FIGHT THE POWER: COMPARING AND EVALUATING TWO MEASURES OF FRENCH AND RAVEN'S (1959) BASES OF SOCIAL POWER

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ABSTRACT

Social power, or potential for social influence, has traditionally been conceptualized according to French and Raven's (1959) power typology. The purpose of this analysis was to examine the relationship between a commonly used scale measuring the original 5-factor model and a more recently developed scale measuring the revised 11-factor model, and evaluate the predictive utility of each. Correlations between corresponding bases on the two scales were weak, suggesting a lack of convergent validity. In addition, the 5-factor scale accounted for a substantially greater proportion of variance than did the 11-factor scale when predicting global power.

INTRODUCTION

Over the past several decades, the processes of social power and influence have held a prominent place in psychological theories, particularly in the areas of social and industrial/organizational psychology (Podsakoff and Schriesheim 1985). Social power refers to the latent potential of a person or group (the *agent*) to influence the beliefs, attitudes, or behaviour of another person or group (the *target*; Raven 1965). Power is unobservable and can only be measured in an abstract sense; nevertheless, its acquisition and maintenance is considered a crucial process in organizations (Hinkin and Schriesheim 1994), since it appears to be closely related to variables such as job satisfaction, role performance, and conflict (Drea, Bruner, and Hensel 1993).

Although many models of social power have been proposed, French and Raven's (1959) typology has been among the most influential and widely used (Podsakoff and Schrieshiem 1985). French and Raven's (1959) typology originally consisted of five bases of power: reward power, coercive power, legitimate power, expert power, and referent power. Hinkin and Schriesheim (1989:562) define reward power as "the ability to administer to another things he or she desires or to remove or decrease things he or she does not desire"; coercive power as "the ability to administer to another things he or she does not desire or to remove or decrease things he or she does desire"; legitimate power as "the ability to administer to another feelings of obligation or responsibility"; and expert power as "the ability to administer to another information, knowledge, or expertise". Finally, referent power can be defined as the ability to make the target feel attraction to or identification with the agent (Carson, Carson, and Roe 1993). In 1965, Raven differentiated informational power, which had previously been included with expert power. Informational power can be defined as the ability to persuade another through information or logical argument (Raven 2001).

French and Raven were certainly not the only theorists to explore the conceptualization of power and its potential to explain and predict social influence. For example, Emerson (1962, 1964) introduced an influential theory of power-dependence relationships, positing that power differentials result from the dependencies of individuals on each other for valuable resources. For example, person A is dependent on person B to the extent that A values the resources that are available through B and that those resources are not available through other means. He later expanded the scale of this idea by applying it to larger exchange networks (i.e., a set of individuals that are directly or indirectly linked together in a network of dependencies; Emerson 1972, 1976). At first glance it might appear that Emerson's conceptualization of power most closely matches a relatively small subset of French and Raven's (1959) power bases (most notably reward power); however, Emerson (1962:33) himself notes that "careful attention to our highly generalized conception of dependence will show that it covers most if not all of the forms of power listed in [French and Raven's] study". Moreover, Willer, Lovaglia, and Markovsky (1997) subtly differentiate between power and influence. Whereas French and Raven view the two as essentially the same construct (i.e., power as latent influence), Willer et al. treat them as separate but frequently co-occurring phenomena. According to Willer et al. (1997:73), power is "the structurally determined potential for obtaining favored payoffs in relations where interests are opposed," whereas influence is "the socially induced modification of a belief, attitude, or expectation effected without recourse to sanctions". Thus, one can

have an exertion of power without influence and vice versa; nevertheless, power often produces influence and influence often produces power.

Emerson's theory, as well as subsequent extensions (e.g., Cook et al. 1983; Markovsky, Willer, and Patton 1988) can be viewed as using a global concept of social power to explain and predict influence between individuals and among networks of individuals. French and Raven, on the other hand, attempt to more precisely delineate *types* of power, with the assumption that different types lead to different influence outcomes. Willer et al.'s (1997) distinction between power and influence can be (perhaps roughly) likened to a contrast between reward and coercive power on the one hand, and legitimate, referent, and expert power on the other hand. It is yet to be determined whether such combining of power types (as per Emerson, Willer, and others) is warranted or whether more finely grained differentiation among power types (as per French and Raven's taxonomy) has greater utility. However, in order to empirically evaluate whether different power bases lead to different outcomes, one must begin with reliable and valid measures of those bases.

Raven (1992) eventually created additional subdivisions within the original, five-factor power typology. First, he divided the reward and coercion bases into impersonal (referring to real, tangible rewards and punishments) and personal (referring to personal approval or the threat of rejection) forms. Second, Raven divided legitimate power into four separate bases. Legitimate power of position, also known as formal legitimacy (Raven 2001), is much the same as the original conceptualization of legitimate power. This is power that the agent holds solely on the basis of his or her position or status. Legitimate power of reciprocity, as the name suggests, is based on a reciprocity norm that suggests we should feel an obligation to do something positive for someone who has done something positive for us (Raven 2001; Raven, Schwarzwald, and Koslowsky 1998). Legitimate power of equity, drawn from the equity norm, suggests that we should compensate someone whom we have harmed or who has in some way suffered (Raven 2001; Raven et al. 1998). Finally, legitimate power of dependence or responsibility, sometimes referred to as the "power of the powerless," suggests that we are obligated to assist those who are dependent on us (Raven 2001; Raven et al. 1998).

Although these revisions have addressed many criticisms in of the French and Raven (1959) model (see Raven 2001) in terms of definitional and theoretical vagueness, most empirical work continues to focus on the original, five-base model (Shaffer, Percy, and Tepper 1997). Thus, it remains to be seen whether Raven's (1992) reconceptualization provides an empirical improvement in the measurement

of social power, and indeed whether it is substantively related to French and Raven's original conceptualization of the construct. The purpose of the present research is to examine the relationship between the original and the revised inventories of social power, as well as their respective utility in predicting overall perceptions of social power. Such an examination is important for future researchers intending to use French and Raven's original (1959) or Raven's revised (1992) typology to evaluate social power in applied contexts, as accurate evaluation depends crucially on valid measures.

METHOD

Participants

The sample consisted of 144 undergraduate students (106 females, 38 males) recruited from the Psychology Department participant pool at a Canadian University, receiving course credit in exchange for participation. The mean age of the participants was 21.4 years.

Materials and Procedure

Participants were seated in university classrooms in groups of 15-20, and each was given a questionnaire booklet containing the following power scales and demographic questions. The Five-Factor Power Scale (5PS; Hinkin and Schriesheim 1989) is designed to measure French and Raven's (1959) original five-factor social power typology. The scale consists of 20 items (four for each power base) describing various power resources that a participant's work supervisor (or most recent work supervisor, if they are not currently employed; all participants indicated that they had employment experience) might possess. For example, one item states, "My supervisor can increase my pay level," to which the participant indicates her or his agreement on a 5-point scale ranging from *strongly disagree* to *strongly agree*. Scores on the items for each subscale are summed, resulting in measures of targets' perceptions of their work supervisor's reward, coercive, legitimate, expert, and referent power bases, with higher scores indicating perceptions of greater power (possible range = 4 – 20).

The Interpersonal Power Inventory (IPI; Raven et al. 1998) is designed to reflect Raven's (1992) reconceptualization of the original power model. The reward and coercive power bases were subdivided into personal and impersonal factors, the expert base into expert and informational factors, and the legitimate base into factors based on position, equity, reciprocity, and dependence. The scale asks the

participant to vividly imagine a situation in which they complied with their work supervisor's request, and lists 33 possible reasons for complying (3 per power base; for example, "My supervisor probably knew more about the job than I did"). The participant rates each statement on a 7-point scale ranging from *definitely not a reason for complying* to *definitely a reason for complying*. The items for each subscale are summed to yield 11 scores corresponding to the 11 revised power bases, with higher scores indicating higher perceptions of power (possible range = 3 – 21).

In addition to the two measures of social power bases, a 4-item measure of global (i.e., overall) social power (Nesler et al. 1999) was administered. The items on this measure were similar to those on the 5PS, and were scored in the same way. Means and standard deviations for all scales are presented in Table 1.

TABLE 1

Means, Standard Deviations, and Cronbach's Alpha Coefficients for the 5PS Subscales, IPI Subscales, and Global Power Scale

Scale	*M*	*SD*	α
5PS			
Reward	13.74	3.88	.80
Coercive	14.31	3.52	.81
Legitimate	15.96	2.12	.74
Expert	15.78	3.08	.84
Referent	16.41	2.43	.76
IPI			
Personal Reward	13.51	3.58	.70
Impersonal Reward	14.08	4.63	.83
Personal Coercive	12.12	4.11	.72
Impersonal Coercive	12.25	4.57	.76
Legitimate Position	15.42	2.95	.60
Legitimate Equity	11.67	4.52	.84
Legitimate Reciprocity	12.92	3.55	.55
Legitimate Dependence	15.30	3.05	.56
Expert	15.04	3.29	.77
Informational	16.63	3.19	.81
Referent	13.16	3.83	.70

Global Power Scale	14.26	2.52	.50

RESULTS

Coefficient alpha reliabilities for the 5PS and IPI indicated for the most part adequate internal consistency reliability (see Table 1). Coefficient alpha reliability for the global power measure was .50, likely due to the limited number of scale items.

Intercorrelations among the IPI and 5PS scales are displayed in Table 2. Although many of the correlations between corresponding subscales of the two scales were significant, all were low to moderate, ranging from $r = .06$ to $r = .43$. Because subscales within each of the IPI and 5PS correlate significantly among themselves, a canonical correlation analysis was undertaken in order to create independent linear correlations of the two scales. Two of the five canonical correlations were significant, and are displayed in Table 3 with their corresponding unstandardized canonical loadings.[1] The first canonical correlation ($R_c = .64$) related a 5PS variate, contrasting the reward and coercive bases with the remaining three, to an IPI variate that contrasted the impersonal reward, personal and impersonal coercive, legitimate equity, and legitimate reciprocity bases with the remaining bases. The second canonical correlation ($R_c = .51$) represented general power variates, comprising a combination of all 5PS and all IPI subscales. Thus, the predicted mapping of 5PS power bases onto their IPI counterparts was not supported by this analysis.

TABLE 2

Correlations Between the 5PS Subscales and the IPI Subscales

	5PS Subscales				
IPI Subscales	Reward	Coercive	Legitimate	Referent	Expert
Personal Reward	.14	-.07	.20*	.19*	.27**
Impersonal Reward	.43**	.16	.07	.00	.07
Personal Coercive	.23**	.07	.20*	.08	.14
Impersonal Coercive	.41**	.35**	.03	-.15	-.08
Legitimate Position	.00	.02	.21*	.09	.16
Legitimate Equity	.15	.11	.12	.04	.12

Legitimate Reciprocity	.09	.09	.09	.02	.00
Legitimate Dependence	.13	-.01	.15	.16	.18*
Referent	.09	-.18*	.27**	.38**	.41**
Expert	.00	-.23**	.29*	.28**	.44**
Informational	-.04	-.12	.18*	.15	.27**

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

TABLE 3

Canonical Correlations and Unrotated Canonical Loadings for the Significant Variates Relating the 5PS and IPI Subscales

	Variate 1	Variate 2
Unrotated Canonical Loadings		
5PS Subscales		
Reward	.43	-.88
Coercive	.64	-.02
Legitimate	-.29	-.42
Referent	-.55	-.39
Expert	-.62	-.61
IPI Subscales		
Personal Reward	-.25	-.48
Impersonal Reward	.37	-.71
Personal Coercive	.09	-.49
Impersonal Coercive	.71	-.51
Legitimate Position	-.15	-.14
Legitimate Equity	.08	-.32
Legitimate Reciprocity	.15	-.13
Legitimate Dependence	-.12	-.37
Referent	-.57	-.56
Expert	-.65	-.43
Informational	-.41	-.19
R_c	.64	.51
Wilk's lambda	.38	.64
df	55	40
p	< .001	.025

To evaluate the utility of each of the scales in predicting global power, multiple regression analyses were conducted using the Nesler et al. (1999) global power measure as the criterion variable. Overall, the 5PS model predicted a significant proportion of variance in global power ($R^2 = .53$, $F(5, 138) = 31.32$, $p < .001$), whereas the IPI model did not ($R^2 = .12$, $F(11, 132), = 1.72$, $p = .07$). Moreover, each of the five subscales of the 5PS model significantly and independently predicted global power, whereas the vast majority of the IPI subscales did not (with the exception of referent power; see Table 4).

TABLE 4

Unstandardized Regression Coefficients for the 5PS and IPI Subscales Predicting Global Power

Scale	b	SE	t	p
5PS				
Reward	0.08	0.04	2.07	.04
Coercive	0.17	0.04	3.84	< .001
Legitimate	0.34	0.09	3.94	< .001
Expert	0.18	0.06	2.99	< .01
Referent	0.33	0.08	4.40	< .001
IPI				
Personal Reward	-0.03	0.10	0.32	.75
Impersonal Reward	0.09	0.07	1.44	.15
Personal Coercive	-0.02	0.07	0.23	.82
Impersonal Coercive	0.04	0.07	0.56	.58
Legitimate Position	0.10	0.09	1.11	.27
Legitimate Equity	-0.02	0.07	0.31	.76
Legitimate Reciprocity	-0.10	0.08	1.29	.20
Legitimate Dependence	0.01	0.09	0.03	.98
Expert	0.06	0.09	0.67	.50
Informational	-0.03	0.08	0.39	.70
Referent	0.18	0.09	2.12	.04

Finally, tests of increment in R^2 were conducted to examine whether subdividing the original five social bases into 11 bases in the IPI improved utility in predicting global power. Augmented models of the reward, coercive, legitimate, and expert

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subdivisions were compared with compact models that collapsed the subdivisions into their respective bases. In none of the analyses did the augmented (i.e., subdivided) model provide significantly greater predictive utility than the compact model (reward, $F(1,141) = 0.143$, *ns*; coercive, $F(1,143) < 0.001$, *ns*; legitimate, $F(3, 139) = 1.143$, *ns*; expert, $F(1,141) = 1.430$, *ns*).

DISCUSSION

The results of the analyses suggest that the original, five-factor typology and the revised, 11-factor model differ considerably in both construct and criterion validity. Correlations among corresponding subscales on the two measures tended to be quite low, and a number of significant relationships were revealed between non-corresponding power bases. In addition, the five-factor model significantly and substantially predicted scores on a measure of global power (with each of the five power bases making independent contributions) whereas the 11-factor model did not. If the IPI and 5PS were indeed measuring the same constructs, we would not expect such low correlations among their components and such a drastic difference in predictive power. The analyses suggest that Raven's (1992) subdivision of the original model into 11 distinct bases (while conceptually appealing) may have been misguided, and that researchers may be better off continuing to use the historically more popular five-factor model.

Nevertheless, the results of both the canonical correlation and the regression models suggest that neither the five-factor model nor the 11-factor model fully capture the dimensions underlying perceptions of social power. Indeed, although the five-factor model was a much better predictor of global power, it still only accounted for 53% of the variability. Thus, it would appear that there is still a large aspect of global power that is not being captured in French and Raven's five factors, and that merely subdividing the existing power bases into more specific constructs may not be the most fruitful approach. Novel bases need to be proposed, tested, and integrated into the model.

Although the results provide a useful starting point for clarifying some of the issues surrounding the measurement of social power, this study has several limitations that should be addressed by future research. One issue is the possibility that the relationships between measures used in the study were affected by common method variance (e.g., see Brannick et al. 2010). All responses were made on self-report, Likert-type rating scales, and moreover, the format for the 5PS and global power measures were similar. Given that common method variance would tend to amplify relationships among similarly measured variables,

this issue only serves to damage the case for the IPI even further (i.e., the predictive utility of the IPI may be even lower than was demonstrated in this study); however, it may have artificially helped the 5PS. Although it seems unrealistic that the substantial amount of variance in global power accounted for by the five-factor model was entirely due to common measurement, this remains a matter to be resolved.

A second, related issue is the fact that all measures were self-reported percepts. This study explicitly dealt with subordinates' *perceptions* of their supervisors' power; nevertheless, it would be helpful to obtain behavioral indicators of both supervisors' influence and subordinates' compliance as well. Assessing the behavioral consequences of power and demonstrating differing effects of the two scales (as well as their subscales) would more strongly support the conclusions drawn from this research. It would also be desirable to obtain measures from both sides of the power relationship in order to assess convergent validity. For example, data from the actual power holder (both in terms of the actual position and their perceptions), and more objective measures such as the number of subordinates would help to clarify the utility of these power scales. As well, contrasting the IPI and 5PS with measures less related to power (e.g., status) would add discriminant validity.

A third matter that should be addressed in future studies is analytical in nature. The statistical tests that were used were chosen based on their ability to address the research question, but also partly out of necessity. One analysis that would be enormously helpful, but for which an adequate sample size is lacking, is confirmatory factor analysis (CFA). CFA allows for the verification that the relationship between a theoretical, underlying factor structure and a set of observed variables exists, but requires a much larger sample size than was available in this study (between 5 and 20 observations per item or parameter estimate). With a larger sample, future researchers could obtain a much clearer picture of the underlying structure of these power scales.

To conclude, it appears that the original, five-factor model of social power proposed by French and Raven has maintained its edge over the latter author's revised model. Nevertheless, the data presented in this study suggest that the five factors do not tell the whole story, and that there is still a great deal of empirical and conceptual work that needs to be done before we can have confidence in the model. Future researchers should focus on further empirical exploration of the dimensions and the development of new theoretical additions to the current model.

Further research is also needed to evaluate these measures in terms of relevant behavioral outcomes, such as supervisor efficiency and job satisfaction.

ENDNOTES

1. Although it is possible to rotate canonical loadings (e.g., to a Varimax criterion) to improve interpretability, rotation is discouraged for canonical correlation due to the potential reduction in the optimality of the correlations and introduction of interrelationships among pairs of canonical variates (Rencher 2002).

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