

PERCEPTIONS OF POWER: A COGNITIVE PERSPECTIVE

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Upper level college students in the United States ($N = 28$) were presented with vignettes describing a manager as possessing either (a) high coercive and reward power, or (b) low coercive and reward power. The manipulation of these two power bases had a significant impact on *all five* of French and Raven's (1959) power bases (i.e., referent, coercive, expert, legitimate, and reward). Moreover, population effect size estimates (eta-squares) were noticeably large, ranging from .17 to .68. These findings are interpreted utilizing a cognitive perspective, and expanding the construct of cognitive structures to the realm of social power.

The impact of cognitive theory on social psychology has escalated notably in the past two decades. People are characterized as complex information handlers who receive inputs from the environment, process data, and generate outputs (Anderson, 1990). Additionally, human beings are depicted as cognitive misers because information processing capabilities (e.g., storage and retrieval of information) are limited (Posner, 1989). Thus, cognitive scientists have proposed that people utilize "symbolic cognitive architectures" in order to (a) attempt to overcome the inherent limitations in human information processing capabilities, and (b) more efficiently handle the complex, uncertain, and often incomplete information available in social contexts (cf. Newell, Rosenbloom, & Laird, 1989). These cognitive systems are defined as networks of interrelated symbols which guide and simplify processing of social perceptions.

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A previous version of this article was presented at the 14th Biennial Applied Behavioral Sciences Symposium, US Air Force Academy, Colorado Springs, Colorado, USA, April 1994.

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Numerous areas of social and organizational psychology utilize symbolic architectures to explain social behavior and perceptions (see Lord & Maher, 1991, for a review). For example, Aguinis, Nesler, Hosoda, and Tedeschi (1994) found that the relative preference order for four types of influence tactics (rationality, exchange, assertiveness, and ingratiation) was invariant across various situations. Aguinis et al. explained these results by postulating a symbolic cognitive structure associated with influence situations (i.e., "persuade package," Schank & Abelson, 1977). Thus, it seems that subjects' decisions about the use of influence tactics were guided by a general schema associated with influence, such that the rank-order of the likelihood that each of the tactics would be used was identical across three distinct situations.

As a second illustration of the use of cognitive structures in social psychology, applied social psychologists have long recognized that group performance serves as a cue (i.e., performance cue effect, PCE) to evaluate leader characteristics, such that leaders of effective groups are also perceived as being effective (Lord & Maher, 1989b; Staw, 1975). The existence of a PCE is explained by attribution theory and implicit leadership theories (ILTs).

ILTs are knowledge structures, or common mental models, that reflect prototypes or patterns and expectations of behaviors assumed to be characteristic of effective or ineffective leaders. In the absence of sufficient information, group members utilize the available environmental cues in combination with previously learned knowledge structures to evaluate leaders and place them in the appropriate category (e.g., effective, ineffective). Thus, it is apparent that cognitive structures about characteristics of effective and ineffective leaders determine, at least in part, the manner in which information about the leader's behavior is perceived, stored, and retrieved.

The purpose of the present study was to expand the concept of cognitive structures to the area of social power. Power is often considered one of the most critical constructs in social psychology (Tedeschi, 1972), yet little is known about the impact of cognitive structures on power perceptions. The need to investigate this issue is especially relevant given the predominance of the French and Raven (1959) power taxonomy in the social and organizational psychology literatures.

French and Raven identified five power bases: (a) referent (based on the target's desire to be associated with the agent), (b) coercive (based on the target's belief that the agent has the ability to punish him or her), (c) expert (based on the target's belief that the agent can provide him or her with special knowledge), (d) legitimate (based on the target's perception that the agent has the legitimate right to influence the target and that he or she is obliged to comply), and (e) reward (based on the target's belief that the agent has the ability to provide him or her with desired tangible or intangible objects). Since

the introduction of French and Raven's taxonomy, numerous researchers have developed scales to measure the five power bases, and have investigated power perceptions utilizing these instruments (Carson, Carson, & Roe, 1993; Kipnis, Schmidt & Wilkinson, 1980; Koslowsky & Schwarzwald, 1993; Littlepage, Van Hein, Cohen, & Janiec, 1993; Nesler, Aguinis, Quigley, Lee, & Tedeschi, 1994; Schriesheim & Hinkin, 1990; Thambain & Gemmill, 1974; Warren, 1968; Yukl & Falbe, 1991; see Podsakoff & Schriesheim, 1985 for a review of 18 studies). However, this body of research does not take into consideration the possible existence of cognitive structures that may bias the results by means of illusory correlations (Chapman & Chapman, 1969; Cooper, 1981): Subjects asked to rate the power of a supervisor or peer, as measured by the French and Raven power taxonomy, may have implicit theories of power so that once information cues are provided on one power base (e.g., high reward power), they will categorize a ratee into a prototype (e.g., powerful), and subsequent power ratings on the other power dimensions (i.e., referent, coercive, expert, and legitimate power) may be based on this categorization rather than on behavioral information. The illusory correlation phenomenon (i.e., amount of power on one dimension covaries with power on other dimensions), which has been widely researched in the area of performance appraisal (see Lord & Maher, 1989a, for a review), may explain why most previous work using the French and Raven power taxonomy has found that the correlations between the five power bases are typically moderate to high in magnitude (cf. Podsakoff & Schriesheim, 1985; Nesler, Aguinis, Quigley, & Tedeschi, 1993).

In view of the aforementioned arguments, the present study tested the hypothesis that subjects have implicit theories of power. Subjects were presented with information about a manager's reward and coercive power, and were asked to provide ratings of this manager's five power bases (referent, coercive, expert, legitimate, and reward). The existence of a cognitive structure concerning power (i.e., implicit theory of power) would be supported if the manager was systematically categorized on all dimensions depending on the available information cues.

METHOD

SUBJECTS

Twenty eight undergraduate students enrolled in upper-level psychology courses in a northeastern United States university participated in the study for partial fulfillment of their course requirements. Of the total sample, 8 were male and 20 were female.

DESIGN AND PROCEDURE

Subjects were given a vignette describing "Mr. Benne," a manager at the "American Plastics Corporation," and then were asked to answer questions about Mr. Benne's power on a paper and pencil questionnaire¹. There were two conditions in this experiment ($N = 14$ per condition): Vignettes described Mr. Benne as either possessing (a) low reward and coercive power ("Mr. Benne ... can infrequently give subordinates undesirable work assignments ... he can also suggest which of his subordinates should be provided with rewards ... However, any rewards ... must be approved by the Personnel Department"), or (b) high reward and coercive power ("Mr. Benne can fire anyone in his division whom he feels is not doing a good job ... He also has the authority to provide rewards and incentives ...").

After reading one of the descriptions of Mr. Benne, participants were asked to provide information regarding the five dependent variables: They rated Mr. Benne's five power bases (i.e., referent, coercive, expert, legitimate, and reward) using a modified version of the Hinkin and Schriesheim (1989) scales as adapted by Nesler et al. (1993) (e.g., referent power: "Mr. Benne can make his subordinates feel valued;" coercive power: "Mr. Benne can give his subordinates undesirable job assignments;" expert power: "Mr. Benne can give his subordinates good technical suggestions;" legitimate power: "Mr. Benne can make his subordinates feel that they have commitments to meet;" and reward power: "Mr. Benne can influence his subordinates' getting a pay raise"). Each of the five dependent variables consisted of the average of four items measuring each power base (scale reliabilities as estimated by alpha coefficients were .85 or higher). Ratings were provided on 9-point Likert-type scales with two anchors: (1) Disagree and (9) Agree.

RESULTS

A multivariate analysis of variance (MANOVA) was conducted to examine the effects of the manipulation of reward and coercive power on the five power bases ratings (referent, coercive, expert, legitimate, and reward)². Wilks's lambda was .27, $F(5, 22) = 12.05$, $p < .001$, indicating that the manipulation of two power bases influenced power ratings on all five bases of power.

¹ Copies of the vignettes as well as the questionnaire utilized in the present study can be obtained by writing to the senior author.

² Initially, we conducted a 2 (power: High reward and coercive power, low reward and coercive power) X 2 (gender: Female, male) MANOVA to examine whether gender had a main or interactive effect on the five power bases ratings. For the main effect of gender, Wilks's was .93, $F(5, 20) = 29$, $p = .92$; and for the power by gender interaction, Wilks's was .77, $F(5, 20) = 1.21$, $p = .34$. Given those nonsignificant results, we collapsed across gender for all subsequent analyses.

Univariate follow-up tests were conducted to examine the impact of the reward and coercive power manipulation on each of the French and Raven five power bases. The means for each power base for conditions of high coercive and reward power and low coercive and reward power are shown in Figure 1. For referent power, $F(1,26) = 7.64$, $\eta^2 = .23$, $p < .05$; for coercive power $F(1, 26) = 22.29$, $\eta^2 = .46$, $p < .001$; for expert power, $F(1, 26) = 5.28$, $\eta^2 = .17$, $p < .05$; for legitimate power, $F(1, 26) = 12.55$, $\eta^2 = .33$, $p < .01$; and for reward power, $F(1, 26) = 56.24$, $\eta^2 = .68$, $p < .001$. These results indicate that the manipulation of two power bases influenced subjects' perceptions of *all five* power bases. The values for eta-square, which is a population effect size estimate, range from .17 to .68, indicating that the manipulation of coercive and reward power accounted for fairly large proportions of variances in the five power bases ratings. The moderate to strong magnitude of the effect size estimates are especially relevant given that sample size was fairly small, and eta-square values are expected to become even larger if sample size is increased (Hays, 1988).

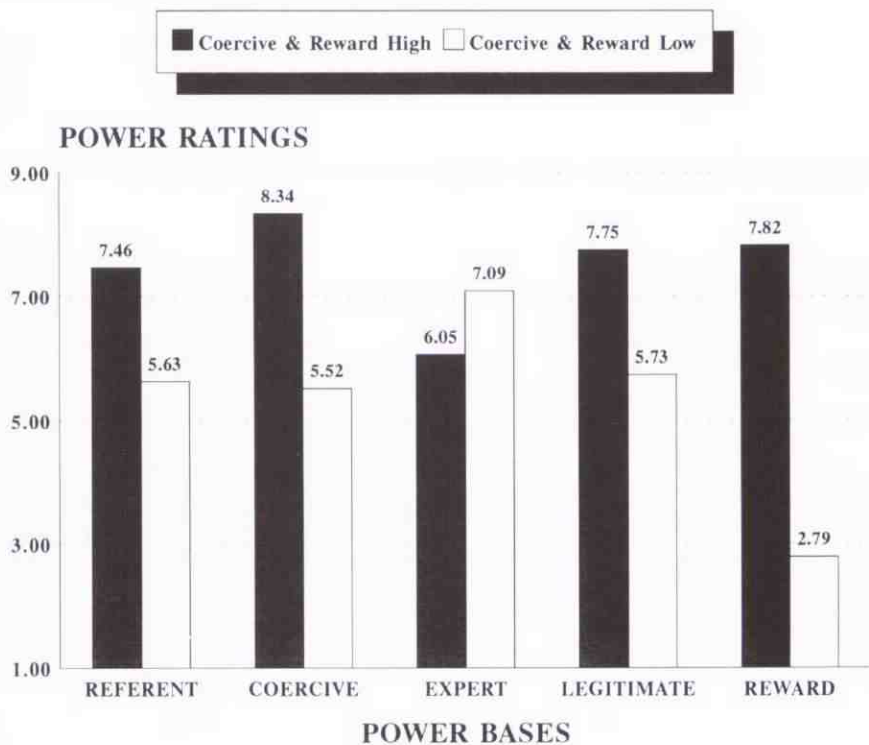


Figure 1. Means for the effects of coercive and reward power on ratings of referent, coercive, expert, legitimate, and reward power.

DISCUSSION

The purpose of the present study was to expand the concept of cognitive structures to the realm of social power. We manipulated two of the five French and Raven power bases, and asked subjects to provide ratings on all five. The manipulation of coercive and reward power had a significant impact on perceptions of coercive and reward power, as well as on perceptions of expert, legitimate, and referent power. This finding suggests that participants had implicit theories about the relationship among the five power bases.

As shown in Figure 1, the manipulation of high coercive and reward power produced an *increment* in the power ratings of legitimate and referent power, and a *decrement* in the ratings of expert power. Thus, it seems that subjects had prototypes or implicit theories about powerful managers, such that when "Mr. Benne" had high coercive and reward power, respondents consistently assumed that he also had high referent and legitimate power, and low expert power. When respondents were given certain cues about "Mr. Benne," cognitive structures seem to have been utilized to compensate for the lack of information and respond questions about power bases on which no information was provided.

The fact that high coercive and reward power led to lower ratings of expertise is not completely unexpected and replicates results previously reported in the social power literature. For example, a recent study by Littlepage et al. (1993) also found that coercive power was negatively correlated with expert power. Moreover, Tedeschi and Felson (1994) reviewed the literature on coercive behavior and found evidence indicating that intelligence, problem solving abilities and articulateness are inversely related to the use of coercion. It may be the case that participants in the present experiment recognized the relationship between the use of coercion and expertise, and therefore attributed lower expertise to the manager with high coercive power as compared to the manager with low coercive power.

Overall, the results of this experiment are useful in interpreting the findings of several previous studies that adopted the French and Raven power taxonomy and also found a complex pattern of relationships among the five power bases (e.g., Littlepage et al., 1993; Podsakoff & Schriesheim, 1985). Typically, the relationships among the power bases are not interpreted or discussed. In contrast, adopting a cognitive perspective, and utilizing the concept of cognitive structures, can explain the present and previous findings about the relationship among the five French and Raven power bases.

A noteworthy implication of the present results is that the most frequently utilized method to gather information about power may be misleading: Answers to paper and pencil questionnaires may be influenced not only by

actual observations of ratees, but also by implicit theories that help respondents to fill in the information gaps. Stated differently, in situations of limited information respondents may categorize a ratee into a prototype, and ratings on power bases on which they have no information may be based on this categorization process rather than on actual observations. Future research could examine the extent to which previous research on power perceptions suffers from this threat to internal validity (cf. Cook & Campbell, 1979).

Finally, we foresee at least two avenues for future research. First, in the present study we confronted participants with a situation of insufficient information. It may also be the case that in situations of information overload cognitive structures are utilized as a coping strategy. Consequently, future research should examine situations in which there is information overload, and investigate the role played by implicit theories of power in this context. Second, we found that information on coercive and reward power affected ratings on referent, expert, and legitimate power. Future research should attempt to describe symbolic architectures regarding power in more detail, and attempt to identify cognitive maps of power, which would delineate more precisely the relationships among the French and Raven power bases.

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