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Transformational leadership as related to team outcomes and contextual moderation

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Abstract

Purpose – On the basis of the full-range theory of leadership of Bass and Avolio, several hypotheses designed to examine the relationships of transformational leadership style with group outcomes in army training teams, in differing contexts were tested. These outcomes consisted of cohesion, learning culture and members' self-efficacy. It is the purpose of this paper to determine whether the effects of leadership style of trainers is universal across teams from various contextual backgrounds.

Design/methodology/approach – The population comprised 890 cadets in the basic, operations and support, and infantry tracks in an officers' training school of the Israeli Defense Forces. They were organized into 66 teams. Data were collected in two stages, by means of Form 5X of the multi factorial leadership questionnaire (Bass and Avolio). The moderation of track context on the relationships between leadership style and group outcomes was analyzed, by means of moderated regressions.

Findings – Findings do not support the universality of relationships predicted according to the theory. Only in the case of the basic track was transformational leadership style related to the group outcome of learning culture. In this track as well, transformational leadership was slightly related to group cohesion. The study points to the importance of the moderation of context in the relationships of leadership styles and group outcomes, and raises questions regarding the universality of leadership style relationships in groups according to the full-range theory. The possible importance of group background as a moderator is discussed.

Originality/value – The study emphasizes recent research indications as to the importance of contextual considerations in the study of relationships of transformational leadership to group aspects.

Keywords Leadership, Transformational leadership, Learning styles, Self esteem

Paper type Research paper

The full-range leadership theory of Bass and Avolio (1991) has been the focus of the majority of leadership studies in recent years. Their model identified initially nine factors which describe leadership styles, but later Bass and Avolio (1993) questioned the empirical usefulness of such numerous factors, and suggested combining them into three – the transformational, the transactional and the avoiding, or passive, style. These have been shown to provide a fairly exhaustive description of leadership behaviors that are related to followers' behaviors. The model proposed that leaders exhibit a profile of such behaviors in different situations, and that the relative dominance of one of these behaviors characterizes his/her leadership style (Bass and



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Avolio, 1994). These leadership styles have been found to relate differentially to a variety of groups and individual outcomes, and there has been no controversy regarding the predictive nature of the theory (Antonakis *et al.*, 2003). The theory claims that the three leadership styles are hierarchically structured, so that the optimal leader is the one who exhibits mostly the transformational style, and to a lesser extent the transactional and avoiding styles (Avolio, 1999). It has also been claimed that these styles and their effects are universal.

Recently, leadership literature has emphasized that the theoretical neglect of group level characteristics in exploring the relationships between leadership and its effects on the group and on the individual may obscure some important aspects of the dynamics and universality of such impacts (Viteles, 2001). It has also pointed to the need to specify the level of analysis, i.e. individual, unit and/or organization, when studying leadership style impacts (Shamir *et al.*, 1998; Yammarino *et al.*, 1998).

The notion of the universality of the effects of leadership style on followers has been critiqued and reformulated since Fiedler's (1967) early work. Since then studies have specified various contextual impacts on this relationship, such as size of team, nature of the task, type of environment and organizational culture (Antonakis *et al.*, 2003; Bass, 1990; Bruch and Walter, 2007; Hunt and Conger, 1999), and thus raise the question of the universality of impacts of such leadership styles. Yammarino *et al.* (1998) also pointed to the need of extending findings on such relationships to contexts other than those generally studied in business and the like.

In the present study we are interested in studying to what extent, in an army officers' school, different team contexts of cadets are associated with the transformational leadership style (TFL) of trainers-leaders, and to what extent they moderate the relationship with group and individual outcomes. The team contexts of interest are three training tracks for Israeli cadets. The individual cadet is placed into one of these tracks according to his affiliation as a soldier in a specific army corp. The differences among these tracks will be discussed below.

The overall goal of the officers' training is to shape the cadet into the ideal image of an officer. The values expected to guide the officer are "humanistic-ethical, commitment, professionalism, guidance, comradeship and team work, service and action, military basics, personal example, modesty and learning, task orientedness, thoroughness and method" (Army Training Manual, 2004). The leader-trainer is expected to develop an open and trustful relationship with the cadets, to serve as a "father to adults", and the preferred training style is the transformational (Gonen, 2000).

Our purpose is to examine the relationship of the transformational leadership style with the teams' behavioral outcomes of learning culture and cohesion, and with the self-efficacy of its member-cadets. We are also interested in examining the extent to which these differ or are similar in the different contexts of the teams.

The teams are organized into the training tracks on the basis of their regular army corps affiliation. The corps from which the tracks originate differ in their culture and history. The infantry corps have a tradition that originated in the early informal, battle-honed culture of the pre-state underground movement, with close relations between soldiers and commanders, no formality, and comradeship. On the other hand, the Operations and Support corps is rooted in the British army cultural tradition of strict discipline, social distance in the hierarchy, formality, and emphasis on innovative technologies, which requires constant learning. The Basic track is a collection of cadets

with a heterogeneous army backgrounds, no battle experience (Goldberg-Weil, 2000), and therefore no specific uniform cultural characteristics. We found no published studies of the cultural differences among the tracks, but it is "common knowledge" in the army that the cultural differentiation between the tracks is as described above. This led us to consider the track as an important cultural-contextual moderator in the expected relationships between TFL and team outcomes.

While the organization into tracks reflects the corps affiliations of their trainees, the task environment at this initial stage of training in the officer's school is similar in all three tracks, and the training platform for all is that of the infantry. Team sizes are also almost identical. All trainer-leaders are graduates of the Leadership School.

Hypotheses

Track, leadership style, and team outcomes

Influences of leadership styles are often moderated by several aspects of group culture such as norms of collectivism versus individualism, learning culture, or military tradition (Abrams *et al.*, 1998; Goldberg-Weil, 2000; Popper and Lipshitz, 1991; Viteles, 2001). It has also been shown that among military units, for example, there are cultural-organizational differences, differences in leadership expectations and in leadership perceptions, according to their function (Dvir *et al.*, 2002; Mannheim and Avraham, 1989). For example, infantry officers adopt a more transformational style while officers of armored forces adopt a more transactional style of leadership. But the less combat-oriented cadets evaluate transformational trainers higher than do combat-trained cadets (Goldberg-Weil, 2000). Such perceptions become eventually part of group norms and expectations concerning leadership behaviors.

In the training context of this study, the Infantry track is the most combat-experienced, and has had close relationships with previous direct commanders. This is a strong common ground for its cadets, generating considerable team homogeneity from these points of view. On the other hand, the Basic track consists of cadets with heterogeneous army experiences and with very little common backgrounds. The Operations and Support track is somewhere between the two, having combat experience and a strong technological orientation based on continuous learning. This leads us to expect different perceptions of the leadership style exercised by the trainer-leader by the cadets in the three tracks. However, we cannot predict with much assurance the direction of such differences: It seems reasonable that the combat-experienced cadets, such as in the infantry and OS tracks, are more critical of their training-leaders, and therefore consider them lower on the valued transformational behavior than would those in the Basic, non-combat-experienced cadets. Yet for lack of past studies on this issue, we adopted the prudent way of a not predicting the direction of differences, and therefore we formulated the following hypothesis:

- H1. Team perceptions of leadership style will differ by track, but we cannot predict the direction of these differences.

Learning culture is an important aspect of group culture in organizations in general and in training situations in particular. It is one of the main functions of the trainer-leader to promote individual and group learning. Schein (1997) suggests that leadership and culture are mutually related, and Popper and Lipshitz (1995) propose

that the function of leaders concerning organizational learning is threefold: To put learning at the center of the organizational agenda, to establish structural bases for learning, and to generate cultural and psychological conditions of trust. They also suggest that the transformational leader generates more of a learning culture than non-transformational leaders. This would be so by virtue of the definition of transformational leadership as comprising "intellectual stimulation" and "inspirational motivation". The transformational leader focuses on new norms, creative behaviors, and relevant values that contribute to its adaptive culture. In a training situation, the creation of learning culture is essential in order to establish learning norms among the trainees, and is one of the most important behavioral outcomes for the teams of trainees.

Thus we may conclude that a transformational leadership style of the trainer should be conducive to the promotion of a learning culture in the teams. There is no reason to expect that the relationships between TFL and learning culture will differ by training track.

Therefore we hypothesize that:

- H2.* Transformational leadership correlates positively with learning culture in all tracks.

Evidence suggests that the transformational leader affects group processes positively (Atwater and Bass, 1994). Specifically, Walumbwa *et al.* (2005) state that twenty years of leadership studies have shown that leaders who exhibit the main components of the transformational style generate higher level of commitment, satisfaction and effort on part of their followers. These leadership components are also conducive to group cohesion (Conger *et al.*, 2000), which has been proven to be a basic condition for the effectiveness of military units (Bartone and Kirkland, 1991), and which promotes their strong behavioral norms (Antonakis *et al.*, 2003). As quoted above, "comradeship and team work" are declared values in the training at the officers' school. One could expect therefore that transformational leadership style of the trainer-leader is instrumental in developing team cohesion in all tracks, by means of charisma and modeling, and by coordinating team efforts toward the training goals. On the other hand, the common past relationships and commitments of the OS and Infantry tracks to their corps of origin to which they will return, might reduce the influence of TFL of their present leader, while the lack of common experiences of cadets in the heterogeneous Basic track, might strengthen the relationships of TFL with their cohesion.

Thus we hypothesize:

- H3.* Track moderates the positive relationship of transformational leadership with team cohesion. This relationship will be stronger in the Basic track than in the other tracks.

Leadership style and self-efficacy

The relationships of transformational leadership to individual attitudes have been exhaustively demonstrated (Yammarino *et al.*, 1998), and it is of interest to see how each individual cadet is affected by his perceptions of his trainer-leader's style of behavior. Self-efficacy represents an individual's belief in his/her capabilities to successfully accomplish a specific task or set of tasks, and is a central component of social learning theory (Bandura, 1997). It is also related to motivation and collective

efficacy (Bass and Avolio, 1994; Dvir *et al.*, 2002; Walumbwa *et al.*, 2005). As Gully *et al.* (2002) noted, self-efficacy perceptions reside within individuals. We believe that in a training situation, where cadets will return individually to their units, individual self-efficacy, rather than collective efficacy, is the desired outcome of leadership.

Since transformational leadership acts on the individual by implicating his/her self concept, thereby elevating self-efficacy, we may expect that this style impacts self-efficacy positively. (Dvir *et al.*, 2002; van Knippenberg *et al.*, 2004; Shamir, House and Arthur, 1993; Shamir, Zakay, Breinin and Popper, 1998; Walumbwa *et al.*, 2005). In the case of self-efficacy, we expect no contextual moderation by track, since this is an individual outcome with which no particular group background, except possibly education, should be associated.

We hypothesize that:

- H4. Transformational leadership will have a positive relationship with self-efficacy. There will be no moderations by track.

Respondents and procedure

Respondents. The study was conducted in an all male officers' training school of the Israeli Defense Forces and the population ($N = 890$) consisted of five battalions in three training tracks: basic officers training, operations and support (OS) officers training, and infantry officers training. Training in the school constitutes the first training stage of cadets and lasts 11-12 weeks. The second stage is conducted in the specific corps from where the trainee originated, and is not included in this investigation. The basic track trains non-combat, professional officers for the platoons in the different corps, such as the air force, or intelligence. They generally are sent to the school later in their service than cadets of the other tracks. The OS track trains platoon combat officers who also employ sophisticated technological means. The infantry track prepares combat officers for the rank of platoon leaders in the field corps.

The declared and enacted policy of the school is to coach the trainers in the transformational leadership style (TFL), and training is expected to be conducted in this style in all tracks. Training materials are based mostly on combat literature and experiences, and the trainers-leaders are all graduates of the school. The training unit is the team, which consists of 13-18 cadets, led by the team trainer, or leader. We had altogether 66 teams, with an average of 14 cadets by team. The basic track comprised 27 teams, the OS comprised 24 teams, and the infantry consisted of 15 teams.

All cadets in the study had at least a high school education, but the proportion differed among the tracks, with cadets in the infantry track having no higher education than high-school or vocational-technological training. The highest level of education was found in the basic track, where close to 20 percent had a college education, and in this they differed significantly from the two other tracks, with a mean of 13 years, as compared to the mean of 12.1 years. These differences were significant by Duncan's multiple range test ($F = 85.86$, $p < 0.00$). In this track there was also a greater dispersion of educational level.

Additional entry requirements to officers' training were more or less similar in all three tracks, and were distributed similarly. All trainees were sent to the school from their corps as individuals toward the end of the second year of their service. Tenure in the basic track was higher than in the OS track (28.4 months v. 20.2

respectively), and more varied. We have no exact tenure data for infantry, but for all it was within the range of the second year of service. The mean age was 19.4 years.

Instruments

Track. Training track is the discrete contextual variable which is used as the moderator, and consists of the basic track, the OS track, and the infantry track.

Leadership. We used three forms of questionnaires. The first form was answered by the cadets describing the leadership behavior of their team-trainer. For this purpose we used the Multi Factorial Leadership Questionnaire, Form 5x, by Bass and Avolio (1991), which had been translated into Hebrew by the Leadership Development School of the army, and had been used routinely. It consists of 36 Likert-type items with a five-point response scale. This is the most used survey instrument that assesses the nine factors of the full range leadership theory and is considered to have considerable predictive quality (Antonakis *et al.* 2003).

We analyzed the responses according to the various sub-groups of the items proposed by Avolio *et al.* (1999), and found that the first factor contained 20 items consisting of the four first-order dimensions named originally by Bass and Avolio (1994) as follows: Idealized influence, Inspirational motivation, Intellectual stimulation, Individualized consideration. Following Walumbwa *et al.* (2005) we combined the four dimensions into a global factor of Transformational Leadership (TFL) (Dvir *et al.*, 2002). This global factor had the highest reliability (Table I). The scores obtained for each item of the leadership style (TFL) were summed and averaged by teams and assigned to each team-leader.

Team outcomes. The second form comprised items describing the team outcomes of group cohesion and learning culture. It was filled out by cadets describing their team relationships. Group cohesion was measured by five items (Zakai, 1984). For example: "How satisfied are you that you act together with your team?" Group learning culture was based on Popper and Lipshitz (1995), and consists of 33 items. For example: "Everyone in the team is responsible to learn also from the mistakes of others". All items had five-point response scales, and scores were summed and averaged by teams, and assigned to team members.

Individual background. The third form contained demographics such as education, and the individual characteristic of self-efficacy.

Self-efficacy. Six items were taken from Givoni (1997), who had based them on the Academic Self Efficacy (ASE) questionnaire developed by Wood and Locke (1987). The items were formulated to represent tasks which would be specific to their future as an

Table I.
Means, standard
deviations, reliabilities,
Rwg, and
intercorrelations of
variables ($n = 66$)

Variable	Mean score	SD	Alpha Cronbach	Median Rwg	Correlations		
					1	2	3
1. TFL	3.48	0.69	0.94	0.94			
2. Team cohesion	3.90	0.53	0.75	0.92	-0.05		
3. Learning culture	3.84	0.45	0.92	0.97	0.34**	0.67**	
4. Self-efficacy 2 ($n = 719$)	4.22	0.41	0.68	0.92	0.05	0.31*	0.21

Notes: * $p < 0.01$; ** $p < 0.001$

officer. An example item for self-efficacy is: How do you evaluate your ability to succeed in motivating soldiers during routine activities?"

The questionnaire of self-efficacy was administered twice – once during the first week of the course, and then again with the other two questionnaires during the seventh and ninth week of training, toward the end of the course. This length of time enabled the cadets to develop as teams and adapt to the leadership styles of the trainers. It also provided comparative data on self-efficacy, under the assumption that self-efficacy at Time 1 might be strongly related to the same variable at Time 2, and therefore obscure the effects of TFL. Due to the training schedule, the Infantry track was unavailable for the first testing period for this variable.

Data analysis

The team outcomes and team leaders' TFL ($n = 66$) were examined by means of the median Rwg, which, for large values, justifies the characterization of a team beyond the scores of its individual members, and establishes its homogeneity (James *et al.*, 1984). The results allowed the treatment of the team as a unit of analysis.

Analyses were conducted by means of moderated regressions, with track dummy-coded.

Results

The data

Table I presents the mean scores, reliabilities and intercorrelations of the study variables. All scales had acceptable reliabilities.

The median Rwg coefficients for all variable scores (above .70) indicate that the teams are homogeneous within. A separate ANOVA analysis shows that the teams are heterogeneous with reference to each other on all scores ($F = 7.53, 3.25, 2.98, 1.99, 1.90$ respectively, all $p < 0.01$). This allows for the use of team scores as team characterizations.

Tests of hypotheses

Track and leadership. We expected different levels of TFL in the three training tracks, and these are presented in Figure 1.

On the basis of ANOVA and Tukey grouping, we found that TFL is highest in the basic track ($M = 3.67, p < 0.01$), lowest in infantry, and intermediate in OS ($M = 3.38$). OS and infantry do not differ on this style ($M = 3.38, M = 3.26$ respectively), and they differ significantly from the basic track ($p < 0.01$). Thus, that *H1* supported.

TFL, learning culture and group cohesion. The second set of hypotheses predicts relationships between perceived TFL and team outcomes. For these tests we conducted correlational Pearson analyses between the variables, and these are presented in Table I. The table shows a significant correlation between TFL and learning culture of the teams, but none between TFL and team cohesion, as well as self-efficacy. Since we expected that track will moderate the relationships between leadership style and team outcomes, we conducted moderated multiple regressions of TFL on group outcomes. These regressions are presented in Tables II-IV. Owing to the significant differences in the educational level of the cadets in the three tracks, we entered education as a control variable in all analyses, and track served as the moderator (Tables II-IV).

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Figure 1.
Levels of TFL by training
track

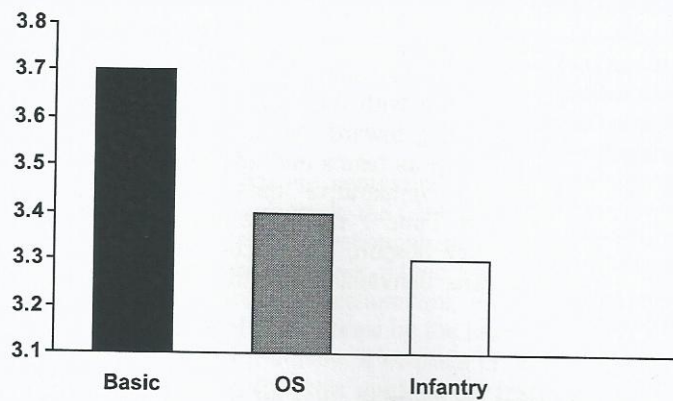


Table II.
Results of moderation
analysis for learning
culture of teams ($n = 66$)

Variable	Parameter estimate	SE	<i>t</i> value	Pr > <i>t</i>
Intercept	3.769	0.937	4.02	0.00
Education	0.002	0.074	0.03	0.97
Transform	0.010	0.105	0.10	0.92
Track 1 (Basic)	-0.219	0.458	-2.66	0.01
Track 2 (OS)	-0.07	0.427	-0.18	0.87
Track 3 (Infantry)	0.000			
Transform*track 1	0.337	0.131	2.56	0.01
Transform*track 2	-0.016	0.128	0.12	0.90
Transform*track 3	0.000			

Notes: $R^2 = 0.26$; Model $p < 0.01$

Table III.
Results of moderation
analysis for cohesion of
teams ($n = 66$)

Variable	Estimate	SE	<i>t</i> value	Pr > <i>t</i>
Intercept	4.228	1.349	3.13	0.00
Education	-0.007	0.106	-0.07	0.95
Transform	-0.034	0.151	-0.23	0.82
Track 1	-1.327	0.659	-2.01	0.05
Track 2	0.000	0.615	0.00	1.0
Track 3	0.000			
Transform*track1	0.303	0.189	1.60	0.11
Transform*track2	-0.032	0.185	-0.17	0.86
Transform*track3	0.000			

Notes: $R^2 = 0.22$; Model $p < 0.002$

It can be seen that track moderates the relationship between TFL and learning culture. This relationship is significant for the basic (1) as compared to the other two tracks. Altogether, the explained variance of learning culture by this model is $R^2 = 0.26$, $p < 0.01$. For the second team outcome, cohesion, the Basic track (1) differs in its

relationship with TFL from the other two tracks, though the moderation term only approaches significance. The explained variance by the model for team cohesion is significant ($R^2 = 0.22$, $p < 0.02$) (see Table III).

In sum, TFL has its major effects only in the Basic track both on cohesion and on learning culture.

The next analysis concerns the TFL relationships with the more individualized outcome, namely the sense of mean self-efficacy in the teams. For this analysis, we introduced the initial score of self-efficacy at Time 1 as a control, in order to prevent the influence of pre-training level of this variable. It should be noted that due to the fact that Track 3 (infantry) did not participate in the Time 1 test, the number of tracks for self-efficacy 1 is less than for learning culture and cohesion. Thus, results for basic track (1) can be compared only to the OS track (2). As can be seen in Table IV, the moderation analysis shows that TFL is not related to team self-efficacy in any track.

In view of these results, and in consideration of the fact that self-efficacy is a belief of the individual in him/herself as a person, a belief which each cadet should develop and carry forward to his future as an officer in his corps, we assumed that possibly there are relationships between TFL and individual self-efficacy, without reference to membership in a particular track. As Shamir *et al.* (1998) stress, the decision whether to analyze a particular relationship on the individual or the group level "should be made on the basis of theoretical and not statistical considerations". Schriesheim *et al.* (2006), for example, maintain that, theoretically, leadership phenomena could operate on the group and or on the individual level. Considering the self-evaluative nature of self-efficacy, we felt justified in conducting additional analyses of TFL relationships with self-efficacy on the individual level. We obtained a direct correlation of $r = 0.16$, $p < 0.001$ between individual self-efficacy and TFL. This correlation is significant, but low.

Summary and discussion

The major finding of this study is the specification of leadership relationships to team outcomes for a particular track. All leaders-trainers had been coached to apply a transformational style in all three tracks, and indeed all three obtained relatively high scores on this TFL. Yet the predicted relationships of leadership style with team outcomes were found mainly in the basic track. In this track, the transformational style (TFL) impacted the group outcomes of learning culture and group cohesion.

Variable	Parameter estimate	SE	<i>t</i> value	Pr > <i>t</i>
Intercept	1.788	0.840	2.13	0.04
Efficacy1	0.719	0.111	6.47	<0.00
Education	-0.598	0.054	-1.10	0.28
Transform	0.035	0.052	0.68	0.50
Track 1	-0.121	0.282	-0.43	0.67
Track 2	0.000			
Transf*track1	0.038	0.078	0.49	0.66
Transf*track2	0.000			

Notes: $R^2 = 0.27$; Model $p < 0.00$

Table IV.
Results of moderation
analysis for self-efficacy 2
of teams ($N = 45$)

The first group outcome of interest was learning culture, since this feature of the training situation is one of the main functions of the trainer-leader. Here we find that the transformational leadership style does have an impact on learning culture in the basic track only. Basically, learning culture is an aspect of group norms, and these seem to develop mainly in the basic track possibly due to the lack of past common background of the teams.

The finding that TFL has no influence on group cohesion in two of the three tracks is contrary to findings in several other studies (Atwater and Bass, 1994; Conger *et al.*, 2000), and contrary to our predictions. Presumably this is due to the fact that the training course is defined as "an individual course", where individual achievement is stressed by the trainers, expected by the cadets, and organizationally rewarded. It could also be due to the known temporary nature of the course, and to the fact that the trainees had previously developed attachment to their "primary" military group from where they came. This background factor does not exist in the Basic track, and therefore the transformational style can mold the group of individual in the teams into a cohesive group.

Contrary to our expectations and to the cited literature (e.g. Shamir *et al.*, 1993), self-efficacy is not related to TFL. Presumably this is due to the initial very high level of this variable at the entry of the cadet into the course ($M = 4.17$), and to its high correlation with self-efficacy at Time 2.

There remains the question why the transformational style has the positive expected relationships mainly in the basic track, even though entry requirements, style and contents of training were similar in all three tracks. It might be argued that the relationships obtained are due to same-source bias. But if that were so, then this should occur in all tracks, and not only in the basic track. Moreover, as Schriesheim *et al.* (2006) maintain "the testing of moderator predictions is, in itself, a partial control for same-source bias". We propose that background team factors play a part in the results. One background factor that differentiates among tracks is combat experience. The training platforms of all tracks are infantry experiences, but Basic cadets have had no such experiences before, while the others had them. Consequently the training course is the first occasion for basic cadets to experience the close interaction with leaders-trainers under field conditions. Possibly this is another factor which sensitizes them more to transformational leadership behavior, presumably its components of idealized influence and inspirational motivation. Cadets in the other tracks, especially in infantry, are likely to have experienced such leadership influence before in their primary teams (Mannheim and Avraham, 1989), and are therefore less affected by the current style of their trainers.

A second background factor that differentiates among the tracks is their educational background. The basic track had a higher level of education than the other tracks. This is likely to lead to greater appreciation and responsiveness to the intellectual stimulation component of transformational leadership. On the other hand, history tells us that charismatic leaders have great appeal to the masses that are not necessarily characterized by high education. Unfortunately, we have found no literature to support this conjecture. This it is worth exploring this issue further.

A final differentiating factor among the tracks is group culture as it relates to military function. A study by Goldberg-Weil (2000) demonstrated that officers in the armored corps are more transactional than in infantry units such as parachutists, who

tend to be more transformational. She also found the latter to be more informal and open in their relationships with their team and more emotionally involved. This could be the result of the military tradition in infantry, which evolved from the group culture of the historic, Israeli underground Striking Force. In the OS, on the other hand, tradition has it that it was influenced by the British army, where a number of its founders had served (Ronen, 1989). All this leads to a different group climate in the two units. This might relate to the differences found in the present study between OS and infantry, and between infantry and basic.

Thus, we may conclude that the dominance of impacts of the transformational leadership style as derived from the full range of leadership theory is mostly applicable to one particular context, and is not universal across training contexts.

The results of this study leave several issues open to further research. The absence of influence of transformational leadership on team cohesion in the OS and infantry tracks deserves further study of the group characteristics that promote or prevent such influence. We have suggested that these tracks had prior experiences with membership platoons and commanders in the field, with whom they may have developed cohesive relationships. These may hinder them in developing such relationships in the present, somewhat temporary situation. Hence, group history seems to be a possible limitation on the effect of TFL on cohesion.

A further question opened by this study is whether educational background in particular contexts is related to greater receptiveness to transformational leadership. This deserves further study.

Limitations of the study

The fact that we obtained the TFL descriptions from the cadets and not from an objective source, such as superiors, constitutes a limitation of the study. Presumably, this may have colored the data by social desirability, and may also have placed a ceiling on the ratings. However, this limitation applies to all tracks, and not exclusively to the Basic track. A second limitation derives from the number of teams. We had 890 cadets in the sample, which constituted 66 teams, and, when subdivided into three tracks, yielded a relatively small number of teams in each track. The small sample size resulting from measurement at the team level may have limited the number of statistically significant findings. Nevertheless, we obtained sizeable correlations for the Basic track, and quite small, insignificant correlations for the other two tracks.

A final limitation derives from the use of global scores of the leadership styles. The use of global rather than specific scores of the components of Bass and Avolio's styles has been debated in the literature. Bass and Avolio (1991, 1993) question the empirical justification of using the eight detailed components of the model. But Den Hartog *et al.* (1997) and Antonakis *et al.* (2003) defend the use of the detailed scores for consulting and training purposes, yet advise the use of the three-factor model as the most useful empirical research tool.

Future studies should examine in greater depth what particular aspects of group contexts characteristics promote the influence of leadership style, and under what conditions they serve as moderating variables. The present study was conducted in army training units, and we might ask whether similar results would occur in other organizations and contexts. We believe that one should examine leadership style relations in specific contexts. This would apply to different units of business and

industrial organizations where task characteristics differ, such as marketing and production, where group sizes may vary, as well as demographic composition, particularly gender (Antonakis *et al.*, 2003). In the latter case one might speculate that TFL will have a wider spectrum of outcomes than in army or only male contexts. These issues deserve further study.

In sum, the study expands our knowledge of the social scope of the impacts of transformational leadership, and stimulates further explorations of the importance of contextual considerations.

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