

## Field Studies of French and Raven's Bases of Power: Critique, Reanalysis, and Suggestions for Future Research

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Among the most widely used conceptualizations of social power is the five-fold typology developed by French and Raven in 1959, and numerous field studies have used this conceptualization over the past few decades. Unfortunately, however, a majority of them suffer from severe methodological shortcomings that make their interpretation problematic at best. In this article, we discuss these problems and present a reanalysis of the literature, which strongly suggests that at least some of our knowledge about the five bases of power is methodologically suspect. Following this, we also present and discuss suggestions for improving future research in this domain.

Social power and influence processes have occupied a central place in psychological theories over the past few decades, perhaps most notably in the areas of industrial/organizational and social psychology. Undoubtedly, among the most popular and widely accepted conceptualizations of social power is the five-fold typology developed by French and Raven in 1959. In fact, despite recent criticisms that have been advanced against this conceptualization (e.g., Kipnis & Schmidt, 1983; Kipnis, Schmidt, & Wilkinson, 1980), the French and Raven typology is widely used. For example, a survey of the authors' bookshelves disclosed that it was included in every survey textbook in the areas of organizational behavior and social psychology!

An examination of the research literature also discloses that numerous studies have used French and Raven's typology. However, only field studies seem to have used explicit and complete operationalizations of the French and Raven framework. Although experimental studies often mention the French and Raven power bases, such studies either investigate only a subset of the five power

bases, or they do not examine the effects of the power bases on subordinate outcome variables. Thus, experimental research in this domain is not comparable with the field research and, being more limited in scope and applicability to organizational settings, is not reviewed here.

A close examination of those field studies that have examined the effects of the French and Raven power bases, however, surprisingly contradicts research from field studies in a highly related area: the effects of supervisory or leader reward and punishment behavior on subordinate performance, satisfaction, and other outcomes (Podsakoff & Schriesheim, 1984). Briefly, the majority of these later studies (cf. Greene, 1976; Hunt & Schuler, 1976; Podsakoff & Todor, in press; Podsakoff, Todor, Grover, & Huber, 1984; Podsakoff, Todor, & Skov, 1982; Sims, 1977; Sims & Szilagyi, 1975; Szilagyi, 1980a, 1980b) indicate that a positive relation exists between leader reward behavior and subordinate outcome variables, whereas field studies using the French and Raven (1959) framework generally show supervisory reward behavior to be unrelated, or negatively related, to subordinate outcome variables (e.g., Bachman, 1968; Bachman, Bowers, & Marcus, 1968; Bachman, Smith, & Slesinger, 1966; Burke & Wilcox, 1971; Cope, 1972; Martin & Hunt, 1980; Slocum, 1970; Wieland, 1969). Yukl (1981), summarizing a more limited set of studies using the French and Raven typol-

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ogy than we reviewed,<sup>1</sup> concluded that “the results for use of reward power were quite inconsistent, with no clear trend across studies” (p. 39), and that “the lack of clear association between use of reward power and leader effectiveness is inconsistent with the findings of some other research on leadership and motivation” (p. 42).

Discovery of these contradictory findings, as well as our later reading of the Yukl (1981) review, prompted us to reexamine the empirical evidence from the field studies that used the French and Raven typology. Interestingly, this reanalysis led us to the conclusion that much of the research that purportedly tests French and Raven’s (1959) conceptualization of social power suffers from severe methodological shortcomings, and the seeming discrepancy in findings between this research and related research in the leadership domain may be more apparent than real.

The first part of our review outlines the French and Raven typology and discusses the instruments that have been used to measure the five power bases in field research. The findings of those studies that used these instruments are then reviewed. Next, methodological problems inherent in most of these studies are discussed, and a reanalysis of the research findings is presented. Following this, improved techniques for the measurement and assessment of the effects of social power are discussed. Several general concerns that should be considered in future research in the area of social power are also addressed.

#### Theoretical Definitions and Scale Content

In their original article, French and Raven (1959) identified five bases of power which an agent, *O*, can exert over a person, *P*. These bases of power were reward power, coercive power, legitimate power, expert power, and referent power. The theoretical definitions of each power base are given in Table 1. Not given in this table is a sixth type of influence—*informational influence*—which was also discussed by French and Raven but not classified as one of the primary bases of power.

With the exception of one study (Warren, 1968), three instruments (or slight modifications of these instruments) have been used to

measure French and Raven’s bases of power in field settings. The first and perhaps the most prominent of these scales, was developed by Bachman et al. (1966). The other two measures—one developed by Student (1968) and the other by Thamhain and Gemmill (1974)—represent slightly modified versions of this original scale. Each of these scales is also presented in Table 1. Likert or other interval-type response categories have usually not been used with these measures. Instead, the scale items are typically presented to respondents as a set, and each respondent rank orders the scale items according to how descriptive they are of the reasons for complying with directives or suggestions from the supervisor.

After perusing Table 1, it is evident that there are many similarities between the scales developed by Bachman et al. (1966), Student (1968), and Thamhain and Gemmill (1974); perhaps the greatest similarity is between Bachman et al.’s and Student’s scales. A closer examination of this table, however, also indicates a major problem with these scales, which have been used to assess social power. When we compared them with French and Raven’s (1959) theoretical definitions, it is obvious that each scale has questionable content validity. For example, French and Raven’s (1959) definition seems to suggest that reward power stems from *O*’s ability to control legitimate, valent rewards for *P*. However, Bachman et al.’s and Student’s operationalizations of this power base imply that rewards are generally used by *O* in an illegitimate manner as a form of payoff to *P* for complying with *O*’s requests. Additionally, it can be seen from Table 1 that all three reward power scales use very limited conceptualizations of re-

*(text continues on page 391)*

<sup>1</sup> Yukl (1981) reviewed 11 of the 18 studies discussed in this article. Yukl omitted 4 that were published prior to his writing (Bachman et al., 1968; Burke & Wilcox, 1971; Cope, 1972; Wieland, 1969), and 3 studies were published subsequently (Busch, 1980; Cobb, 1980; Martin & Hunt, 1980). Although noting this inconsistency, we also note that Yukl did not attempt to draw any major substantive conclusions from the literature, nor did he do more than suggest that “the possibility of biased results in the power usage literature . . . might be due to respondent ‘attribution bias’” (p. 42), causing the noted inconsistency in obtained results.

Table 1

*Comparison of Various Operationalizations of French and Raven's (1959) Power Bases*

Study	Power base description
Reward power	
French & Raven (1959)	Reward power is defined as power whose basis is the ability to reward. The strength of the reward power of O/P increases with the magnitude of the rewards which P perceives that O can mediate for him. Reward power depends on O's ability to administer positive valences and to remove or decrease negative valences. The strength of reward power also depends upon the probability that O can mediate the reward, as perceived by P. (p. 156)
Bachman et al. (1966)	"He can give special help and benefits to those who cooperate with him." (p. 130)
Student (1968)	"I comply with my supervisor's directives because he can give special help and benefits to those who cooperate with him. (p. 190)
Thamhain & Gemmill (1974) <sup>a</sup>	"I feel he can influence my salary." (p. 218)
Coercive/punishment power	
French & Raven (1959)	Coercive power is similar to reward power in that it also involves O's ability to manipulate the attainment of valences. Coercive power of O/P stems from the expectation on the part of P that he will be punished by O if he fails to conform to the influence attempt. Thus, negative valences will exist in given regions of P's life space, corresponding to the threatened punishment by O. The strength of coercive power depends on the magnitude of the negative valence of the threatened punishment multiplied by the perceived probability that P can avoid the punishment by conformity (i.e., the probability of punishment for nonconformity minus the probability of punishment for conformity). (p. 157)
Bachman et al. (1966)	"He can apply pressure or penalize those who do not cooperate." (p. 130)
Student (1968)	"I comply with my supervisor's directives because he can penalize or make things difficult for those who do not cooperate with him." (p. 190)
Thamhain & Gemmill (1974) <sup>a</sup>	"If feel he can apply pressure or penalize me in some way." (p. 219)
Legitimate power	
French & Raven (1959)	Legitimate power of O/P is here defined as that power which stems from internalized values in P which dictate that O has a legitimate right to influence P and that P has an obligation to accept this influence. We note that legitimate power is very similar to the notion of legitimacy of authority which has long been explored by sociologists, particularly by Weber and more recently by Goldhammer and Shils. However, legitimate power is not always a role relation:

*(table continued)*

Table 1 (continued)

Study	Power base description
Legitimate power	
Bachman et al. (1966) Student (1968) Thamhain & Gemmill (1974) <sup>a</sup>	<p>P may accept an induction from O simply because he previously promised to help O, and he values his word too much to break the promise. In all cases, the notion of legitimacy involves some sort of code or standard, accepted by the individual, by virtue of which the external agent can assert his power. (p. 159)</p> <p>"He has a legitimate right, considering his position, to expect that his suggestions will be carried out." (p. 130)</p> <p>"I comply with my supervisor's directives because he has a right, considering his position, to expect subordinates to do what he wants." (p. 190)</p> <p>"I feel he has the formal authority." (p. 218)</p>
Expert power	
French & Raven (1959) Bachman et al. (1966) Student (1968) Thamhain & Gemmill (1974) <sup>a</sup>	<p>The strength of the expert power of O/P varies with the extent of the knowledge or perception that P attributes to O within a given area. Probably P evaluates O's expertness in relation to personal knowledge as well as against an absolute standard. (p. 163)</p> <p>"I respect his competence and good judgment about things with which he is more experienced than I." (p. 130)</p> <p>"I comply with my supervisor's directives because I respect his experience and good judgement. (p. 190)</p> <p>"I respect him and place confidence in his special knowledge and advice." (p. 219)</p>
Referent power	
French & Raven (1959) Bachman et al. (1966) Student (1968)	<p>The referent power of O/P has its basis in the identification of P with O. By identification, we mean a feeling of oneness of P with O, or a desire for such an identity. If O is a person toward whom P is highly attracted P will have a desire to become closely associated with O. If O is an attractive group, P will have a feeling of membership or desire to join. If P is already closely associated with O he will want to maintain this relationship. P's identification with O can be established or maintained if P behaves, believes, and perceives as O does . . . to influence P, even though P may be unaware of this referent power. The stronger the identification of P with O the greater the referent power of O/P. (p. 161-162)</p> <p>"I admire him for his personal qualities, and want to act in a way that merits his respect and admiration." (p. 130)</p> <p>"I comply with my supervisor's directives because he is a 'nice guy' and I don't want to hurt him." (p. 190)</p>

Table 1 (continued)

Study	Power base description
Referent power	
Thamhain & Gemmil (1974) <sup>a</sup>	"He has established a personal friendship with me." (p. 219)

Note. O = agent; P = person.

<sup>a</sup> This instrument included additional items not considered here. These other items either did not directly assess the French and Raven power bases or subsequent research has not used them. There are two additional items that relate to reward power but, consistent with Yukl (1981), these items were not reported here, because Thamhain and Gemill (1974) treated these scales separately.

wards. Bachman et al. and Student measured only help and benefits, whereas Thamhain and Gemmill assessed only salary. As shown in Table 1, French and Raven used a broad conceptualization of reward power, and it seems unlikely that any of the three operationalizations adequately tap the content domain of the reward power construct. Because content validity depends on the inclusion of an adequate sample of a construct's theoretical domain, as well as the exclusion of extraneous content (Nunnally, 1978), it seems that all three reward power scales have questionable content validity, at best.

We are not the first to recognize the potential problems with these measures of reward power. Indeed, in the initial article in which they first reported the results using their reward power scale, Bachman et al. (1966) noted that:

The negative relationship between the use of reward power and our measures of effectiveness requires further explanation. We stated earlier that reward power might be associated with supportive or ego-enhancing practices of management . . . However, it may be that many employees are ambivalent about the use of reward power by their supervisor. It may be well to reward someone for a job well done, but rewards may also be perceived as bribes, pay-offs, favoritism and the like. The phrase used in the present study, "He can give special help and benefits to those who cooperate with him" may have implied the latter type of reward. (p. 135)

However, despite this recognition of a serious shortcoming in their reward power scale, neither Bachman (Bachman, 1968; Bachman et al., 1968) nor other, subsequent, researchers have revised the scale to include more theoretically valid item content.

Similar content validity problems exist for the other power measures as well. All three coercive power measures displayed in Table 1 suggest that a leader can apply pressure or penalize those individuals who do not cooperate. These items, however, are ambiguous as to whether or not the leader's request is considered legitimate by the subordinate. This is highly problematic as there is a substantial amount of evidence indicating that when punishment is administered appropriately (i.e., contingent upon poor performance) and in concert with the use of contingent rewards, such punishment is positively related to subordinate performance and satisfaction. However, when punishment is inappropriately administered (not contingent upon performance), the relation is negative or nonsignificant (cf. Podsakoff et al., 1984; Podsakoff et al., 1982). These findings, then, suggest that appropriateness or legitimacy must be addressed in coercive power scales. When coercive power or punishment is perceived as appropriate, it is likely to have functional effects; when it is inappropriate, it has no or

negative effects. The operationalizations of coercive power presented in Table 1, however, do not make it clear as to whether this power base is used for legitimate or appropriate reasons (e.g., poor performance) or for illegitimate reasons (e.g., the use of coercive techniques when a subordinate refuses to do something the supervisor requests but which is against company policy). Thus, these scales allow for too much interpretation by respondents and have poor item content. Additionally, as with the reward power scales, the coercive power scales use a very narrow operationalization of the broad French and Raven conceptualization. Therefore, they do not seem to tap adequately the content domain of this construct.

Examination of the three operationalizations of legitimate power also discloses this later problem: a very narrow operationalization of a broad construct. French and Raven (1959) clearly noted that legitimate power involves more than just position power or "authority" (see the definition in Table 1). However, all three legitimate power scales use only very narrow item content. The expert power measures suffer from a similar problem. Here, all three scales assess competence based upon experience and judgment. Other expert sources, such as training and access to knowledge (technical and other), are not assessed. Finally, similar questions regarding content validity can be raised with respect to Student's (1968) and Thamhain and Gemmill's (1974) measures of referent power. French and Raven's (1959) definition of referent power suggests that a crucial component of this power base is an identification or feeling of oneness of *P* with *O*. Although the measures of Student and Thamhain and Gemmill suggest that *P* likes or is friendly with *O*, they do not appear to capture the same intensity of identification as suggested by French and Raven.

### Review of the Literature

The brief discussion just presented strongly suggests that there are severe problems with the way in which French and Raven's five bases of power have been operationalized, and more is said concerning the issue of

content validity later. The previous analysis of scale item content, however, shows that the three major power base measures are very similar operationalizations and, hence, that empirical results obtained from their use should be additive and comparable. Table 2 provides a summary of the existing research on the effects of the five power bases; it consolidates what is known and serves as background for further discussion and critique.<sup>2</sup> The following discussion summarizes Table 2 by presenting results according to dependent or criterion variables used. Some notable features of a few of the studies are also discussed to provide additional background information where needed. Additionally, it should be noted that, with a few exceptions, there are three characteristics common to all of the studies presented in Table 2. First, the majority of these studies used single-item operationalizations of each of French and Raven's bases of power. Second, with the exception of studies by Bachman et al. (1968; Samples 3 and 4), Busch (1980), Cobb (1980), Hammer (1978), Martin and Hunt (1980), and Warren (1968), all have used the rank-order scale format that was mentioned earlier.<sup>3</sup> Finally, the majority of these studies used grouped, averaged, or aggregated data rather than individual-level data for their analyses (see Table 2 for specifics). The importance of each characteristic is discussed later.

### *Performance Relation*

As shown in Table 2, seven studies investigated relations between French and Raven's

<sup>2</sup> Because of space constraints, a narrative summary of these results is not provided herein. Copies of a narrative summary are available from the authors upon request.

<sup>3</sup> It should perhaps be noted that Sheridan and Vredenburg (1978) used a pair-comparison modification of Bachman et al.'s (1966) scales. As discussed by Guilford (1954), rank-order responses can be considered as special cases of pair comparisons, where transitivity is forced upon the respondents. For this reason, the Sheridan and Vredenburg (1978) study may be considered as having used a variant of the Bachman et al. (1966) rank-order scales, and our subsequent consideration of this study treats it as one that used a rank-order response format.

bases of power and subordinate performance. Six of them (Bachman et al., 1966; Ivancevich & Donnelly, 1970; Student, 1968; Slocum, 1970; Thamhain & Gemmill, 1974; Sheridan & Vredenburg, 1978) used rank-order power scales; Bachman et al. (1968; Samples 3 and 4) used single-item Likert scales.

The power-performance results summarized in Table 2 suggest that reward power tends to be negatively related or unrelated to performance, as are coercive and legitimate power. Expert and referent power, in contrast, tend to be positively related or unrelated. These relations appear to hold regardless of whether the performance criterion is a supervisor-provided rating or a more objective indicator. However, it should be noted that the one Likert-type scale study in this domain (Bachman et al., 1968) produced results that are more supportive of reward and coercive power as having more positive or less negative relations with subordinate performance. This is suggestive of measurement format effects, which we consider in greater depth later in this review.

#### *Satisfaction With Supervision*

Six studies (Bachman, 1968; Bachman et al., 1968; Bachman et al., 1966; Burke & Wilcox, 1971; Busch, 1980; Slocum, 1970) examined relations between the French and Raven power bases and subordinate satisfaction with supervision. The results of these studies are clear and unambiguous with respect to expert and referent power, where only positive relations have been obtained, and with respect to coercive power, where relations have been either negative or nonsignificant. The results for reward and legitimate power, however, are not as clear-cut. All but two of the reported relations for reward power have been negative or nonsignificant. However, the only two studies that used Likert-type scales (Bachman et al., 1968; Busch, 1980) obtained the two positive results. Similarly, the majority of the legitimate power-supervisory satisfaction relations reported to date are negative or nonsignificant. However, the two Likert-scale studies reported only positive

or nonsignificant results. Thus, it seems safe to draw conclusions about the relations between coercive, expert, and referent power and supervisory satisfaction, but not about reward and legitimate power. Scale format effects may, in fact, produce distorted results.

#### *Job and Other Satisfaction*

Eight of the studies shown in Table 2 examined relations between various nonsupervisory satisfactions and the five French and Raven (1959) power bases. Job-satisfaction relations were explored by Bachman (1968), Slocum (1970), Burke and Wilcox (1971), Cope (1972), Dunne, Stahl, and Melhart (1978), and Martin and Hunt (1980). Overall organizational satisfaction relations were examined by Bachman et al. (1968; Sample 5), Slocum (1970), and Burke and Wilcox (1971). Finally, Ivancevich (1970) examined relations for satisfaction with freedom and pay, and Burke and Wilcox (1971) studied climate for growth and helping relations. Only one of these studies (Martin & Hunt, 1980) used a nonranking scale format to measure the five bases of power.

In general, the results presented in Table 2 show that reward power is not significantly correlated with nonsupervisory satisfactions (20 of the 25 correlations are nonsignificant), although Bachman (1968) obtained some (2) negative relations, and Ivancevich (1970) obtained a few (3) positive ones. A similar trend exists for legitimate power, where most (21 of 25) relations are nonsignificant, and there is one negative (Burke & Wilcox, 1971) and three positive (Cope, 1972; Ivancevich, 1970; Martin & Hunt, 1980) relations among four studies.

The obtained relations turn a bit more pronounced for coercive and referent power. For coercive power, most of the obtained relations (18 of 25) are nonsignificant, but one positive and some (6) negative relations were found in two studies (Burke & Wilcox, 1971; Slocum, 1970). For referent power, most (18 of 25) of the relations were nonsignificant, but some (7) were positive in four different studies (Burke & Wilcox, 1971;

*(text continues on page 399)*

Table 2  
Results of Cross-Sectional Field Studies Relating Bases of Social Influence to Various Subordinate Criterion Variables

Study	Sample	Scales used	Criterion variables	Results and rank of importance					
				Reward	Coercive	Legitimate	Expert	Referent	
Bachman et al. (1966)	656 salespeople from 36 branch officers of a company selling intangibles	Bachman et al.'s (1966) 1-item scales (ranked)	Office level						
			Performance	-.55**	-.31	-.17	.36**	.40**	
			Managerial satisfaction	-.51**	-.71**	-.57**	.69**	.75**	
			"Isolated" office level <sup>a</sup>						
			Performance	-.12**	-.09**	-.08	.13**	.09*	
Rank of importance			Manager satisfaction	-.16**	-.19**	-.24**	.17**	.22**	
				5	4	1	2	3	
Bachman (1968)	685 full-time faculty members from 12 liberal arts colleges	Bachman et al.'s (1966) 1-item scales (ranked)	College level						
			(dean's power) <sup>b</sup>						
			Salary nec. to leave	-.31	-.44	-.24	.38	.46	
			Job satisfaction	-.61*	-.57	-.27	.56	.57	
			Dean satisfaction	-.80**	-.70**	-.52	.75**	.67*	
			Individual level						
			(dean's power) <sup>b</sup>						
Salary nec. to leave	-.07	-.08	-.05	.05	.09*				
Job satisfaction	-.09*	-.06	-.06	.05	.08				
Dean satisfaction	-.31**	-.20**	-.18**	.18**	.22**				
Rank of importance (dean's power <sup>b</sup> )				4	5	2	1	3	
Bachman et al. (1968)	1. Results reported in Bachman et al. (1966)	Bachman et al.'s (1966) 1-item scales (ranked)	College level						
			(faculty power) <sup>c</sup>						
			Salary nec. to leave	-.40	-.05	-.16	.44	.23	
			Job satisfaction	-.75**	-.24	.42	.61*	.11	
			Dean satisfaction	-.75**	-.71**	.47	.62*	.39	
			Individual level						
			(faculty power) <sup>c</sup>						
Salary nec. to leave	-.07	.01	-.04	.08	.04				
Job satisfaction	.10	-.03	.09	.08	.00				
Dean satisfaction	-.28**	-.22**	.20**	.22**	.10*				
Rank of importance (faculty power <sup>c</sup> )				5	4	1	2	3	



Table 2 (continued)

Study	Sample	Scales used	Criterion variables	Results and rank of importance					
				Reward	Coercive	Legitimate	Expert	Referent	
2. Results reported in Bachman (1968)	860 insurance agents from 40 regional insurance offices	Bachman et al.'s (1966) 1-item scales (ranked)	Performance	.54**	.03	.26	.48**	-.19	
			Supervisory satisfaction	.48**	-.52**	.04	.88**	.43*	
			Performance	.21	.08	.06	.22	.31**	
			Supervisory satisfaction	.27	.01	.40*	.67**	.57**	
			Overall satisfaction	-.12	-.23	-.35	.30	.11	
3. Rank of importance Student (1968)	486 hourly employees and 39 first-line supervisors from a manufacturer of major home appliances	Student's (1968) 1-item scales (ranked)	Accidents	-.03	-.16	-.20	-.28*	-.12	
			Excused absences	-.18	.16	-.12	-.28*	-.35*	
			Unexcused absences	.18	.02	-.08	.02	-.02	
			Turnover	.14	.08	.01	-.01	.23	
			Indirect cost performance	.15	.22	.00	.10	.40**	
			Maintenance cost performance	-.20	-.30*	.10	.18	.00	
			Supply cost performance	.31*	.08	.08	.32*	.21	
			Scrap cost performance	.26	.12	.06	.13	.33*	
			Performance vs. schedule	-.06	.04	-.05	-.21	-.05	
			Quality	.13	-.08	.11	.31*	.32*	
			Average earnings	-.40*	-.22	.05	.01	.00	
			Suggestions submitted	.09	-.40**	.10	.14	.36*	
			Rank of importance			3	5	1	2

(table continued)

Table 2 (continued)

Study	Sample	Scales used	Criterion variables	Results and rank of importance						
				Reward	Coercive	Legitimate	Expert	Referent		
Warren (1968)	528 teachers in 18 elementary schools	One to three questionnaire items generated to assess each base of power	Total conformity	.36*	.34*	.37	.26	.75*		
			Behavioral conformity	.34*	.66*	.02	-.15	.14		
			Attitudinal conformity	.31	.15	.51*	.40*	.72*		
			Attitude socialization	.26	.11	.22	.02	.64		
Wieland (1969)	687 full-time faculty members from 12 liberal arts colleges	Bachman et al.'s (1966) 1-item scales (ranked)	Goal clarity (dean's power) <sup>b</sup>	-.78**	-.78**	-.56**	.77**	.78**		
			Goal clarity (faculty power) <sup>c</sup>	-.68**	-.64**	.44	.56*	.32		
Ivancevich (1970)	224 life insurance agents from 34 agencies	Student's (1968) 1-item scales (ranked)	Status satisfaction (agency level)	.39**	-.21	-.12	.69**	.72*		
			Autonomy satisfaction (agency level)	.28**	-.10	.38**	.63*	.71*		
			Growth satisfaction (agency level)	.32**	.11	.17	.72*	.68*		
				4	5	1	2	3		
Ivancevich & Donnelly (1970)	394 salesmen from 31 sales branches of a food products firm	Modified version of Bachman et al.'s (1966) 1-item scales (ranked)	Excused absences	-.19	-.04	-.16	-.29*	-.29*		
			Unexcused absences	.10	.11	.04	-.14	-.22*		
			Turnover	-.07	.02	.06	.04	.01		
			Market potential ratio	-.09	.14	.11	.21*	.25*		
			Number and size of orders	.11	.08	.07	-.02	.19		
			Efficiency rating	.23*	-.12	-.16	.16	.21*		
			Direct selling costs	-.04	.19	.13	.22*	.10		
			Route density factor	.12	.18	.01	.09	.31*		
	3	5	2	1	4					
Slocum (1970)	96 professional and scientific employees in a Pennsylvania steel mill	Combination of Bachman et al.'s (1966) and Student's (1968) 1-item scales (ranked)	Cosmopolitans (N = 35)	-.52*	-.31*	.07	.57*	.30*		
			Performance	.04	-.34*	.19	.41**	-.21		
			Job satisfaction	.17	-.23	.03	.32*	-.12		
			Freedom satisfaction							
			Supervisory satisfaction	.02	-.08	-.37*	.45**	.30*		
			Organization satisfaction	.14	-.10	-.02	-.08	.07		
Pay satisfaction	.13	.06	-.01	-.08	-.09					

Table 2 (continued)

Study	Sample	Scales used	Criterion variables	Results and rank of importance						
				Reward	Coercive	Legitimate	Expert	Referent		
Rank of importance	Locals (N = 61)		Performance Job satisfaction Freedom satisfaction Supervisory satisfaction Organization satisfaction Pay satisfaction	4	5	2	1	3		
				-.41**	-.23*	-.12	.22*	.23*		
				.12	-.31**	.13	.20	.15		
				.07	-.08	.13	.20	.15		
				-.04	.01	-.32**	.36**	.24*		
				.04	-.01	.14	.19	-.13		
				.15	.11	.01	.09	.17		
Rank of importance	Burke & Wilcox (1971)	Modified version of Bachman et al.'s (1966) 1-item scales (ranked)	Organization satisfaction Job satisfaction Supervisory satisfaction Climate for growth Helping relationship	4	5	2	1	3		
				-.04	-.32**	.03	.32**	.08		
				-.10	-.31**	.01	.36**	.09		
				-.08	-.43**	-.06	.45**	.17**		
				-.14	-.54**	-.14	.45**	.38**		
				-.14	-.51**	-.19**	.47**	.37**		
Rank of importance	Cope (1972)	Bachman et al.'s (1966) 1-item scales (ranked)	Cosmopolitans (N = 34) Job satisfaction Locals (N = 37) Job satisfaction Degree of support Willingness to disagree Project involvement Performance rating	5	3	2	1	4		
				-.10	-.36*	.11	.33*	.01		
				-.16	-.18	.41*	.13	.29		
				-.20	-.45**	-.10	.15	.00		
				-.10	.00	-.20	.30*	.00		
				-.15	.00	-.35**	.00	.00		
				-.15	-.02	-.30*	.40**	.17		
Rank of importance	Dunne et al. (1978)	Modified version of Thamhain & Gemmill's (1974) 1-item scales (ranked)	Project manager Degree of support Willingness to disagree	3	5	1	2	4		
				-.04	-.15	.18	.63**	.26		
				.10	.06	.00	.28**	.15		

(table continued)

Table 2 (continued)

Study	Sample	Scales used	Criterion variables	Results and rank of importance					Referent
				Reward	Coercive	Legitimate	Expert	Referent	
Rank of importance	system program offices in the U.S. Air Force	Gemmill's (1974) 1-item scales (ranked in interview)	Work involvement	.13	-.16	.07	.18	.06	
			Job satisfaction	.00	-.09	.05	.21	.29*	
Rank of importance	Functional manager	Degree of support	5	4	3	1	2		
			Willingness to disagree	-.15	-.11	.03	.43**	.20	
			Work involvement	.20	-.01	-.14	.20	.16	
			Job satisfaction	.08	.10	.06	.25	.01	
			3	5	1	2	4		
Rank of importance	227 skilled tradespeople in the construction industry	Student's (1968) 1-item scales	Relative wage rate	-.41*	-.33	.69**	.20	-.43*	
			Union density (% organized)	-.40	-.31	.27	-.48*	-.35	
Hammer (1978)	216 nurses and nurse's aides	Bachman et al.'s (1966) 1-item scales (forced choice paired comparison)	Job tension	-.12	34**	.11	-.21**	-.09	
			Performance	-.09	-.24**	.02	.12	.17*	
			Terminations	-.01	.12	.01	-.04	-.08	
Sheridan & Vredenburg (1978)	415 salespersons from three pharmaceutical companies	Modified version of Bachman et al.'s (1966) 1-item scales (Likert format)	Company 1 (N = 159)						
			Supervisory satisfaction	.03	-.22**	.08	.69**	.58**	
			Role clarity	-.11	-.05	.11	.46**	.24**	
			Propensity to leave	.08	.03	-.16*	-.31**	-.25**	
			Company 2 (N = 128)						
			Supervisory satisfaction	-.01	-.03	-.05	.48**	.50**	
Busch (1980)	216 nurses and nurse's aides	Student's (1968) 1-item scales	Role clarity	.08	-.01	.25**	.02	.24**	
			Propensity to leave	-.10	.01	-.14	-.35**	-.19*	
			Company 3 (N = 128)						
Supervisory satisfaction	.22**	-.21**	.25*	.58**	.45**				
Role clarity	-.05	-.13*	.15*	.21**	.12				
Propensity to leave	-.11	.02	-.05	-.17**	-.09				

Table 2 (continued)

Study	Sample	Scales used	Criterion variables	Results and rank of importance				
				Reward	Coercive	Legitimate	Expert	Referent
Cobb (1980)	77 employees in four public and quasipublic organizations	Modified versions of Student's (1968) 1-item scales (Likert format)	Informal upward influence	.37**	.01	.68**	.28*	.11
			Informal lateral influence	.49**	-.16	.65**	.43**	.25*
Martin & Hunt (1980)	239 construction and 80 design personnel in a midwestern state highway department	Student's (1968) 1-item scales (Likert format)	Construction bureau	.10	-.11	.01	.19*	.16*
			Job satisfaction	.04	.13	-.06	-.09	-.08
			Intent to leave	.01	-.04	.18*	.36*	-.03
			Design bureau	.11	.11	-.13	.14	-.03

<sup>a</sup> These analyses were performed by correlating office-level power scores with individual-level outcome scores, partialing out individual office variables.

<sup>b</sup> Dean's power refers to faculty descriptions of why they comply with their dean's requests.

<sup>c</sup> Faculty power refers to faculty descriptions of why their dean complies with their requests.

\*  $p < .05$ . \*\*  $p < .01$ .

Dunne et al., 1978; Ivancevich, 1970; Martin & Hunt, 1980). Finally, the results became about evenly divided between nonsignificant (11 of 25) and positive (14 of 25) for expert power; all but one study (Bachman et al., 1968; Sample 5) reported at least one positive correlation.

*Behavioral and Attitudinal Withdrawal and Commitment*

*Withdrawal behavior.* Student (1968) and Ivancevich and Donnelly (1970) explored relations among the five power bases and absence and turnover of subordinates using rank-order scales. Student (1968) found no relations among the five power bases and between unexcused absences and turnover. However, expert and referent power were negatively correlated with excused absences for his sample of production workers. These results were replicated exactly by Ivancevich and Donnelly (1970) for the same three dependent variables and a sample of salespeople, except that a negative correlation was also found between unexcused absences and referent power. These results, then, suggest that expert and referent power may be negatively associated with employee withdrawal behaviors, and that the three other power bases seem generally unrelated.

*Withdrawal attitudes and intent.* Three studies (Bachman, 1968; Busch, 1980; Martin & Hunt, 1980) explored relations between the five bases of power and employee withdrawal attitudes and intent to leave their organizations. Bachman (1968) and Martin and Hunt (1980) obtained largely nonsignificant results, suggesting a lack of relations between power bases and withdrawal attitudes and intent. Busch (1980), however, reported some significant relations, using Likert-format scales in his study of three companies. Legitimate power had a negative relation with intent to leave the organization in one company, referent power had a negative relation in two companies, and expert power had negative relations in all three companies. Overall, these results seem to suggest that reward, coercive, and legitimate power are generally unrelated to withdrawal attitudes and intent, but that referent and expert power sometimes are negatively related.

*Support of supervisor and work commitment.* Thambain and Gemmill (1974) and Dunne et al. (1978) examined relations between managers' influence methods and the same three dependent variables: the degree of support the managers received from their subordinates, the degree to which the subordinates were willing to disagree with the managers, and the degree to which the subordinates felt involved in their jobs and work projects. Both used rank-order scales and obtained similar results. Only expert power had moderately consistent (positive) relations with the three criterion variables. Reward, coercive, legitimate and referent power were either totally or largely unrelated.

### *Conformity and Influence*

Warren (1968) examined relations between the five French and Raven bases of power and subordinate conformity and attitude socialization, whereas Cobb (1980) studied French and Raven's bases of power in relation to informal upward and lateral influence. Overall, the results of these two studies suggest that reward, legitimate, expert, and referent power have generally positive relations with conformity and influence, and that coercive power has no relations with lateral or upward influence but a positive association with conformity in general. Additionally, none of the five power bases seem to have significant negative relations with conformity and influence; this is something one would expect, given that power is an influence process aimed at obtaining conformity on the part of one or more others.

### *Goal and Role Clarity*

Using rank-order scales, Wieland (1969) examined relations between social power bases and goal clarity. He found that a dean's use of reward, coercive, and legitimate power was negatively related to faculty members' perceptions of goal clarity, whereas expert and referent power were positively related. Additionally, faculty use of reward and coercive power was negatively related to goal clarity, whereas expert power was positively related.

If one assumes that goal clarity is a sub-component of role clarity, then Busch (1980), using Likert-type scales, obtained somewhat conflicting results. Reward power was nonsignificantly related to role clarity in all three companies examined, and legitimate power had positive relations in two companies. However, the results for coercive, expert, and referent power did not depart markedly from those of Wieland (1969).

Overall, these results thus suggest that expert and referent power may be generally associated with task-related clarity for subordinates, and that legitimate power appears to be either negatively related or unrelated. The results for reward and legitimate power, however, are not so clear, because scale format effects (or other study differences) may have affected these studies' results. In the case of reward power, it seems safe to say that the results suggest a negative or nonsignificant relation with subordinate task-related clarity, but no such statement can be made for legitimate power (with positive, negative, and nonsignificant relations obtained).

### *Miscellaneous Criterion Variables*

Sheridan and Vredenburg (1978) examined relations between the five bases of power and job tension. Coercive power was positively associated with tension, and expert power was negatively related. Neither reward, legitimate, or referent power obtained significant correlations.

Hammer (1978) assessed relations between supervisory use of power and local construction union strength. Union strength was measured by two indexes: (a) the relative wage rate of a local union compared with other unions, and (b) the percentage of construction workers in each local's geographical area who belonged to the union. Reward and referent power were negatively related to relative wage rate, whereas legitimate power was positively related. Only expert power was found to be related to union density (negatively).

### *Power Base Importance for Subordinate Compliance*

Before summarizing all of the research results presented previously and in Table 2,

it seems worthwhile briefly to note again that many of these studies asked subordinates to rank order the five power bases according to which was most important (1) and which was least important (5) in securing their compliance or cooperation with requests from their supervisors. The results of these studies, reported across 10 studies and 12 samples or subsamples, were all markedly consistent.

All of the studies produced rankings of 1 or 2 for both legitimate and expert power, except for the Dunne et al. (1978) project manager subsample, which produced a ranking of 3 for legitimate power (yielding mean rankings of 1.5 and 1.6 for expert and legitimate power, respectively). Referent power received rankings of 3 and 4, except for the Dunne et al. (1978) project manager sample where a rank of 2 was obtained (mean rank for referent power across the 12 samples/subsamples was 3.3). Finally, reward power received an equal number of rankings of 3, 4, and 5 (producing an overall mean ranking of 4.0), whereas coercive power received eight rankings of 5, three of 4, and one of 3 (yielding a mean ranking of 4.6). Thus, these results clearly show that subordinates consistently report that expert and legitimate power are the strongest reasons for their complying with supervisory requests, that referent power is intermediate as a reason, that reward power is a relatively weak reason, and that coercive power is the least important reason why they report complying with supervisory requests.

### *Summary of Empirical Findings*

Overall, the field studies of social power discussed previously and summarized in Table 2 appear to have yielded fairly consistent findings. In general, the results seem to suggest that expert and referent power are generally positively related to functional subordinate criterion variables (e.g., subordinate performance, satisfaction with supervision, job satisfaction) or, at the least, are unrelated. However, reward, coercive, and legitimate power are generally negatively related, or are unrelated, to these same criterion variables. There are, however, several problems with these studies, one of which has been mentioned

several times (possible scale format effects), making the drawing of any firm conclusions highly questionable. These problems—along with a reanalysis of these studies, which produces some very different conclusions—are considered in the following section.

## Critique and Reanalysis of the Literature

### *Domain Sampling Adequacy*

One problem with the literature previously summarized should be apparent from our earlier discussion concerning the content validity of the various scales that have been used to operationalize French and Raven's (1959) bases of power. As noted earlier, virtually all of these scales use very narrow operationalizations of theoretically broad concepts, and several items on some of the scales seem to imply extraneous content or be unnecessarily vague and open to different interpretations by different respondents. This, of course, raises the question of whether these studies speak directly to the French and Raven conceptualizations, and it must be noted that improved measurement is clearly needed if we are able to say anything with confidence concerning the impact of the five power bases on subordinate outcome variables.

A second and related problem with the social power scales reported in Table 1 and used in the studies of Table 2 is that the majority are composed of one item each. The problems raised by the use of single-item scales are numerous and have been duly noted by many researchers (cf. Churchill, 1979; Cobb, 1980; Jacoby, 1978; Nunnally, 1978; Peter, 1979; Ryan & Bonfield, 1975). First, the use of one-item scales generally assumes that (a) the single item used to measure a construct is its best operationalization, (b) the construct to be measured is factorially simple (i.e., not complex), and (c) all of the respondents interpret the item in the same manner. All of these assumptions appear quite tenuous in the current context, particularly because of the ambiguity that exists in some of the items and because the operationalizations seem too narrow when

compared with the original descriptions provided by French and Raven (1959). This conclusion is also supported by a number of factor-analytic studies of leader reward and punishment behaviors (e.g., Podsakoff et al., 1984; Reitz, 1971; Sims, 1977), which suggest that reward and coercive power are not unidimensional (see Podsakoff & Schriesheim, 1984, for a review). Second, it is not possible to assess the internal consistency reliability of single-item scales. However, such measures are generally considered unreliable because they do not permit measurement errors to cancel out against each other (cf. Peter, 1979; Ryan & Bonfield, 1975). Because Schwab (1980) and others noted that estimates of internal consistency are a necessary prerequisite for establishing the empirical construct validity of a measure, the inability to obtain these estimates is especially troublesome. Finally, Nunnally (1978) noted that a lack of reliability in measurement may attenuate or obscure relations between variables. This suggests that the use of one-item scales may have lessened the obtained relations between the five measures of social power and the various subordinate criterion variables. Formulas designed to permit corrections for unreliability attenuation do, of course, exist (cf. Nunnally, 1978, pp. 219–220). Unfortunately, however, the application of these formulas is often questionable (Nunnally, 1978), and in any case these formulas require estimates of scale reliabilities before they can be used.

### *Response Bias Potential*

Another problem with the measures used in the studies summarized previously is that no attempt has been made to assess the role that social desirability or attribution bias might play in respondents' replies to these scales. Crowne and Marlowe (1964) described social desirability biases as the result of "a need for social approval and acceptance by means of culturally acceptable and appropriate behaviors" (p. 109). Recently, several authors (e.g., Arnold & Feldman, 1981; Edwards, 1970; Ganster, Hennessey, & Luthans, 1983; Schriesheim & Kerr, 1974, 1977; Tho-

mas & Kilmann, 1975) noted that in the same way an individual's needs for social approval and acceptance may elicit idealized self-descriptions, these needs may also bias a respondent's answers to other items that are perceived as having more or less social desirability. This concern would appear to be particularly relevant in the case of the power operationalizations shown in Table 1. It appears logical that most respondents would not readily admit that they do what their supervisor requests primarily because they receive more bribes or payoffs or are able to avoid being punished. Such responses would probably not be seen as very socially desirable. Alternatively, it appears logical for respondents to say that they comply with their supervisor's requests because the supervisor is an expert, is competent, or is a nice person. Such responses would be viewed as socially desirable because, in large part, they make it appear as though the respondent is rational and ethical and responds to others under norms of reciprocity. These social desirability expectations are fully met by the importance rankings discussed earlier and summarized in Table 2. As mentioned, legitimate and expert power were consistently ranked as the most important power sources (reasons subordinates gave for complying with their supervisors' requests) in the 10 studies and 12 samples/subsamples that presented such information. Reward and coercive power, in contrast, were consistently ranked least important.

The problem with the power measures' susceptibility to social desirability response bias is further magnified by the fact that many of the criterion measures used in these studies (e.g., satisfaction) may also be affected by this bias. (It is more socially acceptable to describe oneself as "satisfied" than as "dissatisfied.") Thus, spurious power-outcome correlations may be generated by social desirability for some dependent variables. Also, as Yukl (1981) suggested, it is possible that respondents who are more satisfied are also more likely to attribute their satisfaction to the use of "socially desirable" power bases by their supervisors, resulting in spurious relations due to attributional biases.



### *Inappropriate Measurement Referent*

It was mentioned earlier, but not dwelt upon, that all of the extant measures of the five French and Raven power bases ask respondents to describe (by ranking or rating) why they comply with requests from their supervisors. These instructions thus cause respondents to use an attributional referent (why I comply) in completing such measures, rather than a behavioral referent (how my supervisor acts). Such a procedure might enhance the social desirability effects previously suggested. In any event, it makes the interpretation of data collected by it difficult. Such data are usually interpreted as though they were subordinate perceptions of supervisory behavior, but clearly they are not. We are unsure of how such data are best interpreted, and this is clearly not a satisfactory situation. In any event, such a description referent makes the use of compliance-related dependent variables redundant. Other attitudinal dependent variables (such as satisfaction with supervision) may also be, at least partly, redundant with such attributionally anchored measures.

### *Data-Analytic Shortcomings*

A further problem with drawing inferences from the results reported in Table 2 is that the majority of these studies used grouped scores to analyze the relations between social power and subordinate criterion variables. In this form of analysis, the scores of the subordinates of each supervisor are added together and then divided by the number of individuals who comprise the group or unit. Several researchers (cf. Dansereau, Alutto, Markham, & Dumas, 1982; Dansereau & Dumas, 1977) noted that the use of this technique assumes that the leader responds to all subordinates in a similar manner, which is a highly tenuous assumption. Moreover, another problem with this averaging process is that it may actually serve to mask or wash out important relations that do exist. Averaging is also questionable, due to the nature of some of the dependent variables used in

some of the studies (e.g., job satisfaction), because the conceptual interpretation of such averaged measures is unclear at best. Finally, averaging is particularly unsound when rank-order data are involved, and such averaging may be methodologically indefensible (Nunnally, 1978).

Another data-analytic problem encountered in attempting to interpret the results of the extant field studies of French and Raven's (1959) conceptualizations of social power deals with the fact that, in general, no attempts have been made in these studies to determine the independent contribution of each power base on subordinate criterion variables. Reitz (1971), Collins and Raven (1969), Bass (1981), Yukl (1981), Shetty (1978), and others noted that many of the bases of power identified by French and Raven may not be perceived as totally independent of each other and, may, in fact, be related. For example:

Personal power sources like referent and expert are likely to be correlated empirically, that is, lodged in the same people. In the same way, the position holder with power to reward is also likely to have the power to punish. The position will give some degree of legitimacy as well. By definition, formal hierarchies are a structure of legitimate, reward, and coercive power relationships. (Bass, 1981, p. 178)

Similarly, a leader who possesses referent power may also be seen as possessing expert power, because we are attracted to the leader and attribute expertise to those individuals we like. As a result of these and other possible interdependencies, it is impossible to draw any conclusions about the independent effects of each of the five power bases, because none of the studies reported in Table 2 attempted to partial out the effects of any of the other power bases when one particular power base was under examination. This simply means that all of the obtained research results reported to date may be confounded by interdependencies among the five power bases; we may know nothing about their independent effects.

The previous discussion should not be taken to indicate that only the independent effects of social power need to be examined

more carefully. Joint power effects have also been neglected in French and Raven field studies, and these would appear to be of some importance. For example, in a laboratory setting Michener and Burt (1975) found that compliance of group members was greater when the leader had both coercive and legitimate power. Bass (1981), summarizing research on interactive coercive and legitimate power effects, noted that "legitimacy coupled with coercion will increase the public and private acceptance of coercive demands" (p. 184). Similar joint effects might be expected between a number of the French and Raven bases of power, and future researchers would be well advised to explore such possible effects.

#### *Scale Format Effects and Reanalysis of the Literature*

The final problem apparent with the literature previously summarized (and the problem most amenable to post hoc treatment) involves the response formats used to measure the bases of social power. As shown in Table 2, the majority of studies conducted to date have used a ranking procedure to assess the supervisors' bases of power. In this procedure, respondents are asked to rank order the reasons why they comply with the requests of their supervisors. One interesting aspect of this ranking procedure is that it produces ipsative measures that are not independent of each other (Guilford, 1954). Any single base of power can only be given prominence at the expense of the other bases. As a result, the ranking procedure tends to force negative empirical relations among the power bases, and this precludes interpreting results straightforwardly. The ranking procedure also tends to force the lower ranked power bases to be related to the criterion variables in the opposite direction of the higher ranked power bases. This problem has been acknowledged by several researchers, including Bachman et al. (1966), who noted that:

Some caution must be exercised in interpreting correlations with the bases of power. The ranking method used in obtaining the data makes it *impossible* [italics added] for all five bases of power to be correlated in the same direction with any single criterion variable. Thus, it may be that positive correlations with expert and referent

power are responsible for negative correlations with the other bases of power. (p. 133)

Surprisingly, despite the fact that other authors (cf. Alderfer, 1972; Bachman, 1968; Bachman et al., 1968; Beer, 1966) provided similar cautions about the use of rank-order scales, the fact that this procedure was used in so many of the studies previously reviewed suggests that these warnings have largely gone unheeded.

It was noted earlier that results from Likert-type scale measures have differed markedly from those obtained from rank-format scales. In an attempt to explore possible scale format effects more systematically, the results of all studies that used rank-order scales were compared with those that used Likert-scales to measure the five bases of power. This analysis was conducted by comparing the number of results that indicated positive, negative, and nonsignificant relations between each of the bases of social power and subordinate criterion variables, for the ranked and Likert-scale studies separately. The studies considered to have used the ranking technique were those conducted by Bachman (1968), Bachman et al. (1968; Sample 5), Bachman et al. (1966), Burke and Wilcox (1971), Cope (1972), Dunne et al. (1978), Ivancevich (1970), Ivancevich and Donnelly (1970), Slocum (1970), Sheridan and Vredenburg (1978), Student (1968), Thamhain and Gemmill (1974), and Wieland (1969).<sup>4</sup> The studies considered to have used Likert-scale formats included those by Bachman et al. (1968;

<sup>4</sup> Ambiguities in the articles by Ivancevich (1970), Ivancevich and Donnelly (1970), and Slocum (1970) make it difficult to determine whether ranking or rating scales were used. Ivancevich and Donnelly (1970), however, explicitly indicated they had salespersons rank their managers on the bases of power (p. 544); Ivancevich (1970) presented methodology and discussion sections similar to that of Ivancevich and Donnelly, leading to the reasonable inference that he used rank order scales as well. Although Slocum (1970) indicated he had respondents rate their supervisors, his theoretical arguments about his measures (p. 486) are the same as those provided by Bachman et al. (1966) for the ranking procedure, therefore suggesting that he also used rank-order measurement. These three studies were treated as rank order studies; treating them as rating studies does not substantially alter the conclusions reached in the text or provided in Table 3.

Table 3  
*Comparison of Results From Field Studies of Social Power Using the Ranking Technique With Those Using Likert-Format Scales*

Procedure	Reward power <sup>a</sup>				Coercive power <sup>b</sup>				Legitimate power <sup>c</sup>				Expert power <sup>d</sup>				Referent power <sup>e</sup>			
	+	0	-	Total	+	0	-	Total	+	0	-	Total	+	0	-	Total	+	0	-	Total
Ranking technique	5	51	8	64	46	17	64	2	54	8	64	32	31	1	64	26	38	0	64	
Likert format	5	14	0	19	0	15	4	19	8	11	0	19	14	5	0	19	12	7	0	19

<sup>a</sup>  $\chi^2(2) = 5.61, p < .07$ . <sup>b</sup>  $\chi^2(2) = .56$ . <sup>c</sup>  $\chi^2(2) = 22.14, p < .001$ . <sup>d</sup>  $\chi^2(2) = 5.08, p < .08$ . <sup>e</sup>  $\chi^2(2) = 2.76$ .

Samples 3 and 4); Busch (1980), Cobb (1980), and Martin and Hunt (1980). Neither the Hammer (1978) nor the Warren (1968) studies were included in the analysis, because it was difficult to determine which scaling format these authors had used. Also, in our analysis, if both individual and grouped data were reported for a particular study, only the grouped data were used. This was done because using both individual and grouped results would produce redundant and non-independent data, and most of the studies reported only grouped data. Finally, because most of the studies used only measures of supervisory power (and not measures of subordinate power), only supervisory power results were considered. To maintain some consistency across the examined results, positive relations were considered not only instances in which the bases of power are positively related to functional subordinate outcomes, but also when negative relations were obtained with dysfunctional or undesirable subordinate outcomes (e.g., unexcused absences, accidents).

In our analysis, 64 variables could be related to each of the power bases for the ranked-scale studies, whereas 19 variables could be related to the power bases in the Likert-scaled studies. The results of our analysis are summarized in Table 3. As shown, although the results for coercive and referent power are similar regardless of the measurement method used, the results for reward, legitimate, and expert power are significantly influenced by the scaling procedure used. In general, these results suggest that the effects of reward, legitimate, and expert power on subordinate criterion variables are less nega-

tive or more positive than would be indicated by just the ranking studies alone (or by combining the Likert-scale and ranking studies together).

The prior analysis is admittedly crude, and it does not take into account some of the problems in and differences among the social power studies that were discussed, as well as differences in the criterion variables. It does, however, support our general concern about measurement in the study of French and Raven's (1959) bases of social power. In addition, it suggests that the studies that used a ranking procedure should be interpreted with considerable caution.

#### Future Directions and Needed Research

Over the past few decades, French and Raven's (1959) conceptualization of social power has played a major role in the literature of social and industrial psychology. Despite this, however, it is probably fair to say that given the methodological problems in most of the field studies of power, our knowledge regarding relations between the bases of social power and subordinate criterion variables is far from complete. Before such knowledge can be acquired, several improvements in research in this area are necessary. In the remainder of this article, we discuss these needed improvements in some detail.

#### Issues in Self-Report Research

Our review up to this point had indicated the need for several methodological improvements in future field research on French and Raven's five bases of power. First, if self-report questionnaires continue to be used,

additional attention must be focused on the development of more adequate measures. Much of the extant research on the bases of social power has been undertaken without much apparent concern for either the validity or reliability of the measures used. The use of single-item scales with questionable content validity and scaling procedures (and with largely unknown psychometric properties such as reliability) has severely limited our understanding of the relations between the bases of social power and subordinate criterion variables.

There is, of course, no absolute set of rules that specifies the steps one must take to develop a valid multiitem measure of a construct. Churchill (1979), however, provided an excellent description of a paradigm designed to improve construct development. Although this paradigm was originally intended to improve construct development in the field of marketing, it appears equally applicable in other content domains as well. We believe that obvious improvements in our understanding of the relations between social power and subordinate criterion variables would result if the sequence suggested by Churchill (1979) were used to develop more adequate measures of the bases of social power.

Second, and related to the prior discussion, the use of the ipsative ranking procedure to assess the bases of social power must be discouraged in future research. It is surprising to the present authors that even though Bachman and his colleagues (Bachman, 1968; Bachman et al., 1968; Bachman et al., 1966) repeatedly noted the potential problems of this scaling procedure, it has been used extensively in subsequent research. As noted, the use of this scaling procedure produces two major difficulties. First, it results in scales that are not methodologically independent of each other. Second, it tends to force negative correlations to occur between some of the measures of social power and subordinate criterion variables. These problems can be avoided in future research that uses questionnaires to measure social power through the use of Likert-type scales.

Third, and related to the two points previously noted, future scales developed and used to measure French and Raven's bases

of power should not use an attributional referent but a behavioral one. This would reduce scale potential for confounding by social desirability and attributional biases. It would also make the interpretation of results more straightforward (and less tautological). Such a measurement approach should also make scale validation easier, because the referent would be closer to an observable (it would be perceived) behavior. Experimental manipulation and measurement validation by experimental procedures (e.g., Stogdill, 1969) would therefore be more feasible. This would not eliminate the problems generated by measuring power by paper-and-pencil measures (more is said concerning this later). Instead, as it facilitates validation, it would, necessarily, reduce the severity of such problems.

Fourth, future research efforts should attempt to assess the independent contribution of each of the power bases to the variance explained in subordinate criterion variables. It is not very likely that respondents perceive the bases of social power to be totally independent. Thus, even when the ranking procedure is not used, there appears to be a need to use partial correlation or multiple regression data analyses in studies of social power.

Fifth, future research needs to concentrate at the individual rather than the group level of analysis. The minority of studies reported in this review analyzed relations between social power and subordinate criterion variables at the individual level. The majority used grouped analyses or a combination of individual and grouped analysis. As noted, averaging or grouping the data from a particular supervisor's subordinates assumes that the supervisor responds in a similar fashion or uses the same bases of power to influence each subordinate. In view of evidence that supervisors respond differently to different types of subordinate characteristics or behaviors (cf. Barrow, 1976; Lanzetta & Hannah, 1969; Lowin & Craig, 1968; Podsakoff, 1982; Taynor & Deaux, 1975), this assumption is questionable.

Averaging or grouping subordinate responses may also wash out or mask differences that actually exist. Related to this is the fact that using grouped or averaged scores reduces

the size of the sample and therefore the power of the statistical tests that may be performed. (It also violates a basic tenet that researchers should use as much of the data at their disposal as is possible.) Finally, grouped scores are influenced by outliers or group members who have extreme scores on the constructs being measured. These extreme scores may distort the nature of the relations obtained, particularly when the group is small. Because of these problems inherent to grouping scores, individual analyses appear more advisable in future tests of French and Raven's (1959) bases of social power.

### *Use of Observational Measurement*

In addition to the problems noted previously, greater attention needs to be given to other types of field research methodologies that may be used in the analysis of social power. Our preceding discussion of needed methodological improvements has focused on field studies conducted with self-report questionnaires, because the studies reported in this review used this type of research strategy exclusively. Unfortunately, this type of research has several major problems associated with it. First, recent research indicates that there are numerous biases that may influence subordinates' self-reported descriptions of their supervisors, including social desirability and leniency (Schriesheim, 1981a, 1981b; Schriesheim & Kerr, 1974, 1977; Schriesheim, Kinicki, & Schriesheim, 1979; Yukl & Nemeroff, 1979), halo effects (Schriesheim & Kerr, 1974, 1977), and implicit attitudinal or behavioral theories (Eden & Leviatan, 1975; Lord, Binning, Rush, & Thomas, 1978; Gioia & Sims, 1983; Phillips & Lord, 1981; Rush, Phillips, & Lord, 1981; Rush, Thomas, & Lord, 1977; Weiss & Adler, 1981). This makes the interpretation of findings from these studies somewhat problematic. Second, in this type of study the description of the supervisor's bases of power, as well as many of the subordinate criterion variables (e.g., supervisory satisfaction, role clarity), are often obtained from the same respondents. Thus, in addition to the possibility that the supervisor's bases of power have an effect on employee attitudes, there is the possibility that same source or general method variance accounts

for a substantial proportion of the obtained relations between these bases of power and subordinate criterion variables.

Recognition of these problems suggests the need for other field research strategies that are not as susceptible to respondent biases as self-report measures. Among the strategies that appear to be the most promising is the use of observational procedures (Davis & Luthans, 1979; Yukl, 1981). Several recent studies have been reported in which the observation of supervisors in organizations has taken place (e.g., Alban-Metcalfe, 1984; Bussom, Larson, & Vicars, 1982; Bussom, Larson, Vicars, & Ness, 1981; Larson, Bussom, & Vicars, 1981; Luthans & Lockwood, 1984; Martinko & Gardner, 1984; Mintzberg, 1973). Although the studies differ somewhat in focus, most share in common (a) the direct observation of supervisors in their natural work environments and (b) the recording of the supervisors' behaviors, either through empirically derived categories or a narrative description of the behaviors observed.

An examination of the studies that have used some form of behavioral observation suggests that there are several advantages that may be obtained from the use of these types of methods in research on social power. First, observational studies conducted in organizations permit the researcher to observe the supervisor *in situ* and therefore see behaviors that might not otherwise be picked up in the questionnaires generally used to assess a supervisor's social power. In short, behavioral observation involves directly observing managers, rather than using indirect measures of behaviors that are believed or expected to be relevant and displayed. Additionally, observational studies may allow the examination of more intense or extreme levels of social power than can be examined in the usual content-limited surveys that are typically used. Also, observational research is not as likely to impose the researcher's theories and conceptualizations on the subjects as are self-report questionnaires (cf. Bussom et al., 1981; Larson et al., 1981; Luthans & Lockwood, 1984). Thus, the data obtained from such studies is often richer and more isomorphic with the phenomenon under investigation. This is because observation can assess variables beyond those that may be included on

even the largest questionnaire, and because observation may not artificially restrict the measured intensity levels of the variables under investigation.

Recent research by Luthans and Lockwood (1984) also suggests that greater validity may be obtained with observational procedures than with more traditional paper-and-pencil questionnaires. Finally, because the lag time between the observation of behavior and its actual recording is shorter than that which occurs in questionnaires, observational procedures may be less susceptible to selective recall and halo biases than are self-report measures (cf. Luthans & Lockwood, 1984).

Lest we be misunderstood, it bears noting that the use of observational strategies to study power is not without its problems (for reviews of such problems, see Bussom et al., 1982; Bussom et al., 1981; Martinko & Gardner, 1984). Such an approach also does not preclude the use of self-report questionnaires. Indeed, as noted by Luthans and Lockwood (1984), questionnaires and observational methods should be used to complement, not replace, each other:

An obvious need for future study would be to make a comparison between questionnaire and observation methods that have directly comparable categories. If there is demonstrated support for . . . validity . . . then the more practical and easy-to-use questionnaire method should be used as an important, but not an *only*, data-gathering technique . . . The same is true of the observational system. By using both questionnaires and observational techniques, a network of concordance among multiple methods of measurement can result. Such a multiple-methods approach seems to be the most feasible way of obtaining a reliable and valid measure of extremely complex . . . behavior. (Luthans & Lockwood, 1984, p. 141)

Thus, the use of questionnaires and observational studies in a complementary manner is likely to have a greater impact on our understanding of social power processes than either technique used to the exclusion of the other.

#### *Other Concerns*

In addition to the issues previously discussed, there are at least four other concerns that need to be addressed in future research in the area of social power. First, additional attention needs to be paid to the relevance of the criterion variables used in social power studies. For example, Yukl (1981) noted that a supervisor's use of social power should be

expected to have its most direct effect on subordinates' attitudinal commitment and behavioral compliance, and it should influence only subordinate performance and satisfaction indirectly through these linkages. Despite this, subordinate compliance and commitment have been incorporated in only a few of the studies reported in the present review.

Second, more attention also needs to be directed to the samples used in future power studies. Despite the fact that the characteristics of the samples used in much of the power research vary considerably, there has been relatively little consideration of the effects that these sample differences might have on the types of power available for the supervisors to use. For example, supervisors in civil service or government agencies may have to depend primarily on their legitimate power or referent power because the use of reward or coercive power may be blocked, and because the supervisor may have appointees with more specific expertise. In contrast, the same type of job in a private, profit-making organization may offer the supervisor several types of power bases. Clearly, supervisors faced with the two different situations previously described might be expected to behave quite differently and, as a result, may have substantially different effects on subordinate outcome variables. Yet, we have surprisingly little research on the effects that sample differences might produce.

Third, we should note that, with the exception of a few longitudinal criterion variables (e.g., turnover), none of the field studies summarized in this review allow researchers even to tentatively suggest cause and effect relations. Thus, without belaboring the point, it seems obvious that future field research should begin to address issues of causality, by conducting longitudinal and field-experimental studies.

Finally, we should note that virtually all of the research summarized herein did not attempt to develop or test theory concerning social power, but was directed at correlating the five French and Raven power bases with various dependent variables. Moderator variables, situational contingencies, and so on were hardly mentioned, much less conceptually treated and empirically explored. Although the focus of this article has not been

in the theory domain, it seems worthwhile to note that theory development appears to be critically necessary to guide and integrate future research.

### Conclusion

The purpose of this article has not been to attack studies of French and Raven's (1959) bases of social power or to imply that additional studies of social power are not needed. On the contrary. On the basis of this review, it might be argued that an adequate examination of the French and Raven (1959) conceptualization has yet to be conducted, and that much more research is badly needed in this domain. Although the French and Raven framework remains highly popular, the existing research does not support drawing confident conclusions about such things as relations between the five power bases and subordinate outcome variables. This situation is unacceptable, and it warrants and demands immediate attention to address the problems noted in this review.

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### Correction to Snarey

In the article "Cross-Cultural Universality of Social-Moral Development: A Critical Review of Kohlbergian Research," by John R. Snarey (*Psychological Bulletin*, 1985, Vol. 97, No. 2, pp. 202-232), the subheadings in Table 5 are incorrect and should be reversed. The first subheading should read "Countries for Which Studies Did Not Report Significant Differences," and the second subheading should read "Countries for Which Studies Did Report Statistically Significant Differences."

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