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Leaders and Non-leaders: A Comparative Study of Some Major Developmental Aspects

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Leaders and Non-leaders: A Comparative Study of Some Major Developmental Aspects*

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Abstract: The research presented here is based on the assumption that there are unique features in the development of leaders in social and organizational settings. Fifty Israeli soldiers who were perceived as leaders by their commanders and peers were compared with 30 soldiers who received low scores on leadership evaluations. The participants were selected out of a group of 286 soldiers on a combat training course. Differences were found between those perceived as leaders and those who scored low on leadership evaluations, in developmental aspects such as relations in the family, expectations transmitted to them by the family, exposure to models of leadership, experiences of leadership roles in social frameworks, and openness to experiences.

LEADERS AND NON-LEADERS: A COMPARATIVE STUDY OF SOME MAJOR DEVELOPMENTAL ASPECTS.

Most of the writing on the development of leaders is characterized by (a) a focus on outstanding leaders, and (b) also takes a mainly psychoanalytic view of leaders' development (Burns, 1978). Typically, leadership scholars from psychodynamic schools of thought (e.g. Aberbach, 1995; Kets de Vries, 1989; Zaleznik, 1992), identified in some well-known leaders similar types of socialization in early childhood, which, they claim, may indicate distinct patterns of development of leadership. For instance, several leaders' analyses reveal a close relationship between the future leader and the mother, sometimes as the mother's favorite child. Other studies point to the absence of a father in childhood (statistically more than the general average: Iremonger, 1970), a situation that may develop self reliance and a sense of mission in life (Zaleznik, 1992). In addition, scholars point to the expectations of greatness projected by at least one of the parents (Kets de Vries, 1989), and to existing compensation mechanisms, for which, where leadership is an answer to psychological deprivations in childhood (Aberbach, 1995; Kets de Vries, 1989). The literature also notes the importance of exposure to esteemed authority figures in the family or in social circles close to the family (Burns, 1978).

Such arguments appear in a steady stream of books about successful leaders of organizations, most of them based on the leaders' personal memoirs, anecdotes, and outlooks (Bennis, 1989; Bennis & Nanus, 1985). Although psycho-biographies as well as recollections of known leaders might have clinical and practical applications, they are clearly limited with regard to the possibility of generalization.

In recent years, there have been some attempts to conduct studies that have attempted to attain more generalizable value. For example, some research has engaged in locating predictors of leadership, generally

identifying leaders on the basis of a certain criterion (e.g., final results in military academies or command courses) and examining predictors such as early leadership experiences and their weight in that criterion (Atwater, Dionne, Avolio, Camobreco, & Leu et al., 1999; Judge & Bono, 2000; Klonsky, 1983; Popper, Amit, Gal, Sinai, & Lisak, 2004). Other recent studies, have focused on the effect of psychological processes during adolescence, which is recognized as a period time of great importance for the development of the adult identity (Erikson, 1959)- as a source of motivation and of the feeling of ability to lead (e.g. Atwater et al., 1999; Schneider, Paul, White, & Holcombe, 1999; Zacharatos, Barling & Kelloway et al., 2000). There are also some reports on the impact of practices such as coaching, feedback, and learning through doing on leaders' development. Usually, these findings refer to data from before and after the intervention or training, in most cases reported by the people investigated themselves (Day, 2000). All these studies, as mentioned, are based either on psychodynamic premises or learning theories frameworks. Very few attempts have been made to formulate a theoretical framework that is more integrative and particularly oriented to explain leader development.

Gibbons (1986) examined the developmental process of transformational leaders through in-depth personal interviews conducted with a sample of senior managers who were asked to talk about events and experiences in their past from childhood to maturity. She analyzed the events using a combination of three developmental theories: psychoanalytic theory, which focuses on experiences in early childhood (see Zaleznik, 1992), humanistic theory, which deals with internal processes of awareness and self insight (see Allport, 1961), and structural theory, which discusses the interpretation and meaning ascribed by individuals to their experiences (see Kuhnert & Lewis, 1987). Popper and Mayseless (2002), Popper et al. (2005, 2007) and Popper & Amit (forthcoming) developed a leadership formula comprised of three essential components: psychological potential to lead (P), motivation to lead (M) and developmental processes occurring in later phases in life (D). They claim that the P and M components of this "leadership formula" are formed in the family during early childhood. Of particular importance is the type of bonding the care giver (usually the mother) establishes with the infant (e.g. attachment pattern). The D component is essentially based on experiential learning, that is, experiences occurring in school, sports teams, and other social settings in which the individual takes part.

In sum, the main arguments discussed in the literature on leader development indicates that basically four factors are presented: 1. Conditions and expectations in the family during childhood (Campbell & Dardis, 2004; Klonsky, 1983; Popper, 2005; Shamir & Eilam, 2005). 2. Leadership experiences (Akin, 1987; Atwtater et al., 1999). 3. Exposure to leadership role models (Akin, 1987; Bennis, 1989; Kortter, 1990). 4. Openness to experiences (Bennis, 1989; Judge & Bono, 2000). It can be clearly noticed that one out of the four factors is a personality factor (openness to experiences) whereas all the rest are all circumstantial (atmosphere in the family, leadership experiences, exposure to leadership role models). This study aims at exploring the significance and weight of each of these factors (particularly the importance of the personality variable versus the other variables). We also believe (unlike the reviewed studies that focus solely on leaders) that only through comparison of leaders to non-leaders light be shed on possible unique aspects of leaders' development. The following hypotheses relate to the factors noted.

1. Family conditions.

Empirical psychological studies conducted in this domain are very few in number (Popper, 2005). Klonsky (1983) studied the family sources of for the development of leadership ability and examined variables such as extent of warmth exhibited by the parents, and the extent and quality of discipline. His research results showed that individuals who were characterized as leaders had undergone intensive socialization. They had received much warmth, but at the same time were subjected to a high level of discipline and were expected to display responsibility and achievements. Similar findings were reported

by Kotter (1982), and by senior commanders in the Israeli army (Zakay & Scheinfeld, 1993). Accordingly, our first research hypothesis, in comparing leaders with non-leaders, higher expectations transmitted upon the leaders will be reported. The leaders experience more pressure for achievement (including leadership), and have better relations with parents compared to non-leaders.

2. Leadership experiences.

All the major theories dealing with of learning and developmental psychological processes explicitly or implicitly place experience at the center of the learning process. For example, the learning theories generally identified with Skinner (1989) are based on the law of effect, according to which behavior is guided by past results. If a certain behavior was rewarded in the past, thus receiving positive reinforcement, the probability of that behavior appearing in the future is higher, while unrewarded behaviors will probably appear less and less and may even disappear. More abstract learning according to some leading developmental psychologists, also occurs through processes arising out of experience. For example, Kohlberg (1969) illustrated this with studies on the development of moral thinking, using a strategy defined as role taking experiences, in which an individual has to adopt the point of view of the other. This experience was found to lead to more complex thinking and greater understanding of the other's judgment.

Aspects such as self-efficacy also develop on the basis of experience. Bandura (1977a, 1986), for example, showed that the sense of success based on experiences in certain areas led to the strengthening of self-efficacy in those areas. These principles have proved relevant and applicable in the area of leadership development. Akin (1987) and Kotter (1988) reported that managers retrospectively viewed practical experience as a cardinal learning experience in their development as leaders. Successful experiences in leadership roles, whether in the family framework or in educational or social frameworks, not only show the individual that he or she is perceived by others as a leader, but they also strengthen his or her own belief in his or her ability to be a leader. Leaders' testimonies revealed that personal experience was an important element in their learning of leadership (Kotter, 1988, 1990). Atwater et al. (1999), seeking predictors of leadership, examined a large number of mental and physical characteristics of freshmen in a military academy. They found that past leadership experiences and self-efficacy differentiated levels of leadership most clearly; students with a rich background of leadership experiences and high self-efficacy belonged to the highest level of leadership. Thus, our second research hypothesis is that leaders will report on more leadership experiences in childhood than non-leaders.

3. Exposure to leadership figures.

Some of the mechanisms that have been found central in processes of learning through experience have also been found relevant for learning that does not stem from direct experience but is based on observation of the behaviors of others. This process was defined by Bandura (1977a, 1986) as vicarious learning. Since every individual is subject to countless stimuli, scholars have attempted to identify and analyze the psychological conditions that are necessary for vicarious learning to take place and be internalized (Bandura, 1997; Maddux, 1995). They found (consistent with the findings of research in learning theory) that when the individual observed was perceived as receiving positive reinforcement, the tendency to emulate his behavior was strengthened. Thus, according to the evidence of leaders, learning about leadership also occurs through observation of or exposure to leadership models (Burns, 1978; London, 2002; Popper & Mayseless, 2002). This argument is supported by findings in leadership research. Leaders in organizations reported that they had learned a great deal about leadership by observing other leaders, particularly their direct managers or officers (Kotter, 1988; Zakay & Scheinfeld, 1993). The possibility of learning through observation is very important, because it expands the opportunities of learning a broad range of behaviors that occur in situations too complex to be created

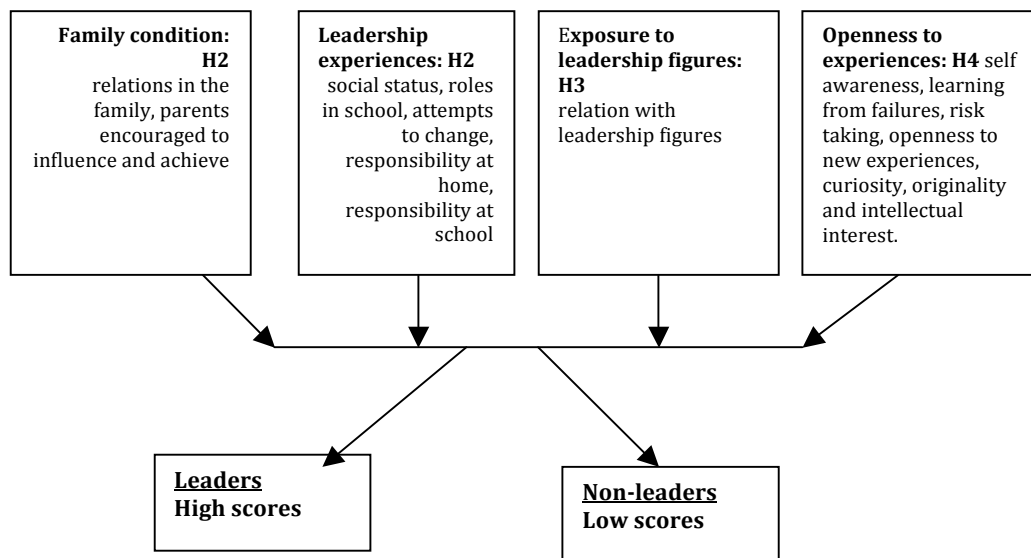
artificially for the purpose of providing direct experience (e.g. crisis situations, battles). In light of this, our **third research hypothesis** is that leaders will have more leadership role models than non-leaders.

4. Openness to experiences.

This factor includes internal abilities that affect the scope of the exposure and experience, and also the quantity and quality of the reflective process in the leader's development. The assumption is that people who have the ability to look at themselves and their environment without a rigid armor of defenses will be exposed to more opportunities for learning and will be capable of learning more from their experiences than will people who possess this ability to a lesser degree. In their study, Judge and Bono (2000) have found a modest relationship between openness to experience (one of the Big Five factors of the Big-Five) and transformational leadership. However, this correlation became non-significant in the presence of the other Big Five characteristics. Bennis (1989), London (2002), and Popper (2005), assert that the development of leaders is largely rooted in a capacity for self-insight. They claim that the leader's development and personal growth is attended by this quality, namely his or her recognition of his or her strengths and weaknesses. Such recognition is essential for the individual's awareness of himself or herself (his needs, his motives and abilities) and of the way in which he or she is perceived by others. For example, Cox and Cooper (1989) interviewed 45 CEOs and found that their common characteristic was high self awareness regarding of themselves and of their environment. Similar findings were presented by Bennis (1989). Accordingly, our **fourth research hypothesis** is that leaders are more open to experience (and learning) than non-leaders.

The general argument of this study, indicating the research hypotheses, is presented graphically in Figure 1.

FIGURE 1. DEVELOPMENTAL ASPECT DIFFERENTIATING LEADERS FROM NON-LEADERS



METHOD

The hypotheses were examined by means of a t-test for independent samples for each variable, and also by a chi-square test.

Participants

The research took place in the Israel Defense Forces (IDF), and the participants were 286 male soldiers toward the end of their basic training. They belonged to four companies: two from the armored corps (169 soldiers) and two from the infantry (117). We distributed questionnaires, and the response in the armored companies was 65% and in the infantry 55%. Between 10% and 20% of the soldiers in the various platoons were new immigrants who had language difficulties answering the questionnaires and were accordingly excluded from the sample. Other soldiers who did not participate were absent for technical reasons (on duty, sick leave, etc.), and it may be assumed that their exclusion was random.

Of the 286 soldiers, 50 were evaluated as leaders and 30 were evaluated as non-leaders (on the basis of the leadership evaluation questionnaire described below). The comparative analysis was conducted on these two groups

Research Instruments

The above-mentioned lack of systematic discussion and research on leaders' developmental psychological aspects is matched by the absence of research tools to measure these aspects. For the purpose of the present study we developed three questionnaires: one for evaluation of leadership, one for examining the development of leadership (LES), and one for examining openness to new experiences (OE). To develop and examine the research tools we conducted a pilot study among 195 soldiers from one armored company and one infantry company. The soldiers had served in the army approximately three months and were near the end of their basic training. The pilot study was conducted in three stages. In the first stage, we distributed to the soldiers a series of self report questionnaires. In the second stage, two weeks later, we returned to 28 of the soldiers (some 14% of the participants) for semi-structured in-depth interviews. In the third stage (six months later), we revisited the soldiers and again administered the questionnaires in order to test their stability. The semi-structured interview in the second stage of the pilot study included questions about four main subjects: their childhood and schooldays; leadership experiences, exposure to influential leadership figures, openness to experiences, and introspection and self learning in the context of leadership. We constructed three measures of development, which together represent the noted developmental aspects. Each measure was composed of the mean of the scores on the major questions that differentiated leaders from non-leaders.

Leadership evaluation questionnaire

To evaluate the soldier's leadership we used a sociometric anonymous questionnaire filled out by peers and commanders. It was composed by the research team and is partly similar to the various sociometric questionnaires used in the IDF. The questionnaire examines peers' and commanders' perception of the soldiers' leadership potential at a stage by which they have got to know each other very well. We emphasize that unlike many armies (such as the US army) in which the differentiation between officers and other ranks is determined "institutionally" (mostly through military academies), differentiation in the IDF occurs "naturally" – through a selection process out of the entire cohort. Starting on an equal footing, all Israeli conscripts undergo an ongoing selection process during their initial training period. This situation is a unique laboratory for examining leadership (e.g., Gal, 1986).

Every soldier in the platoon was evaluated on two questions: the extent of his influence in the platoon and the extent to which he could be a good commander, on a scale ranging from 1 (*very little*) to 5 (*very much*). The questionnaire yielded four scores: two continuous mean scores on the soldier's leadership based on peers' rating (influence in the platoon and suitability for command), and two parallel scores based on commanders' rating. The relationships between these continuous leadership variables proved significant and positive relations. A correlation of 0.79 ($p < .01$) was found between peers' and commanders' ranking on influence, and also between the two groups' rankings of "a good commander". Correlations between the two variables (influence and a good commander) within each group were also found to be strong: .87 ($p < .01$) for peers and .79 ($p < .01$) for commanders. These findings reinforce our understanding that leadership is a type of influence, and they also show that commanders and peers defined the soldiers' leadership similarly.

From the leadership evaluation questionnaire we formulated a distinction between two polar groups: leaders and non-leaders. This kind of examination is less common in leadership studies, which, as mentioned, generally focus solely on leaders or examine correlations between leadership variables and other independent variables (Bass, 1990). Since our study deals with the development of leadership and argues for differential development of leaders, we considered thought that comparison with a polar group of non-leaders could illustrate effectively the uniqueness of the group of leaders. The group of leaders comprised soldiers who received a mean score of 4 or above on at least one of the questions (degree of influence or suitability for command) from their peers and commanders alike. The group of non-leaders group was composed of soldiers who received a mean score of 2 or below from both peers and commanders on at least one of the questions. A distribution cutoff determined by the possible answers and not by the distribution of the answers in practice ensured a clear distinction between groups. Since this questionnaire served as the basis for an absolute, not relative, sociometric evaluation (each soldier received a leadership score regardless of the other soldiers in the platoon), this cutoff ensured that those classified in the group of leaders or in the non-leaders group were those who really got an absolute high or an absolute low score respectively, and not just a score relative to the other participants (this division is stricter than a distribution into quartiles, which we also examined).

Construction of the leadership development questionnaire (LSE)

To examine the development of leadership we constructed a questionnaire that examines leadership-shaping experiences (LSE) from childhood to conscription into the military. The questionnaire was composed on the basis of Avolio and Gibbons' (1988) measure and the semi-structured interviews conducted in the pilot study. We developed the semi-structured interview with the assistance of expert psychologist interviewers. The questions in the interview were divided into the following sections: the interviewee's childhood; his schooldays; leadership experiences and exposure to influential figures; and questions examining openness to experiences, introspection and self learning in the context of leadership. On the basis of the pilot study, which included 28 interviews, the research team formulated the final version of the semi-structured interview, and this final version served for the construction of the research questionnaire (LSE). As stated, this version was based on Avolio and Gibbons' model (1988) together with other issues that arose as central in the interviews. The research team members who had conducted interviews in the pilot study shared in developing the questionnaire. The logic behind the construction of this tool was the possibility of quantitative processing of issues that had hitherto been investigated by qualitative methods.

LSE questionnaire.

The questionnaire contained the four sections that appeared in the interview and was designed to measure quantitatively issues that had emerged as central. It comprised 44 closed questions, some of

them informative, for example, "What did your parents urge you to achieve?" For some of the informative questions the scale of replies was based on the variety of replies that we had obtained in the pilot interviews. In certain questions the respondent was asked to rank on a 5-point Likert scale such matters as: to the extent he was given responsibility at home,? or the extent he felt in his childhood that his parents encouraged him to exert influence.?

Ten questions in the LSE questionnaire examined issues connected with the respondent's level of openness, self awareness, and social awareness, and how he coped with failure. These issues had emerged as significant in the semi-structured interviews, -and did not receive a satisfactory answer in the existing questionnaire examining on openness to experience (described below). The respondent was asked to rank on a 5-point Likert scale the extent of his agreement with various statements, such as: I am critical of myself; I expend much thought on trying to learn from my failures; when my opinion differs from the majority I prefer not to express it.

Questionnaire for examination of openness to new experiences

To examine the degree of openness to experience, the research team developed a questionnaire based on the NEO PI-R Personality Inventory (Costa & McCrae, 1992a). The NEO PI-R examines five personality factors (the Big Five), one of which is openness to new experiences. In the Hebrew version of the questionnaire this factor is examined by 48 items (Montag & Levin, 1994). The respondent is asked to indicate the degree to which he or she agrees or disagrees with each statement on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The Cronbach's alpha reliability coefficient on the *openness to experience* factor in this Hebrew version is .65 (Montag & Levin, 1994). Our research team developed an abbreviated questionnaire, – Openness to Experiences (OE), comprising 24 items. The main reasons for constructing the new questionnaire were the need to shorten the questionnaires due to the limited time available for administering it in the army, and the need to adapt the language to make it more comprehensible to the participants. The general score on this measure can range from 24 to 120.

The OE questionnaire was validated against the Hebrew version of the original questionnaire (NEO PI-R) by administering both questionnaires to 113 respondents, men and women, most of them (65%) students at Haifa University and the others attending pre-university courses. Cronbach's alpha reliability coefficient of the new questionnaire is was .64, and a significant correlation ($r = .77, p < .01$) was found between the scores of the original and the new questionnaire. The latter was examined in the context of the pilot study, and its reliability level was found to be reasonable and to match the level reported in the literature (Montag & Levin, 1994).

RESULTS

The results presented are based on the division into the four major developmental factors in the model. The first three factors – family conditions in which the individual respondent grew up, his relations with his parents and their expectations of him; and leadership experiences and exposure to models of leadership – were measured by the LSE questionnaire, while the fourth factor, openness to experiences, was examined by analysis of both the LSE questionnaire and the OE questionnaire. Of the 286 soldiers participating in our study, a group of 50 soldiers who were perceived by their peers and commanders as leaders was compared with a group of 30 soldiers who were perceived as non-leaders.

Family conditions in which the individual grew up

We wished to evaluate the family relations in the home where the individual respondent grew up, and the extent to which his parents encouraged him to exert influence and pressed him for achievements. Our first research hypothesis was partially supported.

TABLE 1. FAMILY CONDITIONS IN WHICH THE LEADERS AND NON-LEADERS GREW UP – RELATIONS WITH THE PARENTS AND PARENTS' EXPECTATIONS OF THEM DURING CHILDHOOD, MEANS, STANDARD DEVIATION, T TEST VALUE, AND SIZE OF DIFFERENCE.

	Leaders M (SD)	Non- leaders M (SD)	T value	Size of difference Cohen's d
Relations in the family (1 = not good; 5 =very good)	4.66 (0.75)	4.35 (0.98)	1.56	.35
Parents encouraged them to use influence (1 = very little; 5 = very much)	3.98 (0.81)	3.50 (1.21)	1.79	.47
Parents encouraged them to achieve (1 = very little; 5 = very much)	4.45 (0.79)	3.93 (1.06)	2.43*	.57

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

Table 1 shows a small and not statistically significant difference in family relations as reported by leaders and non-leaders. Contrary to our first hypothesis, both groups reported fairly good relations in their immediate family. However, consistent with our hypothesis, there was a significant difference in the extent to which parents encouraged their children to use influence and to achieve. Leaders reported more than non-leaders that their parents had encouraged them to exert influence and achieve.

Leadership experiences and exposure to leadership figures

Table 2 reflects the leadership experience dimension -- the variety of leadership experiences in the framework of the school and the family -- among soldiers who were perceived as leaders and non-leaders. Table 3 shows the percentage in each group (leaders and non-leaders) of those who had experienced leadership and guidance roles in the school and in other frameworks (dichotomous response scale yes/no).

Consistent with our second research hypothesis, Tables 2 and 3 reveal significant differences in all of the questions examining leadership experiences. With the exception of taking responsibility at home (while not statistically significant, the differences between leaders and non-leaders found in this variable are in the direction of the hypothesis). A higher percentage of leaders had experienced leadership roles at school, and a higher percentage of them had attempted to change things in this framework. In addition, the leaders had been more popular than the non-leaders at high school. The questions on leadership experiences proved to have significant positive correlations. Of particular interest is the correlation found between assuming organizational roles and attempting to change things at school ($r = .65, p < .01$). Significant correlations were also found between the respondent's having assumed organizational roles and his social status at school ($r = .42, p < .01$), and between social status and the wish to change things at school ($r = .35, p < .01$). The score on the question about the respondent's cumulative leadership

experience was found to be relatively low, but in significant correlation with the other questions ($.20 < r < .30$, $p < .01$).

The results presented in Table 4 enable us to test our third research hypothesis. The percentage of respondents reporting exposure to leadership figures who served as role models matches our hypothesis. The table attests to a significant difference between leaders and non-leaders, with a very high percentage (80%) of the leaders reporting they had leadership figures who served them as role models. This table displays the dichotomous division into those who had such leadership figures and those who did not. This question enabled us to learn, among those who reported having leadership models, what was the nature of the original leadership figure in the questionnaire (family, educational, historical, military, or other). This distribution reveals that most of the participants, leaders and non-leaders (51.1% and 40.7% respectively), indicated a family member as a central figure, and all the other figures received significantly lower rates (below 10% each), although the leaders had slightly higher percentages in all the categories. This underlines the importance of family members as role models and it leads to the following question -of the nature of the relationship with significant figures in or outside the family.

TABLE 2. LEADERSHIP EXPERIENCE OF LEADERS AND NON-LEADERS, MEANS, STANDARD DEVIATIONS, AND T TEST VALUES

	Leaders M (SD)	Non- leaders M (SD)	T value	Size of difference Cohen's d
Social status in high school (1 = not popular; 5 = very popular)	4.20 (0.68)	3.80 (1.03)	2.02*	.47
Extent to which he enjoyed undertaking organizational roles in the school (1 = very little; 5 = very much)	3.43 (1.21)	2.15 (1.16)	4.42**	1.07
Extent to which he tried to change things in the school (1 = very little; 5 = very much)	3.51 (1.23)	2.81 (1.13)	2.42**	.59
Accumulated experience of guidance roles (1 = hardly any experience; 5 = a great deal of experience)	4.06 (0.83)	3.20 (1.40)	1.85	.77
Was given responsibility in the home (1 = very little; 5 = very much)	4.27 (1.07)	3.93 (1.27)	1.26	.30

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

Table 5 shows the nature of leaders' and non-leaders' relationships with significant figures who had served them as role models since childhood. The table reveals no statistically significant difference between leaders and non-leaders in the nature of the relationship with the mother and other figures in the close family. However, the two groups differ significantly in the relationship with the father and with figures outside the family. The leaders reported better relations with the father and with figures outside the family, such as teachers, youth leaders, and rabbis.

TABLE 3. PERCENTAGES OF LEADERS AND NON-LEADERS WHO HAD EXPERIENCED LEADERSHIP ROLES, CHI SQUARE TEST AND CRAMER'S V

	Leaders	Non-leaders	χ^2 (df = 1)	Strength of relationship Cramer's V
Roles involving responsibility in junior high and high school (1 = yes; 0 = no)	58%	28%	6.06*	.29*
Guidance roles in other social frameworks (1 = yes; 0 = no)	71%	33%	10.36**	.40**

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

TABLE 4. PERCENTAGES OF LEADERS AND NON-LEADERS WHO REPORTED THAT THEY WERE EXPOSED TO LEADERSHIP FIGURES WHO SERVED AS ROLE MODELS, CHI-SQUARE AND CRAMER'S V TESTS

Are there leadership figures whom you see as a source for imitation? (1 = yes, 0 –no)	Leaders	Non-leaders	χ^2 (df = 1)	Strength of relationship Cramer's V
	80%	51.9%	6.03*	.30*

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

TABLE 5. RELATIONSHIP WITH SIGNIFICANT FIGURES: DIFFERENCES BETWEEN LEADERS AND NON-LEADERS, MEANS, STANDARD DEVIATIONS, AND T TEST

Significant figures (1 = not good relations; 5 very good relations)	Leaders M)SD((SD)	Non-leaders M (SD)	T value	Size of difference Cohen's d
Father	4.66 (0.67)	3.96 (1.27)	3.06**	.72
Mother	4.65 (0.77)	4.35 (1.06)	1.41	.34
Close family (siblings, grandfather, grandmother)	4.72 (0.65)	4.50 (0.91)	1.08	.28
A figure outside the family	4.59 (0.56)	3.90 (1.07)	3.06**	.85

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

Openness to experiences

As described in the subsection on research instruments, the openness to leadership experiences dimension was examined by a combination of two measures. One measure consisted of ten questions from the LSE questionnaire which examined aspects concerning of the participant's level of openness, his self awareness and social awareness, and his manner of coping with failures. The reliability score obtained for this scale was sufficient ($\alpha = .71$). On the basis of the participants' reports, it was found that the leaders' score on this measure ($M = 3.83$; $SD = .39$) was higher than that of the non-leaders' ($M = 3.24$; $SD = .50$), and the difference was statistically significant ($t = 5.53$; $p < .01$, $d = 1.33$). In general, the leaders in our study were more critical of themselves, learned more from their failures, were less afraid of taking risks, and were less concerned about the possibility of having unusual opinions.

The second measure was calculated from the openness to experiences (OE) questionnaire and included matters such as openness to new experiences and accompanying characteristics – curiosity, imagination, originality, and intellectual interest. Based on the participants' reports, the leaders' score on this measure ($M = 3.70$; $SD = .39$) was higher than that of the non-leaders' ($M = 3.45$; $SD = .38$), and the difference was statistically significant ($t = 3.53$, $p < .01$, $d = .81$).

In the combined openness measure the leaders were significantly higher ($M = 3.76$; $SD = .29$) than the non-leaders ($M = 3.34$; $SD = .35$), statistical significance ($t = 5.23$; $p < .01$, $d = 1.29$). The reliability score obtained for this combined scale was sufficient ($\alpha = .75$). These results support our hypothesis, namely leaders are more open to experience than non-leaders.

SUMMARY OF ANALYSIS

The comparative analysis indicated that leaders and non-leaders had some distinctly different developmental characteristics. The leaders perceived themselves as individuals who grew up in homes where their parents had urged them to achieve more and encouraged them to exert influence; they had been exposed more to significant figures in their childhood, and their relations with the father and with figures outside the family were better than those of the non-leaders. They recalled themselves as experiencing more leadership roles in at high school, enjoyed higher social status at school, and tried more to change things in the school framework. Differences were also found in the level of openness. The leaders proved more open to new experiences, were less afraid of taking risks, were less concerned about the possibility of being unusual in their opinions, and learned more from their mistakes.

MULTIVARIATE ANALYSIS

In addition to the comparative analysis between leaders and non-leaders, a multivariate regression analysis (Ordinary Least Square- OLS) was conducted on all our research sample (286 soldiers) in order to predict leadership by the various developmental variables. This analysis enabled us to examine the relative influence of the groups of independent variables. The leadership score was calculated as a mean of the four continuous leadership evaluation scores (by peers and commanders in the platoon). The reliability score obtained for this scale was high ($\alpha = .93$).

The independent variables were computed as follows: (a) family conditions index - a mean score of the three relevant questions (specified in table 1) ($\alpha = .67$); (b) leadership experience index - a mean score of the seven relevant questions (standardized) (specified in tables 2 & 3) ($\alpha = .71$); (c) relations with

significant leader figures index - a mean score of the four relevant questions (specified in table 5) ($\alpha = .72$);, and (d) combined openness to experience index (specified above) ($\alpha = .75$).

The correlation matrix of all variables is presented in Table 6. All variables are seen to be positively and significantly correlated except for the correlation between the openness index and the relation with significant figure index.

TABLE 6. CORRELATIONS MATRIX BETWEEN THE DEVELOPMENTAL INDICES

Indices	1.	2.	3.	4.	5.
1. Family condition index	1	.36**	.54**	.19**	.19**
2. Leadership experiences index		1	.29**	.43**	.30**
3. Relations with leadership figures index			1	.13	.24**
4. Openness to experience index				1	.31**
5. Leadership (dep)					1

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

Table 7 presents the results of the regression analysis. It can be seen (when a continuous variable is used as a leadership criterion) that leadership experiences, relations with significant leadership figures, and openness to experiences were significantly related to leadership, while family conditions were not found significant. The fact that the family condition index was found not significant may result from the relatively low level of reliability. It could also be explained by a mediation effect from the leadership figure index, which is highly correlated with it ($r = .54^{**}$) (Baron & Kenny, 1986). Comparison of the Beta scores indicates that openness to experience has a more significant effect on leadership (Beta = .20) than leadership experience (Beta = .19) and relations with significant leadership figures (Beta = .17).

DISCUSSION

In an attempt to detect unique features in the developmental process of leaders, we compared a group of individuals who were perceived as leaders with another group distinctly perceived as non-leaders. Significant differences emerged between the leaders and non-leaders in the four components of the developmental model: (a) parents' expectations and relations with the parents, (b) leadership experiences, (c) exposure to leadership figures, and (d) openness to experiences. In most of the aspects that we examined within these four components, the leaders ranked higher than the non-leaders.

TABLE 7. REGRESSION ANALYSIS FOR PREDICTION OF LEADERSHIP.

Variables	Coefficients	SE	Beta
Family condition index	-.01	.09	-.01
Leadership experiences index	.23**	.09	.19
Relations with leadership figures index	.27*	.12	.17
Openness to experience index	.46**	.16	.20
Constant	.38	.76	
F value	10.16**		
R2 adjusted	.15		
No. of cases	216		

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

Parents' expectations: The leaders were more aware of their parents' high expectations of them for achievement and influence. Their self-reports indicate that they had internalized the expectations communicated to them during their socialization process. Many studies refer to a Pygmalion effect, whereby expectations absorbed from the environment, particularly from respected authority figures, become self-fulfilling prophecies, self-expectations that guide the individual's aspirations and behaviors (see review of studies in Eden, 1990).

Moreover, encouragement to acquire influence may be seen as an expectation for achievements, particularly in the Anglo-American culture, where leadership is perceived in terms of social prestige and as an expression of social success (Dorfman, 1996).

Relations with parents: The leaders were found to have closer relationships with the father. As the research sample was composed exclusively of men, we may suggest a psychoanalytic interpretation of the father's influence in the context of leadership. The psychoanalytic literature on leaders (e.g. Burns, 1978; Popper, 2000; Zaleznik, 1992) discusses this in terms of the Oedipal explanation (Freud, 1920). Burns (1978), for example, in analyzing several leaders, discerned a similar pattern in their development: - close and loving relations with the mother and admiration for the father.

Another possible explanation is related to Bandura's (1977a) social learning theory, according to which fathers may be perceived, especially by young sons, as manifestly more worthy of imitation than other people. The reported correlation attests to the quality of the emotional bonding with the father. It does not necessarily show the direction of this relationship, but as Bandura argues, it indicates the fulfillment of the emotional preconditions required for social learning (this psychological process will be elaborated upon later).

Leadership experiences: The leaders, according to their own reports, ranked distinctly higher than the non-leaders in the categories referring to actual experience of leadership roles (guiding and organizational

roles) as well as in their self-perception regarding their tendency to assume organizational roles at school and their perception of their social status there. On the methodological level, this finding provides further validation of our original classification into leaders and non-leaders. The leaders had experienced more leadership roles and remembered themselves as enjoying their use of influence and their high social status. The findings on concrete experiences of leadership, the high correlation of these experiences with the perception of the tendency to undertake leadership roles, and the fact that memories of this nature are common to the group of leaders as opposed to the very different memories shared by the other group – all these seem largely to negate the possibility that the differences are simply random recollections.

Exposure to and influence of leadership figures: The results indicate that leaders attach greater importance than do non-leaders to the father and other authority figures outside the family (youth leaders, teachers, etc.). A possible explanation for this may be based on Bandura's (1977a, 1977b) social learning theory, according to which individuals tend to adopt and imitate social behaviors that they perceive as rewarding: people who are perceived as successful become models for imitation. This mechanism of learning through observation and imitation has indeed been found in the self-reports of many leaders in reference to a father whom they perceived as important and successful (see , for example, Burns, 1978; Chadha, 1997; Sampson, 1999). Burns (1978) and Bennis and Nanus (1985), in analyzing a large group of outstanding leaders, pointed out that all of them had *mentors* who strongly influenced various aspects of their leadership. This group of mentors included a broad range of authority figures whom the leaders had encountered in the course of their early lives, from sports instructors through school principals, teachers, newspaper editors, to politicians.

Openness to experiences: The major characteristics of openness to experience, as examined by the LSE and the OE questionnaires, concerned the respondents' level of openness, self-awareness and social awareness, manner of coping with failure, curiosity, originality, and intellectual interest. In all these aspects, which were examined both separately and by the combined LSE and OE index, the leaders scored higher than the non-leaders.

While family conditions and leadership experiences are *contextual variables*, openness to experience is a personality variable that might have a different theoretical stand grounding. Indeed, openness as measured by the NEO Inventory was found to be in high correlation with variables that are clearly of central importance in development processes, such as experience seeking $r = .43$ (Zuckerman, Kuhlman, Joireman, Teta, & Kraft, 1993), and flexibility $r = .42$ (McCrae, Costa, & Piedmont, 1993), and in negative correlation ($-.56$) with tough-mindedness (Conn & Rieke, 1994). Openness to experiences can also contribute to the understanding of the social dimension of leaders described as socialized leaders (Popper, 2000, 2002). Guttman (1995) found that problems in human relations were more prevalent among individuals who were classified as low in openness. Similar findings were presented by Kirton (1976) and Gilbert (1991). Some researchers have shown that openness appears in early childhood and remains stable over the years. Costa and McCrae (1992b) reported a correlation of .66 between two indices of openness over an interval of 24 years. Finn (1986) reported a correlation of .62 with intellectual interest over a gap of 30 years. McCrae and Costa (1990) reported that analysis of the means on openness indicates a slight and insignificant decrease with advancing age, despite the stereotype that sees older people as more conservative and rigid. In other words, openness to experiences is possibly a basic personality feature that makes a future impact both on the people's actual willingness to experience leadership roles and on the scope, intensity, and ability to learn retrospectively from leadership experiences and from encounters with figures who have exert a possible influence on them in terms of vicarious learning (Bandura, 1997). That is to say, the basic ability to learning and development, whose seeds are sown in early childhood, meets the opportunity – the relevant social context for manifestation of

leadership, prevalent context during the school years. Later successful experiences of leadership reinforce the individual's self-efficacy (Bandura, 1977b, 1997). This process is advanced by the bestowal of social status on the leader's position (Dorfman, 1996). Initial indications of this research direction were recently presented by several researchers, who argued that *internal representations* formed in early childhood create a differential potential for development as leaders. For example, Mikulincer and Florian (1995) found that soldiers who were rated as leaders in sociometric evaluations were characterized by a secure attachment style. Attachment style is formed in early childhood (Bowlby, 1969). Similar results were presented by Popper, Maysseless, and Castelnovo (2000), and by Popper et al., Amit, Gal, Sinai, & Lisak (2004).

This argumentation is in line with the foremost psychological theories in developmental psychology, namely, that early childhood is a formative period (e.g., Bowlby, 1969; Freud, 1920; Kohut, 1971). This subject merits comprehensive research in itself. The broader argument is that in the developmental process there is a distinction between basic elements, such as openness, which are formed in early childhood or might even be genetic (Arvey, Rotundo, Johnson, and McGue, in press), and "pure" acquired variables, such as self-efficacy.

In sum, the findings of this study present important differences between leaders and non-leaders, and this opens a new direction in research on leaders' development – a direction that is clearly missing from empirical psychological research on leadership. Future studies should also involve a broader range of participants in order to ensure better representation of the general population (in terms of age, gender, etc.). Although the multivariate findings point to the importance of openness to experiences, leadership experiences, and relations with leadership figures in predicting leadership, there may be other variables that are relevant for investigating the differences between leaders and non-leaders. Future studies should address this expansion of the variables. Moreover, as mentioned, leadership experiences, exposure to leadership role models, and openness do not share the same theoretical status. Future studies should treat questions such as the origins of these predispositions as well as their impact on leadership development.. Such efforts could add more psychological knowledge regarding the developmental processes distinctively related to leaders' development.

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