate disobedience. Any theoretical model of obedience will have to take this fact into account" (Milgram, 1975, p. 40).

The proximity variable was studied in Milgram's (1975) first four experiments, in which the "victim" remained unseen and almost unheard from in the next room (Experiment 1), was unseen but was heard to be protesting loudly (Experiment 2), was seen and heard in the same room (Experiment 3), or was actually touched by the subject (Experiment 4). Milgram helpfully presents the raw data from these experiments in his 1975 book (p. 35). The availability of these data allowed us to calculate the linear correlation between the degree of isolation of the victim and subjects' obedience. As the independent (or X) variable, we used the mean obedience score for each subject's experimental condition.[4] As the dependent (or Y) variable, we used the same measure of obedience utilized by Milgram: the position of the switch on a "shock generator" where the subject refused to obey further commands. Calculated in this manner, the correlation between isolation of the victim and obedience is .42.

The second variable affecting obedience was the proximity of the commanding authority to the subject: "Obedience dropped sharply when the experimenter was physically removed from the laboratory" (Milgram, 1975, p. 59); "the physical *presence* of

an authority was an important force contributing to the subject's obedience or defiance. Obedience to destructive commands was in some degree dependent on the proximal relations between authority and subject, and any theory of obedience must take account of this fact" (Milgram, 1975, p. 62).

Proximity of the authority figure was studied in Experiments 5 and 7. In one condition, the experimenter was physically present. In the other condition, the subject received orders over the telephone. The correlation between experimenter proximity and obedience was calculated in the manner described above, and the result was a point-biserial correlation equal to .36.

Discussion

The results of this study are summarized in Table 1. When measured in terms of linear correlations, the effects on behavior of several of the most prominent situational factors in social psychology seem to average slightly less than .40. Moreover, because in most social psychological experiments only two or three levels of the situational independent variable are studied, and because these levels usually are deliberately chosen to be quite different from each other, situational linear effects such as calculated here quite possibly *overestimate* the true state of affairs. The practice of studying only individuals with extreme

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[4] This figure is, of course, the best available estimate of the potential of all the factors in each experimental condition to evoke obedience and probably does not depend wholly on victim proximity. The resulting correlation, therefore, might overestimate the degree to which obedience can be considered a function of distance from the victim.

scores on an independent variable, which is in effect often the practice in social psychology, can increase that variable's apparent influence on behavior (cf. Feldt, 1961; McNemar, 1960).

Still, it must be reemphasized that we do not intend our analyses to minimize the importance of the situational variables studied. Indeed, these variables were selected precisely because of their well-known and undoubted importance for understanding the behaviors they affect. Neither would we wish to deny that a careful search of the social psychological literature might well unearth linear situational effects of a magnitude greater than .40 (as well as many considerably smaller than .40). Rather, our purpose is to assess the size of a few well-known and undoubtedly important situational effects and to demonstrate that the numbers thus derived are of a magnitude not unheard of in the study of dispositions (cf. Nisbett, 1980).

Our several examples indicate that situational effects need not explain large percentages of the behavioral variance in order to be important; we suggest that this might also be true of person effects. Yeaton and Sechrest (1981), for example, demonstrate in convincing fashion how a "small" person effect could have considerable practical importance. It seems that there is no simple direct relation between size and importance of effects. Questions concerning the relative importance of personal and situational effects, therefore, cannot be settled by examining their sizes alone. Other considerations, such as the theoretical and practical relevance of the effects, are equally cogent (cf. Funder, 1982b).

Both in Darley and Latané (1968) and Darley and Batson (1973), the relation between several individual-difference variables and behavior was measured. Darley and Latané found that Machiavellianism, anomie, authoritarianism, social desirability, and social responsibility were uncorrelated with helping. Darley and Batson found that three measures of "religiosity" (specially developed by Batson) were essentially unrelated to amount of helping, although one measure was strongly related to the kind of help offered. In a more general vein, Milgram (1975,

p. 205) noted his surprise at the weakness with which personality variables related to obedience but did not report any specific correlations. These observations serve to remind us that within any given study, the relative influence of the dispositional and situational factors that are measured will depend in a specific way on the nature of the situation (e.g., whether it is "strong" or "weak"; see Snyder & Ickes, in press), on the dispositions that are selected for measurement and the reliability and validity with which they are measured, and on various properties of the subject sample (e.g., its heterogeneity or homogeneity).

From the way the issue is often addressed in the social psychological literature, however, one might think that correlations between measurable dimensions of situations and single behaviors typically approach 1.0. The present analyses reveal that even some situational factors that must be considered important do not possess quite that degree of predictive power, just as dispositional factors do not. In fact, it may be that, due to their unreliability, the prediction of single, isolated actions from single variables will never be particularly feasible (cf. Block, 1977; Block & Block, 1980). If we wish to maximize our predictive power, we are probably well-advised to take multiple measures of appropriately interrelated behaviors and combine them into behavioral indexes—a time-honored technique—expositions of which range at least from Spearman (1910) to Epstein (1979). Or, we could combine the power of several predictors of behavior using multiple regression techniques (e.g. Cohen & Cohen, 1975). Such procedures will at least lead attempts to understand behavior in the right direction.

References

Block, J. Advancing the science of personality: Paradigmatic shift or improving the quality or research? In D. Magnusson & N. S. Endler (Eds.), *Personality at the crossroads: Current issues in interactional psychology.* Hillsdale, N.J.: Erlbaum, 1977.

Block, J. H., & Block, J. The role of ego-control and ego-resiliency in the organization of behavior. In W. A. Collins (Ed.), *Minnesota Symposium on Child Psychology* (Vol. 13). Hillsdale, N.J.: Erlbaum, 1980.

Bowers, K. S. Situationism in psychology: An analysis

and critique. *Psychological Review*, 1973, *80*, 307–336.

Cohen, J., & Cohen, P. *Applied multiple regression/correlation analysis for the behavior sciences.* Hillsdale, N.J.: Erlbaum, 1975.

Darley, J. M., & Batson, C. D. "From Jerusalem to Jericho": A study of situational and dispositional variables in helping behavior. *Journal of Personality and Social Psychology*, 1973, *27*, 100–108.

Darley, J. M., & Latané, B. Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology*, 1968, *8*, 377–383.

Epstein, S. Traits are alive and well. In D. Magnusson & N. S. Endler (Eds.), *Personality at the crossroads: Current issues in interactional psychology.* Hillsdale, N.J.: Erlbaum, 1977.

Epstein, S. The stability of behavior: I. On predicting most of the people much of the time. *Journal of Personality and Social Psychology*, 1979, *37*, 1097–1126.

Feldt, L. S. The use of extreme groups to test for the presence of a relationship. *Psychometrika*, 1961, *26*, 307–316.

Festinger, L., & Carlsmith, J. M. Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology*, 1959, *58*, 203–210.

Friedman, H. Magnitude of experimental effect and a table for its rapid estimation. *Psychologial Bulletin*, 1968, *70*, 245–251.

Funder, D. C. On assessing social psychological theories through the study of individual differences: Template matching and forced compliance. *Journal of Personality and Social Psychology*, 1982, *43*, 100–110. (a)

Funder, D. C. On the accuracy of dispositional versus situational attributions. *Social Cognition*, 1982, *1*, 205–222. (b)

Golding, S. L. Flies in the ointment: Methodological problems in the analysis of the percentage of variance due to persons and situations. *Psychological Bulletin*, 1975, *82*, 278–288.

McNemar, Q. At random: Sense and nonsense. *American Psychologist*, 1960, *15*, 295–300.

Milgram, S. *Obedience to authority.* New York: Harper/Colophon, 1975.

Mischel, W. *Personality and assessment.* New York: Wiley, 1968.

Nisbett, R. N. The trait construct in lay and professional psychology. In L. Festinger (Ed.), *Retrospections on social psychology.* New York: Oxford University Press, 1980.

Olweus, D. A critical analysis of the "modern" interactionist position. In D. Magnusson & N. S. Endler (Eds.), *Personality at the crossroads: Current issues in interactional psychology.* Hillsdale, N.J.: Erlbaum, 1977.

Sarason, I. G., Smith, R. E., & Diener, E. Personality research: Components of variance attributed to the person and the situation. *Journal of Personality and Social Psychology*, 1975, *32*, 199–204.

Snyder, M., & Ickes, W. Personality and social behavior. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3rd ed.). Reading, Mass.: Addison-Wesley, in press.

Spearman, C. Correlation calculated from faulty data. *British Journal of Psychology*, 1910, *3*, 271–295.

Yeaton, W., & Sechrest, L. Meaningful measures of effect. *Journal of Consulting and Clinical Psychology*, 1981, *49*, 766–767.