
Transformational leadership or the iron cage: which predicts trust, commitment and team efficacy?

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Abstract

This paper investigates the differential effects of transformational leadership and the "iron cage" on trust, commitment and team efficacy at the team level. Transformational leadership has been shown to have positive effects on trust, commitment and team efficacy. However, it could be argued that these results are not due to the leadership but to the idea that the team has developed strong norms that constrain their behavior and "force" them to perform. The rival hypothesis that the iron cage results in trust, commitment and team efficacy is tested using hierarchical regression analysis. We find that transformational leadership in teams predicts trust, commitment and team efficacy over and beyond the perceptions of the iron cage. The iron cage adds to the prediction of commitment only. Results suggest that while encouraging strong values and norms within a team will lead to increased commitment, focusing on transformational leadership in teams is a more effective way to encourage the development of trust, commitment and team efficacy.

Many organizations are experimenting with new ways to design work to enable them to be more productive, flexible, and to meet the demands of a fast paced and changing environment. The competitive challenges of the last two decades have seen an increase in the number of organizations using self-managed teams as a new work design and this topic has been receiving increased attention in the literature (Banker *et al.*, 1996; Cohen and Ledford, 1994; Manz, 1992). One estimate is that more than half of major US corporations are exploring some type of team based work design (Osterman, 1994). Manz and Sims (1993, p. ix) state that "almost every major US corporation is seriously considering work teams". Parker and Wall (1998, p. 24) assert that "autonomous workgroups, in all their forms and sizes, are increasingly popular".

Team structure can lead to increased organizational productivity, higher job satisfaction and more effective response to competitive pressures (Cohen *et al.*, 1996; Parker and Wall, 1998). It has been suggested that team structure increases employee empowerment (Galbraith and Lawler, 1993) and employee commitment (Barker, 1993). There is also a potential "down" side of team structure. Wasted time, frustration, destructive conflict, poor decisions and the reinforcing of norms of poor performance are some common problems with this design (Hackman, 1987). Other authors have argued that empowerment is a "myth" (Harley, 1999) and that teams are as controlling of employees as hierarchical management ever was (Barker, 1993). Strong positive norms can develop concertive control systems that exert powerful control over team members (Barker, 1993). Barker (1993) referred to this concertive control system as the "iron cage".

Like the iron cage described by Weber, it controls behavior but in a different way.

What are the differential effects of transformational leadership in teams versus the perception of the iron cage? Do teams that develop such strong group norms as to develop this concertive control experience as high trust, commitment, and team efficacy as teams that have high transformational leadership? The objective of this research was to test the rival hypothesis that trust, commitment and team efficacy could be as effectively achieved by concertive control within the team, or the "iron cage", as they could be by transformational leadership.

Transformational leadership, trust and commitment

Transformational leadership is composed of inspirational motivation, idealized influence, individualized consideration and intellectual stimulation (Bass, 1985, 1998). This type of leadership encourages followers to put in extra effort and to go beyond what they thought possible. A large amount of empirical research on transformational leadership has shown its positive effects (Bass, 1985, 1998). Strong leadership positively affects satisfaction and performance of individuals, teams and organizations (e.g. Barling *et al.*, 1996). Transformational leadership has also been found to lead to higher levels of organizational commitment and is associated with business unit performance (Barling *et al.*, 1996). At an individual level, transformational leadership has positive effects on subordinates' satisfaction with (Hater and Bass, 1988) and trust in leadership (Barling *et al.*, 2000; Podsakoff *et al.*, 1996).

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Transformational leadership and team efficacy

A group that shares a belief that they can be successful at a particular task has much greater possibility of actually succeeding because of this efficacious belief. Collective efficacy is defined as “a group’s shared belief in its conjoint capabilities to organize and execute courses of action required to produce given levels of attainment” (Bandura, 1997, p. 477). This concept is as important at the group level as self-efficacy is at the individual level (Durham *et al.*, 1997). Self-efficacy and collective efficacy differ in the level of agency (Feltz and Lirgg, 1998). While many researchers view them as similar in that they are both task specific (Durham *et al.*, 1997), some use it in a more general way, for example Parker’s (1998) role-breadth self-efficacy. Some researchers have named this concept team efficacy and we will follow that labelling. The concept of team efficacy is the same as collective efficacy only applied more specifically to a team versus a collective.

Both self and team efficacy “have similar sources, serve similar functions and operate through similar processes” (Bandura, 1997, p. 178). Extending evidence on individual level variables suggests that team efficacy is a potential mediator of the relationship between transformational leadership in teams and team performance. On an individual level, self-leadership has been shown to positively influence self-efficacy (Prussia *et al.*, 1998). Transformational leadership has also been found to have positive impacts on subordinates’ self efficacy beliefs (Kirkpatrick and Locke, 1996). At the group level, Sosik *et al.* (1997) found that transformational leadership affected group potency (which is closely related to collective efficacy) more strongly than transactional leadership. Group potency beliefs in turn affected group performance positively.

The iron cage

What of the rival hypothesis that trust, commitment and team efficacy could also be as effectively achieved by the development of strong group norms and values? Barker (1993, p. 408) depicts a team structure that evolved over time to “draw the iron cage tighter and to constrain the organization’s members more powerfully [than the former bureaucratic and hierarchical structure]”. This finding seemed contrary to what we would expect with a team structure. Instead of the freeing of the organization’s members

from Weber’s iron cage of rational control, a system of value-based normative rules developed that controlled the members’ actions much more than previously. The concertive structure resulted in a “form of control more powerful, less apparent, and more difficult to resist than that of the former bureaucracy” (Barker, 1993, p. 408).

In reviewing the self-managing team literature it could be argued that a self-managing team structure will increase “employee motivation, productivity and commitment” (Barker, 1993, p. 414). It is for this reason that many companies adopt this organizational form. The teams that Barker (1993) studied created a value-based system of control and then became strongly identified with these values. This value-based system evolved over time to strong norms and then to a rule-based system. The abstract values of the vision statement were brought into concrete terms by this process. These values were responsibility, quality, member contribution, and commitment to the team and the company (Barker, 1993, p. 421). There was high commitment of the team members to the values of the team. There is nothing in this description of the development of concertive control that would indicate that there was a lack of trust or distrust in team members. In fact in the first phase an employee describes the members of the team as being like family members (Barker, 1993). We could also infer from the description that these teams had high levels of team efficacy. They tackled problems and took on the authority that was vested in them gladly and effectively. They exhibited a “can do” attitude. On the basis of these observations it appears that the perceptions of an “iron cage” in fact could elicit great commitment. There is no evidence to suggest that trust and team efficacy would not also be high in such an environment.

Which will exert a stronger influence – transformational leadership or perceptions of the “iron cage”? Are the effects additive? After controlling for the effects of transformational leadership, does the iron cage perception add to the prediction of trust, team efficacy, or commitment? And when we control for iron cage perceptions, does transformational leadership still exert any influence? It appears from the literature that teams that have strong transformational leadership or strong value-based norms and rules will perform more effectively than those that have neither. The process by which this performance is reached would appear to depend on trust, commitment, and team efficacy. The evidence to date suggests that transformational leadership will be a

stronger influence. The only outcome that we would expect to be influenced by the perception of the iron cage would be commitment. This is the only outcome that Barker (1993) found to be an integral part of the concertive system of control that developed. On the basis of the discussion to this point we hypothesize that:

- H1.* The effects of transformational leadership will be significant over and above the effects of the perception of the iron cage in predicting trust, commitment and team efficacy.
- H2.* The iron cage will add to the prediction of commitment over and above transformational leadership but not to trust or team efficacy.

Method

Sample

The sample consisted of teams formed for an Executive MBA program at a leading Canadian business school. Teams in this program are self-managing in that they have control over when tasks will be done and how the work will be accomplished. They are intact for the duration of the program (20 months). They do not have control over who is assigned to their group or what specific academic assignments must be completed, but some mechanisms exist for expulsion from a team under extreme circumstances. A cover letter explaining the study and the actual survey were sent via e-mail addressed to each individual registered in the program in 1999. Participants filled out the survey online and e-mailed it back to the Executive MBA Centre at the school where the responses were printed out and then input into an SPSS file. The survey was sent to approximately 400 people. We received 177 back for a response rate of 44.25 per cent. Once responses were aggregated to the team level, data for 42 teams were obtained. The average number of respondents per team was 3.8 with a range of 2 to 7. The group composition with respect to sex was similar across teams with 22.01 percent female members on average.

Scale development

There were no scales available in the literature to measure team efficacy with respect to academic achievement. Items were generated for team efficacy by thinking of the various competencies that a team would require to excel in an academic environment. Sixteen original items were devised. Six expert judges (i.e. graduate students in organizational behaviour and psychology)

rated these 16 items on two dimensions. They were given the definition of team efficacy. They were asked to indicate whether they thought that the item measured team efficacy. They also rated how certain they were of their decision (on a scale of 1 = not certain at all to 10 = absolutely certain). Items for the final scale were selected based on two criteria. First, the majority of judges had to agree that the item was measuring team efficacy. Second, where there was high agreement, there also had to be high certainty that on a scale from 1-10 the item measured team efficacy. Using these criteria, 11 items for the team efficacy scale were chosen.

There were also no scales available to measure perceptions of the iron cage. Items were developed for this scale based on Barker's (1993, p. 434) discussion of the manifest and latent consequences of concertive control. Seven items representing the iron cage perception were developed. These were then revised and refined for a total of seven final items that were different from the original seven.

Questionnaire measures

The final questionnaire consisted of a summary sheet and three main sections. The summary sheet asked for data on team membership, months the team had been together, number of members in the team, program they were in, age, sex, and year of study. The first section measured team efficacy. The second measured transformational leadership. The third measured trust, commitment, and the iron cage perceptions.

The first section of the questionnaire measured team efficacy using 11 items. Items were reflective of the teams' perceived academic ability. Respondents were asked to rate on a five-point Likert scale (1 = not at all confident to 5 = extremely confident) the extent to which they felt confident that their team could successfully complete various tasks, actions and processes that contribute to successful academic performance. For example, "My team can contribute substantially to group discussions". This format was similar to the scale Parker (1998) used to measure role breadth self-efficacy. As Parker (1998) and others (Prussia *et al.*, 1998) point out, this method differs from Bandura's original method of asking people to indicate "yes or no" whether they can perform at certain levels (magnitude) and asking how confident they are in that endorsement (strength). Recent studies examining self-efficacy use strength measures only (Prussia *et al.*, 1998) and Bandura (1977) indicated that

the strength score was most relevant. We therefore used only an assessment of strength of team efficacy.

Four aspects of transformational leadership were measured using the Multifactor Leadership Questionnaire for Teams (MLQT) (Bass and Avolio, 1996). These include: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. This scale has been used in previous research and has acceptable psychometric properties. Subjects were asked to evaluate each statement in terms of their team's overall leadership behavior. They were to judge how frequently on average their team displayed the behavior described on a five point Likert scale from 0 = not at all to 4 = frequently, if not always. Examples of items include "Members of my team avoid controversial issues that would produce conflict" and "Members of my team go beyond their self interests for the good of the team". The reliability for the four dimensions of transformational leadership was an alpha of 0.96.

Team commitment was measured using items adapted from Ellemers *et al.* (1998). There were seven items in the final scale. Respondents were asked to indicate the number that corresponded to the extent to which they agreed with the statements with respect to their team. They were to indicate their agreement on a scale from 1 = strongly disagree to 7 = strongly agree. Examples of items are "I am prepared to do additional chores when this benefits my team" and "I try to invest effort into a good atmosphere in my team". Reliability for this scale was an alpha of 0.84.

Five items measured trust. The instructions and rating scale were the same as for the commitment scale. Trust in team members was assessed using items adapted from Jarvenpaa *et al.* (2000). Items in this scale included "The members of my team are trustworthy" and "I find it necessary to be cautious with members of my team (R)". Reliability was alpha 0.86.

The iron cage perceptions were measured with seven items constructed from Barker's (1993) description of this concertive control system. Again, the instructions and rating scale were the same as the commitment and trust sections of the questionnaire. Examples of items include "The behavioural norms we have developed enable us to work effectively together" and "We enforce rules through peer pressure". Reliability for the scale was an alpha of 0.78.

Results

Descriptive statistics and inter-correlations for all study variables are presented in Table I.

To assess the relative contribution of transformational leadership and iron cage perceptions to the prediction of the outcomes of interest we conducted a series of hierarchical regression analyses. In the first set of analyses, we entered transformational leadership on step one and iron cage perceptions on step two and assessed the change in R^2 associated with each step. In the second set of analyses we reversed the procedure, entering iron cage perceptions on the first step and transformational leadership on the second step. Thus, these analyses assess whether iron cage perceptions contribute to the prediction of study outcomes over and beyond the prediction attributable to transformational leadership (first set of analyses) and whether iron cage perceptions contribute to the prediction after controlling for transformational leadership (second set of analyses).

Results of these analyses are presented in Table II. In the first set of regressions, after accounting for the effects of transformational leadership, iron cage perceptions did not make a significant contribution to the prediction of team efficacy or trust. Iron cage perceptions did add to the prediction of commitment.

In the second set of analyses, perceptions of transformational leadership significantly added to the prediction of all criteria after accounting for the effects of iron cage perceptions.

Discussion

Our results suggest strong support for both of the hypotheses regarding the differential effects of transformational leadership and the iron cage on trust, commitment and team efficacy. Transformational leadership increases trust, commitment and team efficacy over and above the levels that a team achieves through perceptions of the iron cage. Strong values and norms within a team are still important in that they have an effect on the commitment that is felt within the team.

These results suggest that organizations implementing teams should concentrate on encouraging and training their team members in how to be effective transformational leaders. A culture of transformational leadership within the team should be promoted. This would seem to be a

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Table I

Descriptive statistics and intercorrelations for all study variables ($n = 42$)

Variable	Mean	SD	1	2	3	4
1 Transformational leadership	3.02	0.38				
2 Iron cage perceptions	5.09	0.52	0.50			
3 Team efficacy	4.03	0.31	0.64	0.24		
4 Trust	5.84	0.71	0.72	0.46	0.62	
5 Commitment	5.94	0.45	0.60	0.57	0.47	0.70

Notes: $R > 0.20$, $p < 0.05$

Table II

Hierarchical regression results (R^2 change)

	Efficacy	Trust	Commitment
Step 1			
Transformational leadership	0.41*	0.52*	0.36*
Step 2			
Iron cage perceptions	0.01	0.01	0.09*
Step 1			
Iron cage perceptions	0.06	0.21*	0.32*
Step 2			
Transformational leadership	0.36*	0.32*	0.13*

Notes: * = $p < 0.05$

more effective way to engender trust, commitment and team efficacy than the encouragement of strong values and norms. These strong values and norms can easily lead to rules that govern behavior of team members and constrain their behavior as powerfully as the hierarchical structure associated with bureaucracy had in the past. While the stronger perceptions of the iron cage did lead to increased commitment over and above what strong transformational leadership did, there may also be some negative consequences such as increased stress on team members (Barker, 1993).

This study does have some limitations. First, the data are cross-sectional and we cannot make any statements as to causation. It could be that strong transformational leadership arises due to team efficacy. Or perhaps within a team environment where members feel trust and commitment they feel freer to enforce value-based norms and rules. While the evidence to date would suggest that causation occurs in the direction we have posited this has not been tested in a longitudinal study. Second, the scales for team efficacy and the iron cage are new and have not been subjected to extensive validation. We did have acceptable reliability for all the scales but there is a chance that given further use they may not stand up as valid. Finally, the use of student samples may limit the generalizability of our findings. The use of Executive MBAs does mitigate this concern to some extent, as these are students

who are also executives in the corporate world.

Despite these limitations, this study is still the first test to date of the rival hypothesis that teams could experience high trust, commitment and team efficacy as a result of their development of strong concertive control systems as easily and effectively as they could through transformational leadership. As such it is important evidence of what organizations would best concentrate their team development efforts on. Organizations that have a team structure may find that teams will benefit most from a focus on transformational leadership. Let the strong group values and norms take care of themselves.

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