

# **AN EMPIRICAL STUDY ON THE INFLUENCE OF CONTEXT ON THE NATURE OF PROTOTYPES OF EFFECTIVE LEADERS**

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## **AN EMPIRICAL STUDY ON THE INFLUENCE OF CONTEXT ON THE NATURE OF PROTOTYPES OF EFFECTIVE LEADERS**

### **ABSTRACT**

Most leadership theory and research to date has focused on characteristics and behaviours of leaders and their outcomes. However, a more recent 'follower-centred' approach has been the study of employees' leadership prototypes. Although there has been considerable investigation of the influence of national culture, there has been very little done on how prototypes might vary with other aspects of the leadership context. This study investigated the influence of the level of leadership and the gendered nature of the workplace. Statistically significant differences were found between the ratings of prototype attributes for higher and lower leadership positions, and for leaders in more "masculine" and "feminine" workplace settings. The implications of these findings are discussed.

*Keywords: prototypes, leadership, context, masculinity, femininity*

As long as leaders have been present within society, there has been an equally long history of thinkers posing such questions as: What makes a good leader? Are leaders born or can they be made? What types of people make an effective leader? Throughout the last half a century there has been a constant stream of models and theories that have attempted to answer such questions, each focussing on different leadership characteristics or behaviour patterns, and linking these to various outcomes, typically the job performance of followers and certain employee attitudes, such as job satisfaction, work motivation and commitment. Less common, and more recent, have been so-called "follower-centred" approaches to leadership, where the emphasis is more on the social perceptions, attitudes, values and expectations of followers that influence leader effectiveness. An early statement of such an approach was by Hollander and Julian in 1969, and later by Hollander (1992). Consistent with this emphasis has been a line of research which focuses on the study of people's leadership prototypes. Arising from the area of social cognition, and in particular Rosch's (1978) work on the structure of natural categories, the concept of a prototype has been applied to the study of leadership. Leader prototypes refer to mental constructs of followers that represent their idea of what constitutes "a leader". As described in so-called implicit leadership theories (Eden and Leviathan, 1975) and leader-categorization models (Lord, Foti and DeVader, 1984; Lord and Maher, 1991, Nye & Forsyth, 1991) leadership prototypes influence followers' expectations of, and reactions to, leaders and influence how that person will perceive leaders'

effectiveness. The more closely leaders are perceived to possess characteristics that match the followers' prototype of a leader, the more likely it is that they will allow the leaders to exert leadership influence on them, and the more the leaders will be perceived as effective by the followers.

Within such models, the development of a leadership prototype is generally viewed as a relatively slow process that results from extensive experience within a specific context (Sherman, 1996). Although prototypes are conceived of as existing at the individual level, their nature can be influenced by factors that operate at the more macro level, such as the larger systems of meaning that are present within a society or even a particular organisation (Weick, 1995). Empirical research so far has mostly focused on exploring the particular "leadership attributes" that define the nature of the prototypes. A large amount of empirical research, mostly carried out as a part of the GLOBE project studies, has also studied differences across national cultural groups, seeking to identify those attributes that vary and those that do not (e.g. Den Hartog, House, Hanges, Ruiz-Quintanilla, Dorfman, and other GLOBE Country Investigators, 1999). As originally conceived, prototypes are therefore regarded as relatively "static" entities, representing the accumulated experiences in a given cultural context over long periods of time. However, recent theorising on the nature of prototypes using connectionist-based framework has emphasized their dynamic "dynamic" nature (Lord, Brown, Harvey and Hall, 2001; Hanges, Lord and Dickson, 2000). Within the connectionist model, it is argued that leadership prototypes are recreated each time they are used, rather than stored and retrieved from long-term memory. No longer are prototypes being perceived as static and inflexible, but are able to be influenced by various aspects of the leadership context, the leader's gender, the subject's attitudes and even the subject's mood states.

### ***The Study***

Although considerable work has been done to investigate how prototypes vary between national cultural groups, very little has been done to explore how they might vary with the leadership context. A small study by Offerman, Kennedy and Wirtz (1994) compared the prototypes of leaders in lower and higher levels (supervisors and senior managers). The present study also investigated the influence of the level of

the leader's position, but extends this work by varying also what might be termed the "gendered nature" of the workplace environment. Prototypes for leaders in more stereotypically "masculine" workplace environments (manufacturing and construction industries) were compared with those in more "feminine" workplace environments (clothing retail and design industries). Leadership prototypes were obtained for leaders in four different contexts: a low and a high level leadership position in a "masculine" work environment, and a low and a high level leadership position in a "feminine" work environment.

As no standard or widely used instrument was available to the authors for the measurement of individual leadership prototypes, one was constructed from items used in previous studies. The resulting instrument contained items that clearly reflect the constructs that describe well-known leadership style dimensions (transformational leadership, consideration and task-oriented, participative, etc). It also contained items representing stereotypically male and female characteristics, both socially desirable and non-desirable, as derived from studies on perceived sex-roles, such as contained in Bem's (1974) BSRI instrument. (For brevity, these will be referred to as "masculine-plus", "masculine-minus", feminine-plus or "feminine-minus" prototype items.) Items not obviously associated with any of the above set of constructs were also included if they were commonly contained in previous studies of leadership prototypes. (A more detailed description of the instrument used for the measurement of leadership prototypes is contained in the Method section below.)

### ***Aims and Expectations***

The aim of the study, therefore, was to investigate how people's leadership prototypes are influenced by the leadership context, and in particular to explore how the prototypes influenced by a) the level of leadership (senior management, versus lower level management) and b) the gendered nature of the work environment. Because of the lack of previous research or theorizing on the influence of context on leader prototypes, the present study is primarily an exploratory one, and no formal research hypotheses will be proposed. However, based on common ideas on the different roles of upper and lower levels of management, and on common stereotypical views of what attributes comprise "masculine" and

“feminine” characteristics, some general expectations can be made. Regarding the effect of leadership level, it could be expected that higher levels of leadership would be more strongly characterised by attributes reflecting transformational leadership style, such as being inspirational, charismatic and visionary. More senior leaders might also be expected to be more “political” and more long-term in their orientation. Given the commonly held notion that in present society, that leadership is a gendered concept reflecting male values, and the fact that males tend to be overrepresented in higher levels of management, then it could be expected that higher levels of leadership would be more strongly characterised by positive “masculine” characteristics such as being courageous, adventurous and competitive. Regarding possible workplace gender effects on prototypes, it might be expected that leader prototypes in more “masculine” work environments might be expected to be defined by more masculine attributes, and less by more feminine attributes, compared with prototypes of leaders in more “feminine” work environments.

## **METHOD**

### ***Data Collection and Sample***

Questionnaire responses were obtained from a convenience sample of 130 participants comprising business students, both undergraduate and postgraduate, at the University of Technology, Sydney. A slight majority of respondents were female (58.5%), with half of the sample being in the 18-25 age group. There was a high percentage of university graduates (45.4%) and those having completed a university postgraduate degree (23.1%).

### ***The Instrument***

The questionnaire contained two sections of relevance to this paper. One section obtained demographic information, including the subjects’ sex, age and educational background. The last section, and the one most central to the present paper, was used to determine the participants’ leadership prototypes in the four different leadership contexts. These were:

1. A CEO or senior manager in a heavy industry manufacturing organization
2. A CEO or senior manager in a fashion design company

3. A foreman in a building construction industry

4. A supervisor (or a lower level manager) in a retail clothing store

For each of these positions, subjects completed a total of 70 rating scale items. Each of these items consisted of a word or phrase describing a particular personal or behavioural characteristic, and the subjects were asked to rate the extent to which that each of the characteristics would either facilitate, or impede, the person being an effective leader in that particular leadership context. A nine-point rating scale was used, with response options varying from “- 4” (= greatly impedes) to “+ 4” (= greatly facilitates). (For brevity, henceforth these will be referred to as the “prototype items”, and the words or phrases, referred to as the “prototype characteristics” or “attributes”.) In order to control for any order or sequence effects, four versions of the questionnaire were used in which the order of the conditions were varied.

The prototype attribute items used in this study were chosen from those items used in previous studies as a part of the GLOBE project and other similar studies (Gerstner and Day, 1994; Helgstrand and Stuhlmacher, 1999; Offerman et al. 1994). Selection of these items was based on a number of criteria. Items were selected if they occurred in more than one of the previous studies mentioned. Also, items were selected if the corresponding construct was judged to be of theoretical significance by virtue of its reflecting a construct associated with a well-known leadership theory or attitudinal/personality dimension. Furthermore, in order to enable the construction of multi-item scales, an attempt was made to include a number of items reflecting a particular construct, if it was judged that the construct was of theoretical interest. As a result of the above process, a total of 70 prototype items were selected, and these are listed in Table 1. Also, items were grouped on the basis of their face-validity to form 14 scales. Prior to the final formation of scales for further analyses, each set of items was subjected to exploratory factor analysis (to check for unidimensionality) and reliability analysis, and items were removed if this improved the statistical properties of the scale. The final 14 scales (written in bold type) and their component items are listed in Table 1. Items not included in any of the scales formed in this way are listed under the heading “Various”.

## RESULTS

Mean ratings for the prototype attribute items and scales for each of the four leadership contexts are shown in Table 1, as well as Cronbach alpha reliability estimates for each of the scales. Scale scores were calculated as the average of the responses to the items comprising the scale. Consistent with the previous studies of leadership prototypes, positive ratings can be observed for a wide variety of attributes.

Although there is some variation across the four contexts, there appears to be a large degree of consistency across the contexts. As found in previous similar studies, positive ratings were obtained for numerous items including “Communicative”, “Confident”, “Hard-working” and “Dedicated”.

Conversely, the scales “Feminine Minus”, “Masculine Minus” and “Power-distance” had negative mean scores, indicating that these attributes were seen as impeding effective leadership. These relationships existed across all four leadership contexts, and the mean scores were all significantly different from zero ( $p < .01$ ).

To investigate the influence of leadership context on the prototype measures, 2 by 2 repeated-measures ANOVAs were performed, with the two within-subject context factors being the level of leadership (high versus low) and workplace gender (“masculine” versus “feminine”) and the dependent variables being the prototype items and scales. Tables 2 and 3 show the main effect scores for these two factors, and the F and p-values for each of the main effects. The variables in these tables have been listed in order of increasing values of the F statistic for the effect sizes. To save space only those items are listed for which the main effects were statistically significant at the .05 level. Main effect scores for leadership level were calculated as the average of the leadership measures for the two “high” leadership positions, minus the average of the leadership measures for the “low” leadership positions. Similarly, main effect scores for workplace gendered were calculated as the average of the leadership measures for the two “masculine” workplaces, minus the average of the leadership measures for the “feminine” workplaces.

**TABLE 1**  
**Mean Ratings for Prototype Items and Scales**

	CM	CF	SM	SF		CM	CF	SM	SF
ATTRIBUTES	Means				ATTRIBUTES	Means			
<b>Transformational(alpha=.77)</b>	2.79	0.88	1.95	2.20	<b>Feminine Plus(alpha=.766)</b>	1.35	1.46	1.16	1.76
Charismatic	2.50	3.29	1.34	2.23	Anxious	-1.47	-1.35	-1.46	-1.52
Inspirational	2.88	3.42	1.85	2.25	Shy	-2.45	-2.25	-2.22	-2.45
Encouraging	2.84	2.68	2.75	1.86	Needs approval	-1.02	-0.75	-0.70	-0.72
Builds confidence	3.08	2.79	2.79	2.78	Gullible	-2.02	-1.72	-1.79	-1.74
Intellectually stimulating	2.31	2.38	1.24	1.54	Changes mind easily	-2.08	-1.35	-2.18	-1.84
Visionary	2.79	3.19	1.53	1.68	Nervous	-2.65	-2.35	-2.63	-2.58
Long-term oriented	3.09	2.54	2.12	2.04	<b>Intelligence(alpha=.754)</b>	2.97	2.65	2.41	2.20
<b>Participative(alpha=.65)</b>	2.44	2.41	2.18	2.22	Intelligent	3.24	2.98	2.44	2.16
Participative	2.63	2.81	2.53	2.74	Knowledgeable	3.02	2.78	2.75	2.49
Egalitarian	1.77	1.71	1.48	1.48	Wise	2.66	2.18	2.23	1.95
Delegates	2.61	2.60	2.49	2.41	<b>Integrity(alpha=.816)</b>	2.61	2.19	2.44	2.45
Consultative	2.66	2.52	2.20	2.23	Honest	2.85	2.45	2.65	2.68
Individualistic	0.61	1.85	0.18	0.23	Sincere	2.33	2.16	2.15	2.36
<b>Performance-oriented(alpha=.626)</b>	2.79	2.85	2.75	2.65	Just	2.42	1.82	2.22	2.15
Dedicated	2.92	3.10	2.77	2.75	Trustworthy	2.81	2.32	2.75	2.61
Performance-oriented	2.60	2.94	2.62	2.56	<b>Power-distance(alpha=.746)</b>	-0.50	1.20	-0.50	0.11
Conscientious	2.42	2.39	2.32	2.35	Status-conscious	0.34	1.57	-0.41	0.35
Hard-working	3.20	2.96	3.31	2.95	Class-conscious	-0.22	0.83	-0.59	-0.13
<b>Attractive(alpha=.711)</b>	0.37	2.26	0.15	1.51	<b>Benevolence(alpha=.567)</b>	1.90	1.90	1.72	1.84
Good-looking	0.20	2.17	-0.39	1.44	Generous	1.45	1.58	1.11	1.35
Attractive	0.54	2.35	0.33	1.58	Loyal	2.35	2.22	2.37	2.32
Likeable	2.14	2.58	2.14	2.66	<b>Social Skills(alpha=.721)</b>	2.65	2.53	2.19	2.42
<b>Masculine Plus(alpha=.618)</b>	2.32	2.59	1.79	1.74	Communicative	3.29	3.25	3.05	3.28
Competitive	2.33	2.98	1.15	1.65	Diplomatic	2.32	1.95	1.57	1.95
Adventurous	1.26	2.51	0.72	0.68	Self-knowledge	2.49	2.41	2.35	2.26
Confident	3.22	3.35	2.99	3.06	Persuasive	2.60	2.59	2.05	2.44
Firm	2.62	1.86	2.45	1.92	Effective bargainer	2.53	2.45	1.92	2.19
Courageous	2.13	2.24	1.64	1.35	<b>Admin Competent (alpha=.605)</b>	2.98	2.63	2.67	2.90
Forceful	1.18	0.92	0.86	0.13	Orderly	2.40	2.12	2.26	2.45
<b>Masculine Minus(alpha=.755)</b>	-0.69	-0.40	-0.88	-1.38	Organised	3.11	2.70	2.99	3.02
Aggressive	0.75	0.89	0.42	-0.69	Good administrator	2.86	2.55	2.35	2.78
Selfish	-2.00	-1.46	-1.78	-2.11	<b>Various</b>				
Bossy	0.16	0.27	-0.12	-0.62	Informal style	0.64	1.65	1.62	1.52
Arrogant	-1.61	-1.13	-1.72	-2.07	Innovative	2.70	3.42	1.61	1.88
Dominant	0.92	1.00	0.69	-0.12	Modest	1.11	0.79	0.89	1.19
Power-hungry	-0.74	-0.59	-1.20	-1.41	Rational	2.85	2.42	2.47	2.58
<b>Feminine Plus(alpha=.736)</b>	1.35	1.46	1.16	1.76	Risk-taker	1.88	2.82	0.34	0.78
Sensitive	0.35	1.07	-0.23	1.18	Cautious	1.35	0.32	1.78	0.87
Gentle	-0.31	0.54	-0.30	0.87	Manipulative	-0.19	0.48	-0.32	-0.51
Eager to help others	2.02	1.76	2.10	2.58	Political	1.43	1.15	0.42	0.31
Considerate	1.82	1.62	1.68	2.08	Individualistic	0.61	1.85	0.18	0.23
Compassionate	1.56	1.62	1.33	1.53	Likeable	2.14	2.58	2.14	2.66
Understanding	2.32	2.15	2.18	2.31	Forceful	1.18	0.92	0.86	0.13
					Dominant	0.92	1.00	0.69	-0.12

Leadership contexts: **CM** = A CEO or senior manager in a heavy industry manufacturing organisation;

**CF** = A CEO or senior manager in a fashion design company; **SM** = A foreman in a building construction industry; **SF** = A supervisor in a retail clothing store. Names of scales are shown in bold type, except for "Various" (see text).



**TABLE 2**  
**Mean Values of Leadership Level Effect for Prototype Items and Scales, and Tests for Statistical Significance of Level Effects**

Attributes	Mean	F	p	Attributes	Mean	F	p
Risk-taker	1.79	163.30	.000	Good-looking	0.48	20.41	.000
<b>Transformational</b>	0.77	132.53	.000	Bossy	0.58	20.21	.000
Intelligent	0.90	126.80	.000	Forceful	0.55	19.19	.000
<b>Masculine Plus</b>	0.69	109.58	.000	Power-hungry	0.64	18.48	.000
Charismatic	1.11	108.69	.000	Dominant	0.67	18.34	.000
Visionary	1.38	108.52	.000	Consultative	0.38	17.71	.000
Innovative	1.32	104.99	.000	Eager to help others	-0.45	17.56	.000
Competitive	1.26	103.17	.000	<b>Participative</b>	0.62	16.55	.000
Inspirational	1.10	92.41	.000	Wise	0.33	14.30	.000
Adventurous	1.18	87.46	.000	Cautious	-0.49	13.80	.000
Intellectually stimulating	0.96	80.52	.000	Manipulative	0.56	13.59	.000
Political	0.93	58.92	.000	Arrogant	0.53	13.21	.000
Individualistic	1.02	53.45	.000	Confident	0.26	12.02	.001
<b>Intelligence</b>	0.50	52.18	.000	Diplomatic	0.37	10.55	.001
Status-conscious	0.98	50.26	.000	Persuasive	0.35	10.23	.002
<b>Masculine Minus</b>	0.59	45.44	.000	Effective bargainer	0.43	10.05	.002
<b>Power-distance</b>	0.83	42.82	.000	Dedicated	0.25	9.78	.002
Long-term oriented	0.74	40.84	.000	Generous	0.31	9.19	.003
Aggressive	0.92	35.70	.000	Orderly	-0.28	7.84	.006
Courageous	0.69	35.39	.000	Knowledgeable	0.28	7.50	.007
<b>Attractive</b>	-0.22	28.76	.000	Informal style	-0.43	7.32	.008
Class-conscious	0.67	24.73	.000	Egalitarian	0.26	5.57	.020
Attractive	0.49	23.93	.000	Changes mind easily	0.29	4.82	.030
Honest	-0.20	23.00	.000	<b>Performance-oriented</b>	0.11	4.25	.041
<b>Social skills</b>	0.28	20.55	.000				

**TABLE 3**  
**Mean Values of Workplace Gender Effect for Prototype Items and Scales, and Tests for Statistical Significance of Workplace Gender Effects**

Attributes	Mean	F	p	Attributes	Mean	F	p
Good-looking	-1.72	170.79	.000	Risk-taker	-0.68	18.00	.000
<b>Attractive</b>	-1.63	167.80	.000	<b>Intelligence</b>	0.27	15.75	.000
Attractive	-1.53	115.45	.000	Trustworthy	0.31	13.72	.000
Cautious	0.98	51.47	.000	Hard-working	0.30	12.81	.000
<b>Power-distance</b>	-0.88	51.26	.000	Forceful	0.50	11.84	.001
Charismatic	-0.84	49.37	.000	<b>Integrity</b>	0.20	11.80	.001
Sensitive	-0.96	47.30	.000	Long-term oriented	0.32	11.28	.001
Gentle	-0.87	43.95	.000	<b>Transformational</b>	-0.18	10.07	.002
Status-conscious	-0.99	38.18	.000	Visionary	-0.28	9.63	.002
<b>Feminine Plus</b>	-0.36	33.67	.000	Aggressive	0.48	9.14	.003
Firm	0.64	33.10	.000	Knowledgeable	0.25	7.96	.006
Likeable	-0.48	30.00	.000	<b>Feminine Minus</b>	-0.17	7.87	.006
Competitive	-0.58	29.17	.000	Dominant	0.37	7.30	.008
Class-conscious	-0.76	23.53	.000	Informal style	-0.46	6.98	.009
Innovative	-0.50	23.29	.000	Organised	0.19	5.87	.017
Individualistic	-0.65	21.80	.000	Orderly	0.23	5.54	.020
Wise	0.38	21.65	.000	Gullible	-0.17	4.43	.037
Just	0.34	20.86	.000	Intelligent	0.17	4.32	.040
Inspirational	-0.47	20.49	.000	Generous	-0.21	4.17	.043
Changes mind easily	-0.53	18.86	.000	Intellect. stimulating	-0.19	4.04	.047
Adventurous	-0.61	18.85	.000				

(Note: The ANOVA analyses showed many statistically significant interaction effects between the two factors, but a consideration of these is outside the scope of this paper.)

From Table 2, it can be seen that, as was predicted, attributes reflecting a transformational leadership style and the positive “masculine” characteristics were amongst those that showed the strongest (and positive) leader level effect. (A positive leader level effect indicates a more positive rating for higher level leadership positions.) Also, as expected, positive level effects were also found for the item, “political” and “long-term oriented”. All of these level effects are statistically significant ( $p < .01$ ). Other characteristics, not linked to our expectations, were also found to exhibit strong leader level effects. These include being a “risk-taker” and “intelligent”. Also the positive effect for the “masculine-minus” scale, and the “aggressive” item, indicates that these were seen as impeding effective leadership to a less extent for leadership at higher levels.

Table 3 shows the main effects for the factor, workplace gender. Here, a positive effect mean score indicates a more positive rating for prototypes of leaders in “masculine” work environments, compared to those in more “feminine” ones. As was predicted, there were negative and statistically significant ( $p < .01$ ) effect scores for both the scales reflecting stereotypically “feminine” characteristics. Interestingly though, there was also a slight negative effect for the scale reflecting positive “masculine” attributes, although this did not reach statistical significance at the .05 level ( $p = .051$ ). This is contrary to the expectation stated earlier. Other items also showed statistically significant workplace gender effects, most notably the scale “attractive” and its two component items. The negative mean effect scores indicate that being attractive was seen as facilitating effective leadership to a greater extent in “feminine” workplace environments.

## **DISCUSSION AND CONCLUSIONS**

The main aim of the study was to pursue the idea of the “dynamic” nature of leadership prototypes, as suggested by connectionist models, and to investigate the extent to which leadership prototypes are

influenced by the leadership context. The study was primarily an exploratory one that focused on investigating whether leadership level and the gendered nature of the workplace would produce significant influences on the characteristics of leadership prototypes. Although items tended to be rated either positively or negatively consistently across the four leadership contexts, there were strong, statistically significant, effects of the level of leadership and the “gender” of the workplace. For example, “Risk-taking” was considered more important for high-level leadership and “Good-looking” more important in a stereotypically “feminine” workplace than in a “masculine” one.

This illustrates the way in which leadership prototypes are subject to systematic variation, consistent with their interpretation based on a connectionist mental model. Within this approach prototypes are evoked by the stimulus content and context instead of being mentally “found” when required, as suggest by Lord, Foti and DeVader (1984). In understanding leadership effectiveness, we should then focus on the prototypes that followers use to define and recognise leadership in different contexts, instead of looking for universal attributes of leaders that are supposedly applicable in all situations and environments.

### ***Limitations and Areas for Future Research***

One limitation of this research is that a convenience sample university students was used. Further studies could use employees and managers in actual workplaces, and also explore differences in prototypes for people in different workplace environments. By investigating the influence of a person’s work experience, there is the potential to research how ones’ leadership prototype has changed and developed from increased interactions with certain types of leaders in these work environments. Another limitation of the present study is that the ‘gendered-nature’ of the context was varied by comparing prototypes for a limited number of different work environments. Further studies should examine a wider variety of “gendered” work environments. For example, there exist many different types of workplaces and industries that might be considered to be stereotypically “feminine”, such as nursing and other caring professions for which the leadership prototypes might differ from those in the “feminine” workplace environments used in this study.

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