How Cognitive Complexity and Need for Closure Determines Individual Differences in Implicit Leadership Theories

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ABSTRACT

According to Implicit Leadership Theories (ILTs), the stimulus term "leader" is used as a superordinate cognitive category to classify others as leaders or non-leaders (Lord, Foti, & DeVader, 1984). At the basic level, perceivers classify others more specifically depending on the social setting in which leaders operate as organizational leaders, military leaders, political leaders, etc. At the basic level cognitive attributions of leaders' traits and behaviours are made by comparing specific stimulus e.g. sports leader with an ideal example (prototype) of that category. At the lowest level leaders' categorizations are made by recalling into memory the actual individuals, which perceiver regards as the representative of the category. The described research on Offermann, Kennedy and Wirtz' ILTs structure was based Results of our research demonstrated that people describe political and organizational leaders differently. Additionally, men have different ILTs than women. The individual differences in implicit leadership theories is a function of cognitive processes of the perceivers. Empirical results showed, the categorization of political and organizational leaders are determined by other pattern of perceivers' cognitive characteristics as cognitive simplicity vs complexity, need for closure and Kirton cognitive style. Analyses of multiple relationships were conducted by employing multivariate procedures of structural equation modelling.

Keywords: Implicit Leadership Theories, Political Leader, Organizational Leader, Cognitive Complexity, Need For Closure, Kirton Adaption-Innovation Style

INTRODUCTION

In the context of the contemporary theories of leadership stemming out of the social cognition mainstream (Fiske & Taylor 1991; 2008), what is accented is a regulatory importance of two cognitive mechanisms used to describe and explain the behavior of leaders and leadership, remaining in close mutual interaction (Cronshaw & Lord, 1987). The first one includes *leadership categorization processes* (Lord & Maher, 1991), using the mechanisms of conceptual categorization of leadership according to the concept of natural structures and prototypes based on semantic networks among different dimensions and aspects of leadership, and a leader-subordinate relationship in an organization (Lord, Foti, & De Vader, 1984; Lord, Foti, & Phillips, 1982). *Implicit leadership theories* (ILTs), based on an implicit knowledge regulative role, are the latter type of cognitive mechanisms, integral with leadership categorization processes (Schondrick & Lord, 2010). These theories are more focused on the knowledge spontaneously and automatically acquired in the course of socialization, established in memory as cognitive models

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of various types (such as plans, scripts, procedures, intuitive or conceptual categories) concerning the characteristics and competencies of a typical leader (or leader types). By integrating both theoretical approaches, ILTs constitute a hierarchically organized system of schemas and cognitive categories (Rosch, 1978; Lord, et al., 1984). A prototype as an abstract representation of the most representative features of category members (Rosch, 1978) is the main concept describing the ILTs. In this approach, when people describe a leader, they refer to primary prototypes of the category, that is the most typical and representative instances of the category of objects or people (Rosch, 1978; Cantor & Mischel, 1979). Thus, ILTs consist of a set of prototypical attributes/characteristics of a leader and leadership which a person uses in the perception and evaluation of a stimulus person by comparing them to a leader category, and then to an ideal leader (Phillips & Lord, 1981; Kenney, et al., 1994). Referring to the concept of cognitive categorization (Rosch, 1978), there are three levels in the ILTs structure. On the superordinate level, people categorize others as leaders and non-leaders. On the basic level, observers attribute leadership qualities depending on a social context (for example, an organizational leader, a military leader, a political leader, a religious leader, etc.), by comparing a specific stimulus with a prototype in this category. On the subordinate level, a categorization of leaders is performed by recalling a memory of specific individuals who are treated as representatives of given category (Lord, et al., 1984). When referring to general cognitive theories, please note that these schemes and concepts do not constitute a homogeneous category, but they are diverse, dynamic and context-determined (Abelson & Schank, 1977; Schondrick & Lord, 2010). Therefore, it can be assumed that ILTs are of dual nature. On the one hand they include declarative (or very close to declarative) knowledge in the form of concepts, categories, plans, and scripts; on the other, they include procedural knowledge, which is the basis of intuitive processing occurring in the processes of perception, evaluation, and interpreting of leadership behaviors as well as leaders-subordinates relationships (Lord, et al., 1984). That is why ILTs are a form of a perceptual filter through which people recognize and evaluate a real leader (Cronshaw & Lord, 1987), while expressing a tendency to simplify and categorize elements of an organizational environment (Bryman, 2001).

Paying attention to the role of ILTs in a functional description of leadership is nothing new, not only in the mainstream of the social cognitive theory (Fiske & Taylor, 1991; 2008), but also in a more general reference to the personal knowledge theory (Polanyi, 1958). Polanyi presented a thorough analysis of the importance of intuitive processing and its functional relationship with declarative knowledge. In the context of the personal knowledge theory, it can be stated that processes of complex social assessment are always based on the interaction of declarative knowledge and procedural knowledge (represented by implicit processing). Many researchers also indicate that ILTs are a special case of implicit processes, such as the implicit personality theories (Eden & Leviatan, 1975; Rush, Thomas, & Lord, 1977; Konrad & Kranjcec, 1997). The implicit personality theory is in fact a collection of spontaneous and subjective characteristics and expectations which are used to assess and categorize people in terms of abilities, attitudes, interests, and physical and mental features (Rosenberg & Jones, 1972; Schneider, 1973). To sum up the above mentioned discussion from the *recognition-based approach* perspective (Schondrick & Lord, 2010), one can draw a conclusion that in a functional description of leadership, an interaction of conscious conceptual categorization processes with intuitive processing (occurring implicitly) should be taken into account. Both processes are integral and create a coherent mechanism explaining the formation and functioning of ILTs, linking the conscious assessment mechanisms with unconscious and automated ones (Evans, 2008).

Many researchers tried to determine the contents of ILTs. One of the earliest developed structuralizations of ILTs is a four-dimensional ILTs structure: Work facilitation, interaction facilitation, support and goal emphasis (Taylor & Bowers, 1970; Eden & Leviatan, 1975), or the characteristics of a leader in three dimensions: dominance vs. submission, friendly vs. unfriendly, controlled vs. emotionally expressed (Taylor & Bowers, 1970; Eden & Leviatan, 1975). The most frequently quoted and best empirically documented factor structure was discovered by Offerman, Kennedy, and Wirtz (1994), covering eight major characteristics associated with the term “leader”: sensitivity, dedication, tyranny, charisma, attractiveness, masculinity, intelligence and strength. In replications of the Offermann et al’ ILTs structuralization Ling, Chia, and Fang (2000) discovered four ILTs factors: personal morality, goal effectiveness, interpersonal competency, and versatility. The ILT structuralization as suggested by Offermann et al. is a little different and covers six factors: sensitivity, intelligence dedication, dynamism, tyranny, and masculinity (Epitropaki & Martin, 2005). A more synthetic ILT structure includes the following three constructs: friendliness, competency, and team orientation (Berber & Rofcanin, 2012). The most extensive ILTs include up to ten dimensions describing the leader: intelligent, cooperative, enthusiastic, decisive, sincere, goal-oriented, persuasive, wise, dedicated, and motivated (Engle & Lord, 1997), or 21 prototypical leadership characteristics, as used as part of the GLOBE project (House, Javidan, Hanges, & Dorfman, 2002). Many of the ILT structuralizations are the result of different measurement methodologies used or cultural differences. A few study results show the differences in ILTs for different leader types, by the comparisons of ILTs at the superordinate level or between ILT

levels (superordinate and basic levels) (Lord et al., 1984). In search of a specificity of implicit leadership theories on the basic level, for different types of leaders we have attempted to determine whether there are any differences in the ILT structure and content for an organizational and a political leader. The relevance of this search justifies the assumption of the cognitive categorization theory (Rosch, 1978), which suggests that ILTs (on the primary basic level) differ from ILTs on the superordinate level (Foti, Fraser & Lord, 1982). Additionally, the studies show that differences in leadership prototypes — organizational and political, sporting, or religious — depend on the field of leadership (Brown et al., 2004; Lord et al., 2001; Lord et al., 1984). This is also supported by many studies in which implicit organizational leadership theories are considered in terms of the efficiency of a leader and an organization (Foti, et al., 1981; Pierro, Cicero, Bonaiuto, van Knippenberg & Kruglansky, 2005; van Knippenberg & Hogg, 2003).

However, we believe that searching for new theoretical frameworks for ILTs with purely cognitive motives should not be detached from the individual differences represented by cognitive styles, since both processes of conceptual categorization and intuitive processing are not homogeneous. For a long time, it has been known that cognitive styles significantly alter the conceptual thinking, as well as determine differences in cognitive preferences (Nosal, 1990; 2009; Kozhevnikov, 2007). In recent studies, relatively little attention has been paid to the role of cognitive determinants in explaining ILTs. Based on the regulatory importance of individual differences in cognitive styles (Kozhevnikov, 2007; Nosal, 1990; Witkin, Moore, Goodenough, & Cox, 1977), we set forward the question asking which of them performs important regulatory functions. It is worth to attempt an empirical verification of their impact on the pattern components of ILTs. Thus, the main objective of our study was to discover what the relationship is between the preferred styles of conceptual categorization and cognitive styles and the main components of ILTs. We were particularly interested in relationships between the structure of ILTs and cognitive styles, expressing the preference for complexity and completeness vs. simplicity and incompleteness of information processing. At the same time, we assumed that leadership prototypes included in the structure of ILTs will be determined by various cognitive characteristics and cognitive processes in information processing. It seems highly probable that, in line with the principle of cognitive economy, people aim to simplify the processes of perception and categorization of leaders with an increase in cognitive preferences for quick, superficial, and prototypical processing (Lord, Foti, & de Vader, 1984; Nye & Forsyth, 2010). Therefore, the predicted model of ILT determinants included three variables: 1) cognitive simplicity vs. complexity (CC), 2) the need for (cognitive) closure (NFC), and 3) an Adaptiopn vs. Innovation style (KAI style). All of these variables can be treated as indicators of a cognitive styles.

The cognitive complexity (CC) derives from the concept of the *personal construct theory* (Kelly, 1955) and is defined most commonly as the level of differentiation of an individual's construct system and the level of integration and interconnection of these constructs in the processes of perceiving and understanding the world (Bieri, 1955; Crockett, 1977; Fransella & Bannister, 1977). The cognitive complexity is represented by the relative number of cognitive elements one can take into account in making judgments. By using a greater number of elements, people with high cognitive complexity can recognize more differences in the environment, see others in ambivalent terms and assimilate contradictory information more easily. People with low cognitive complexity categorize reality in black-and-white terms and use some rigid rules for information integration (Bieri, 1961 Bieri, Atkins, Briar, Leaman, Miller, & Tripodi, 1966). The existing research indicates that cognitive complexity (in different measures) results in a higher level of dimension differentiation and independence in social categorization in an organizational setting (Hill, 1969; Larson & Rowland, 1974). In addition, high cognitive complexity is associated with Fiedler's people-oriented leadership style (Mitchell, 1970), while the task-oriented leadership style occurs in less complex people, although other studies have shown no such relationship (Larson & Rowland, 1974). Many researchers suggest that a higher level of differentiation in ILTs reflects a higher level of cognitive structures complexity (Foti, et al., 1981; Lord, et al., 1984; Hastor, Schneider, & Polefka, 1970; Wegner, 1977), although the studies conducted by Weiss and Adler (1981) do not confirm that. Also in the case of the relationship between cognitive complexity and political views (Van Hiel & Mervielde, 2003), empirical evidence is inconclusive. Extreme political views are encouraged by low cognitive complexity (Tetlock, 1983), but it turns out that they can also be explained by high cognitive complexity (Sidanius, 1984). Such contradictory results most likely stem from differences in the measurement of cognitive complexity (Van Hiel & Mervielde, 2003; Weiss & Adler, 1981; Larson & Rowland, 1971) and stimulate further research seeking regulatory consequences of cognitive complexity.

Another cognitive characteristic of processing can be a need for cognitive closure (NCF), which manifests itself in the pursuit/inclination to simplify the structure of a task or information (Webster & Kruglansky, 1994), and reveals

as openness — cognitive closeness. NFC affects the formation and use of abstract mental representations in the social world on the basis of schemas, prototypes, and stereotypes. Persons with a high need for closure are closed-minded in all social situations, they prefer order and predictability, and feel discomfort when facing ambiguities. A high level of need for cognitive closure encourages a superficial analysis of incoming information and pursuit of simplified information, as provided by prototypes, stereotypes, and implicit knowledge. The resulting picture is often simplified and difficult to change, but it gives an individual a sense of predictability and a world order. A low level of the need for cognitive closure is associated with a higher tolerance for experiencing uncertainty. It is more conducive to careful and thorough analysis of the situation and fosters openness to new information (Webster & Kruglansky, 1994). The need for cognitive closure as a cognitive construct two independent cognitive motives (Neuberg, Judice & West, 1997) and explains directly and indirectly an information processing extention (Webster, Richter, & Kruglansky, 1996), the formation mechanisms of conservative, authoritarian and nationalistic political views (Chirumbolo, Areni, & Sensales, 2004; Golec De Zavala, Cislak, & Wesolowska, 2010; Kossowska &Van Hiel, 2003), an increase in judgment stereotypicality, cognitive biases, and cognitive stiffness symptoms in social information processing (a review in: Kruglanski, Dechesne, Orehek, & Pierro, 2009). In our view, the need for cognitive closure understood in this way can influence the development and use of implicit leadership theories in the perception and categorization of organizational and political leaders.

In addition, our ILT determinant model includes the Kirton Adaption – Innovation Style (KAI) (Kirton, 1976), which reveals the preferences of the two problem solving styles and is defined as a cognitive style type (Wittich & Antonakis, 2011). The KAI styles express individual differences in the adaptive vs. innovative style dimension. The adaptive style means a tendency to be methodical, compliant, disciplined, conforming, sensitive to people, risk averse, and dogmatic (high self-doubters). The innovative style means that an individual is inclined to be impractical, unconventional in their thinking, nonconforming, irreverent toward consensus, insensitive to people, risk seeking, abrasive, and flexible (Kirton, 2003). Assuming that the adaptive vs. innovative styles show the differences in regulatory functions of cognitive processes, we have put forward the hypothesis that KAI styles directly affect or mediate between the complexity vs. simplicity of categorization and information processing (CC, NCF) and the main components of the ILTs. Moreover, we assumed that the differences in ILTs of political and organizational leaders depended on the degree of cognitive complexity, need for cognitive closure and adaption – innovation cognitive style. Individuals with high cognitive complexity scores, low need for closure in cognition and with innovative style develop a certain distance in their minds which determines more differentiated categorization of the stimuli of an “organizational leader” and a “political leader”. More simply, closed and adaptative individuals describe political and organizational leaders less differently.

METHODS

Participants

The sample included 715 respondents who participated in this study (392 women and 323 men, M_{age} = 22.6, SD = 2.83). These were students of law, management, medicine, and computer science.

Three self-assessment instruments measuring implicit leadership theories, cognitive styles, cognitive complexity, and need for closure were completed simultaneously by each respondent. In summary, the ILTs Scale was completed by 715 individuals, 569 participants filled out the questionnaires for ILTs and cognitive styles, 392 completed the measure for need for closure, and 304 participants filled out the cognitive complexity inventory. Therefore, the analysis in which we identified leadership theories was performed on the total sample of 715 managers (organizational leaders’ ILTs n = 383 and political leaders’ ILTs n = 332); the analysis of relationships between ILTs and cognitive styles was performed among the total of 569 respondents; the analysis concerning cognitive complexity was carried out on a sample of 332 persons; and need for closure in relation to ILTs encompassed 383 participants.

Measures

Four instruments were used for exploring the relationship between ILTs and cognitive characteristics and processes. The variable measurement was performed in two sessions. In the first session, cognitive complexity and need for

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closure were measured. In the second session (after two weeks), the participants assessed their own cognitive styles, and ILTs of organizational (group 1) or political (group 2) leaders.

Implicit Leadership Theories. Implicit Leadership Theories were measured by the 41-item ILTs Scale (Offermann, et al., 1994). Participants were asked for a description of a prototypical leader by rating the 41 traits on a 9-point scale (1 — *not characteristic at all*; 9 — *extremely characteristic*). The Offermann et al.'s (1994) scale contains eight dimensions of ILTs: sensitivity (e.g., compassionate, sensitive); dedication (4 items, e.g., dedicated, motivated); tyranny (10 items, e.g., dominant, selfish, manipulative); charisma (5 items, e.g., charismatic, dynamic); attractiveness (4 items, e.g., well-dressed, classy); masculinity (2 items: male, masculine); intelligence (6 items, e.g., intelligent, clever); and strength (2 items: strong, bold). Similarly in previous studies (Offermann et al., 1994; Epitropaki & Martin, 2004; 2005), all subscales had good internal consistency, Cronbach alphas ranged from .71 to .90, except for masculinity, which had a reliability of .65.

Cognitive complexity. Cognitive complexity was measured by the Construct Repertory Test (Rep Test), developed by Bieri (1966). Cognitive complexity is defined as an individual's ability to perceive and differentiate environmental elements in a multidimensional manner (Bieri, 1955; Bieri et al., 1966; Kelly, 1955; Labouvie-Vief & Diehl, 2000; Vannoy, 1965). Those with high cognitive complexity are able to perceive and distinguish more social elements and are tended to percept others in ambivalent terms, as well as to assimilate contradictory pieces of information. Individuals with low complexity perceive their environment in black-and-white categories and distinguish fewer social elements. Respondents were required to identify ten persons who played ten predefined roles in their lives (as yourself, a person you dislike, your mother, a person you would like to help, your father, a friend of the same sex, a friend of the opposite sex, the person with whom you feel the most uncomfortable, a person in a position of authority, a person who is difficult to understand). In the next step, participants rated each of the individuals on the 10-adjective dimensions (e.g. *outgoing — shy*, *ill humored — cheerful*), using a 6-point Likert-type scale. Cognitive complexity is determined by a comparison of ratings between the constructs in a given role type. The total score of cognitive complexity was calculated by summing all ratings in all dimensions and ranged from 40 to 450. High score indicates high cognitive complexity as high differentiation among constructs available to describe others (i.e. low identical ratings) (Bieri et al., 1966).

Cognitive styles. Cognitive styles were measured with The Kirton Adaption-Innovation Inventory (KAI, Kirton, 1976; 1994). The KAI Inventory comprises 32 items in three subscales: efficiency, role/group conformity, and originality. Respondents scored on a 5-point Likert scale ranging from 1 (*very hard*) to 5 (*very easy*). The KAI measures an individual's preferred cognitive style of problem solving, which allows to locate each individual on a bipolar dimension from adaptive behavior to innovative behavior. High adaptors prefer order and precision and work with high accuracy and efficiency. They prefer to act on the basis of well established patterns of rules and procedures. In contrast, high innovators prefer much less structure at work and more often change the existing rules and ways of performance . They tend to enter more radical and novel problem solutions (Kirton, 1976; 1994). The internal reliability of KAI styles dimension ranged from .69 to .85.

Need for cognitive closure. The *need for cognitive closure* was measured with the Polish short version of the 15-item *Need for Closure Scale* (Kossowska, Hanusz & Trejtowicz, 2012). Participants responded using a scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The need for cognitive closure is defined by two different factorial facets: 1) the need for simple structure (NFSS), including four subscales: preference for order, preference for predictability, discomfort with ambiguity, and closed-mindedness — expressing the need to create and maintain simple structures, and 2) decisiveness as the preference for quick decisive answers. The need for simple structure (NFSS) was calculated by taking the sum of the four relevant facet scores (preference for order, preference for predictability, discomfort for ambiguity, and closed-mindedness), while the decisiveness score was calculated from the decisiveness subscale items. The first factor, NFSS, is related to freezing processes, and the second factor, decisiveness, is related to seizing processes (Roets, Van Hiel & Cornelis, 2006: Kruglansky & Webster, 1996). A high total score of NFSS subscales indicates high levels of the need for cognitive closure. Cronbach's alphas for the need for cognitive closure subscales and for the total score were from .70 to .87.

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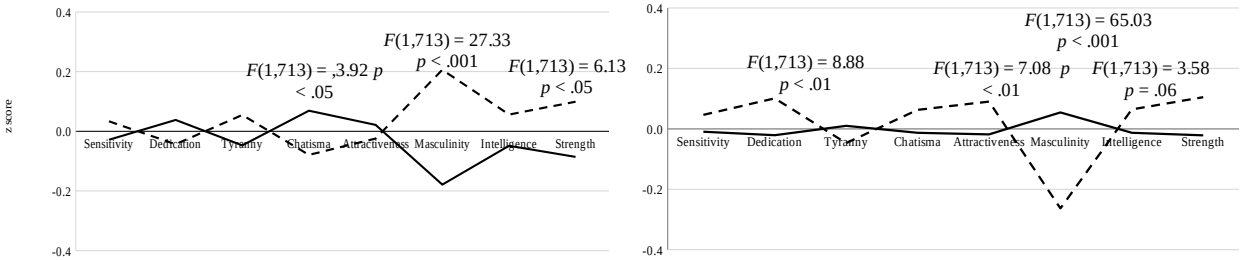
RESULTS

Implicit Leadership Theory of Organizational and Political Leaders

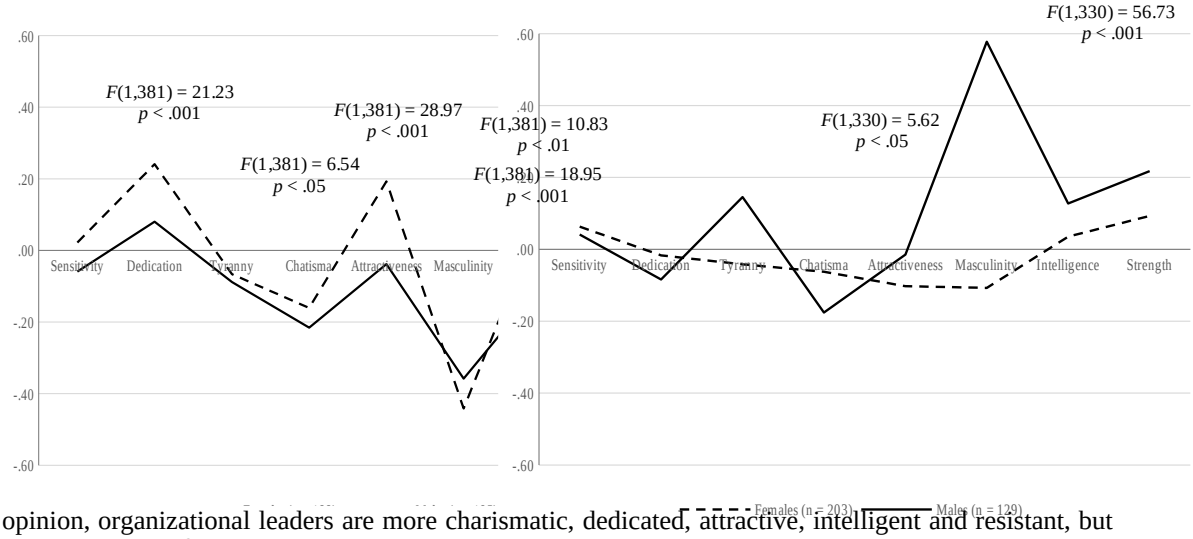
The following analysis is focused on identifying dominating ILTs in the perception of organizational and political leaders. In the first step, we tested the measurement model to verify the Offermann et al.'s structure of implicit leadership theories (Kline, 2011). In the CFA 8-factorial model of ILTs was confirmed (χ^2/df = 4.30, p < .001; *RMSEA* = .05, p (RMSEA ≤ 0.05) = .72; *GFI* = .98; AGFI = .93; CFI = .93)[1]. Next, second-order factorial analysis was carried out. Similarly, as in many studies (Epitropaki & Martin, 2004; Lord, et al., 1984; Cronshaw & Lord, 1987), two factors were extracted. Factor 1, labelled *leadership prototype*, comprised of the six scales: dedication, charisma, sensitivity, strength, intelligence, attractiveness, and explained 46% of variance. The second factor, *leadership antiprototype*, was marked by tyranny and masculinity scales, and explained 20% of total variance. All loading scores ranged from .33 to .89. To examine the second-order factorial structure of ILTs of organizational and political leaders the multiple-group analysis of CFA model was made. In the results of model comparison no differences in fit parameters were found ($\Delta\chi^2$ = 1.19, p > .05). It means that the ILTs structure is homogenous and universal in general terms of leadership perception.

In search of the differences in ILTs patterns of organizational and political leaders, a MANOVA analysis was conducted. To model the eight ILT scales (as dependent variables) and the two types of leadership (organizational vs. political) as independent variables, were entered. Results analysis revealed a significant main effects of the leader type, sex and leader type x sex interaction on the ILTs (Wilks'λ= .91; F(8, 706) = 9.09, p < .001, η^2 = .09; Wilks'λ= .79, F(8, 706) = 15.89, p < .001, η^2 = .21; Wilks'λ= .96, F(8, 706) = 3.64, p < .001, η^2 = .04, respectively).



As shown in Figure 1, compared with ILTs of political leaders, higher Charisma, F(1, 713) = 4.24, p < .05, η^2 = .006, lower Masculinity, F(1, 713) = 39.34, p < .001, η^2 = .06, and lower Strength, F(1, 713) = 6.15, p < .01, η^2 = .01 scores were revealed for the ILTs of organizational leaders. Other dimensions for the ILTs of organizational and political leaders did not differ significantly. Additionally, women assessed prototypical leader as more dedicated, charismatic, resistant, masculine and attractive than men (see Figure 2). The results of simple slopes analyses probing the interaction showed that men as well as women perceived the political and organizational leaders differently

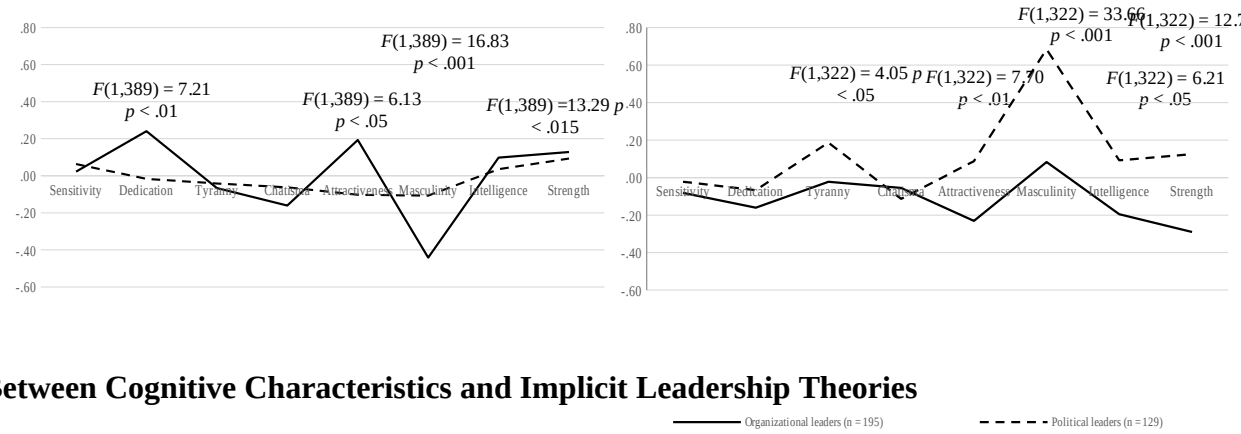
[1] The following parameters were used to assess the quality of the model: χ^2/df (the quotient of the χ^2 statistics estimate and the number of the degrees of freedom), RMSEA (root mean square error of approximation), GFI (goodness of fit index), AGFI (adjusted goodness of fit index), and CFI (comparative of fit index). According to the assumed criteria of Vandenberg and Lance (2000), a model is perfectly matched to the data if RMSEA is less than 0.06, and is well matched if RMSEA is less than 0.08. Moreover, values of GFI, AGFI, and CFI greater than 0.9 also indicate good matching.



In women's opinion, organizational leaders are more charismatic, dedicated, attractive, intelligent and resistant, but less masculine than in men's[2] opinion (see Figure 3). No differences were observed in tyranny and sensitivity of organizational implicit leadership theories between men and women. In political implicit leadership theories, a few differences in ILT dimensions between men and women categorization styles were detected. As Figure 4 shows, male implicit political leadership theories expressed higher level of masculinity and tyranny (representing the antiprototypical attributes of leadership) than female ILTs. Others dimensions of the ILTs of political leaders did not differ between men and women. When comparing the ILTs of organizational and political leaders in the female group, significant differences were revealed.

As shown in Figure 5, women attributed higher level of dedication, charisma, attractiveness, and masculinity in the organizational than political leadership prototype. Leader type did not differ women ratings in ILT dimensions: sensitivity, tyranny, intelligence, and strength. In the male group, the ILTs of organizational and political leaders were significantly different. Men evaluated political leaders as more tyrannical, masculine, attractive, intelligent, and resistant than organizational leaders. In their leadership categorization, there were no differences in sensitivity, dedication, and charisma scores between organizational and political leaders (see Figure 6). Thus, men are more rigorous and stringent in the organizational than in the political leadership prototype.

[2] All mean differences are statistically significant.



Relationship Between Cognitive Characteristics and Implicit Leadership Theories

Means, standard deviations, reliabilities, and intercorrelations among the subscales of the 41-item ILT scale are presented in Table 1. From correlation matrix results, that relationship between ILTs dimensions and cognitive characteristics are different in the perception of political and organizational leaders.

Table 1. Descriptive statistics, correlation matrix and reliability coefficients of measured variables.

		1	2	3	4	5	6	7	8	9	10	11	12
1.	Sensitivity[a]	**.83**	.43**	-.50**	.50**	.38**	-.05	.58*	..36**	18*	.05	.03	-.06
2.	Dedication[a]	.37**	**.88**	-.37**	.60**	.40**	-.04	.78**	.65**	.03	.04	.02	-.01
3.	Tyranny[a]	-.34**	-.17**	**.84**	-.29**	-.20**	.35**	-.47**	-.17**	-.13	-.03	-.03	.04
4.	Charisma[a]	.39**	.59**	-.18**	**.73**	.44*	.02	.61**	.57**	.10	.09	-.04	-.04
5.	Attractiveness[a]	.14**	.37**	-14**	.30**	**.71**	.24**	.45**	.40**	.09	.06	.12	.13
6.	Masculinity[a]	-.05	-.08	.36**	-.11*	.18**	**.69**	-.04	.16**	-.04	.06	.01	.11
7.	Intelligence[a]	.41**	.66**	-.16**	.52**	.46**	.03	**.87**	..69**	.15	.09	-.03	.01
8.	Strength[a]	.33**	.58**	.02*	.51**	.39**	.14**	.65**	**.75**	.14	.08	.01	.05
9.	Cognitive complexity[b]	.15	.12	-.15*	.14	.11	-.07	.15	.12*	**.77**	-.04	.03	.12
10.	Innovation–Adaption style[b]	-.02	.12	.07	.13*	.13*	.04	.11	.16*	.24**	**.78**	-.31**	.33**
11.	Need for simply structure[d]	.05	.04	-.04	-.08	.16*	-.01	.08	.06	-.20*	-.27**	**.82**	-.26**
12.	Decisiveness[d]	.06	.09	-.03	.10	.01	-.08	.16*	.01	.39**	.35**	-.26**	**.80**
	Mean	43.29	34.01	47.92	38.24	28.65	10.60	47.47	15.58	323.34	103.91	41.81	11.09
	SD	13.01	5.72	15.70	7.08	6.59	5.12	9.65	3.76	35.99	8.99	7.29	3.13

Note: [a] n = 715, [b] n = 304, [c] n = 569, [d] n = 383. Correlation for organizational ILTs are below the diagonal and for political ILTs are above the diagonal. Scale reliabilities are reported on the diagonal.

In search of determination sources of managing patterns manifested by managers, an estimation of path dependence model between cognitive characteristics and ILTs by using structural equation modeling with maximum likelihood estimation was carried out (Kline, 2011). The theoretical rationale concerning the categorizations of cognitive processes (Lord, et al., 1984), attribution theory (Cronshaw & Lord, 1987), cognitive and personality correlates of ILTs (Keller, 2000; Lord, et al., 1984), and the results of the multivariate analyses (EFA, CFA, MLR, SEM), both within the sets of variables and between these sets of variables, constituted a starting point to developing the model.

To measurement model the eight factors of ILTs, reduced to two second-order factors (as latent variables) we entered: 1) *the leadership prototype*, represented by six observed variables: dedication, charisma, sensitivity, strength, intelligence, attractiveness; and 2) *the leadership antiprototype*, which reflected tyranny and masculinity (see *Implicit Leadership Theory of organizational and political leaders* section). The following cognitive characteristics and processes were explaining variables: 1) cognitive complexity, 2) need for cognitive closure, and 3) Adaption - Innovation style.

Two structural models were tested. In the first model, regression paths were assumed between all the explained and explaining variables, and all covariances between the explaining variables. The parameters of this model did not produce a good fit to the empirical data. In the second model, regression paths were introduced between the variables whose β coefficients proved to be significant in the regression analysis, which gave a very good level of model fit to empirical data. As a next step, a multiple-group analysis was performed among the group of people estimating the ILTs of organizational leaders and the group of people estimating the ILTs of political leaders. The results of this analysis showed significant differences in the structure of the cognitive determinants of the ILTs for organizational and political leaders ($\Delta\chi^2$ = 13.22, p < .001). As one can observe in Figure 7, the estimated model proved to be well matching the empirical data in the light of the fit indices in predicting implicit leadership theories of organizational leaders (χ^2/df=1.69, p = .003; *RMSEA*= .07, p(RMSEA ≤ 0.05) = .48, *GFI* = .95, *AGFI* = .91; *CFI* = 92).

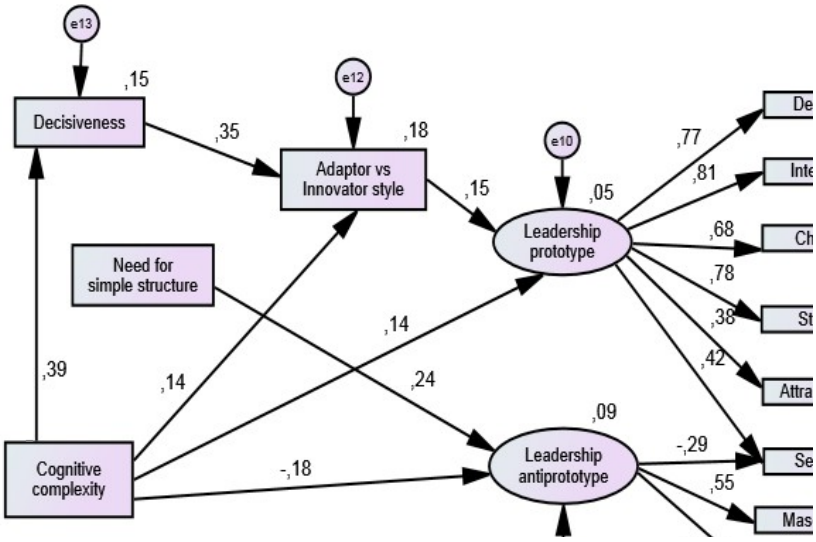


Figure 7. The structural model between cognitive characteristics and implicit leadership theories of organizational leaders

In our study, the configuration of relationships between cognitive characteristics and implicit leadership theories was identified. In the estimated model, two second-order factors of representing ILTs factors were entered. The first factor (*leadership prototype*) explained 5% of variance, while the second factor (*leadership antiprototype*) explained 9% of variance in this model. All of the paths achieved statistical significance (p < .05). The complex relationship configuration comprised the direct and indirect effects of cognitive variables on implicit leadership theories in an organization. High cognitive complexity was directly related to a high level of *leadership prototype* (β = .15) and indirectly to the Adaption - Innovation style (β = .13). Additionally, low cognitive complexity determined high decisiveness (as a motivational aspect of NFC), which then affected a stronger preference for Adaption - Innovation style. Moreover, there was obtained an indirect effect of cognitive complexity on positive ILTs, mediated by the decisiveness and Adaption - Innovation style of organizational leaders. *Leadership antiprototype*, linking a negative leader's pattern and dominance behavior in an organization, directly depended on low cognitive complexity and high need for closure. That is, the greater the tendency to simplify the information structure of information, the stronger the tendency to attribute negative characteristisc to managers in an organization.

The above discussed model of cognitive determination sources in ILTs proved to be unfitting to the data in the group assessing political leaders (χ^2/df= 2.02, p = .001; *RMSEA* = .11, p (RMSEA ≤ 0.05) = .05, *GFI* = .87, *AGFI* = .77; *CFI* = .83). Therefore, a different model of the relationship between variables expressing style of cognitive activity and the ILTs of political leaders has been developed based on parameter modification indexes of the first model (see Figure 8).

As compared with the former model (for organizational leaders), the ILT structure of political leaders has not changed. What changed was the determinant system and the data model fitting metrics. The political *leadership*

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prototype is predicted by the need for simple structure, decisiveness (two factors of NFC), and indirectly by the Innovation style. Low need for cognitive closure (seizing process), but high decisiveness (freezing process) affected the increase of the Innovation style, which was related to the positive prototype of political leaders. The political *leadership prototype* was determined by low need for closure, through the mediator of the Adaption - Innovation style, while the *leadership antiprototype* of political leaders was determined by low cognitive complexity and high need for closure. These relationships may indicate that there are a few elements conducive to revealing positive ILTs: reflective information processing and mechanisms for building complex and dynamic cognitive representations, high openness and flexibility in creating patterns, and the ability to create and accept environmental volatility and unpredictability. Negative ILTs are associated with a simplified and narrow style of world perception, shallow information processing, and the use of a stereotype-based attribution style.

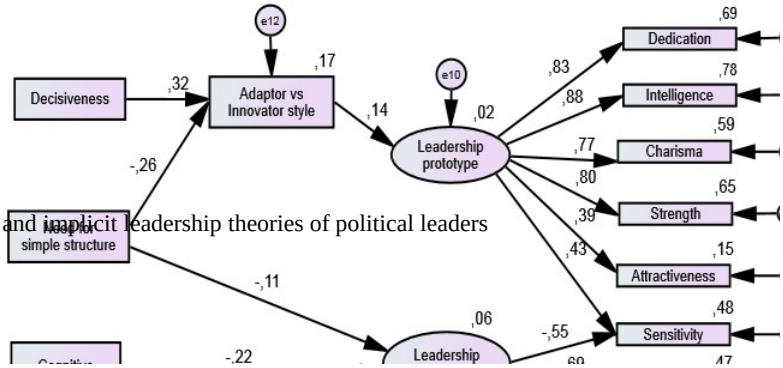

Figure 8. The structural model between cognitive characteristics and implicit leadership theories of political leaders

CONCLUSIONS

The conducted research indicates that there are two leadership patterns in the ILT structure. The first one reflects the prototypical features of (ideal) leaders. The second one covers negative dimensions of ILTs and expresses a leadership antiprototype. This dual ILT structure corresponds with the results of previous studies, which based on the measurement of ILTs by Offermann et al. (1994; Epitropaki & Martin, 2004; 2005). The differences in the ILT structure in organizational and political leaders anticipated in our research became apparent only on the level of individual dimensions, but the 2-factor ILT structure remained basically the same. The effect of similarity of the organizational and political leadership prototypes may be a result of the low level of differentiation between the conceptual categories of the two leader types (Markman & Wisniewski, 1997, which in our study were abstract and lacked concrete references. This means that by definition, ILTs express a general prototype of leadership as an abstract conceptual category, and the differentiation of ILTs depending on the leadership type is revealed on the subordinate level (Rosch, 1978; Lord, et al., 1984), when an individual assesses a specific leader based on ILTs. As it can be seen, the implicit leadership structure is relatively interculturally stable, which increases the versatility in the description and explanation of the mechanisms of ILT functioning and their regulatory consequences in the individual, organizational, and social aspect.

An analysis of the differences in the level of specific ILT dimensions shows that organizational leaders are attributed higher charisma, lower masculinity and lower endurance as compared with political leaders. This means that the image of a leader of an organization is generally associated with greater dynamism, energy, and enthusiasm in action, and that it inspires others, but at the same time is associated with a low level of endurance and masculinity attributes. Moreover, differences in organizational and political leader prototypes dependent on an observer's gender have been shown. As compared with men, women evaluate an organizational leader prototype as more charismatic,

hardworking, and physically attractive, although not much masculine. A political leader prototype is characterized with higher masculinity and tyrannical tendencies in men's than in women's opinion. In conclusion, women are much more inclined to attribute more positive characteristics to both political and organizational leaders, although they associate organizational leadership with greater commitment, diligence, and result orientation, as well as with lower masculinity than political leadership. According to men, a prototypical organizational leader is far less tyrannical and ruthless, but also less masculine, attractive, intelligent and durable than a prototypical political leader. The differences in the image of an ideal organizational and political leaders are most likely a result of different leadership prototype sources. ILTs are typically derived from observing the characteristics and behavior of real leaders, from idealizing the expectations from leaders, and from social stereotypes or projections of one's own character features. Furthermore, the political leader prototype is shaped by the information emerging from the observation of politicians, the medial image of leaders, the political orientation of a leader, or the political views of the observer. The effect of positivity in the ILTs may arise from the tendency to put forward idealized notions and unrealistic expectations towards the leaders (Meindl, Ehrlich. & Dukerich, 1985; Keller, 2000). Negative leadership patterns are usually a result of an attribution error, of projecting one's own character features, or of expressing personal frustrations and deficits that arise from the evaluation of an actual leadership.

The study results have also shown differences in the ILT determinant structure of organizational and political leadership. The organizational leadership prototype is determined by high cognitive complexity, innovative style, and, directly, by the motivational aspect of the need for cognitive closure. On the other hand, the organizational leadership antiprototype is dependent on the simplicity in information processing and high need for cognitive closure. The political leadership prototype is dependent on a strong preference for innovative style and, indirectly, on the need for cognitive closure indicators. Low cognitive complexity and a strong pursuit to simplify the structure of information influence an increase in the level of the political leadership antiprototype. The presented data show that in the ILT determinant model of organizational and political leadership, there is a complex and distinct system of direct and mediatory dependencies. The pattern of positive ILT dimensions is related to the more complex, rational, and open cognitive style, whereas the negative implicit leadership pattern is an effect of a simplified and narrow style of world perception, less complicated, shallow, and dogmatic information processing, and a stereotype-based attribution style.

The presented empirical results, regardless of specific dependencies, also have a more general value. Undoubtedly, they attest that there are distinct mechanisms of ILT structuralization and a regulatory importance of cognitive styles in the formation of differences in the structures of implicit leadership knowledge. This seems understandable within the context of the theory of natural concepts (Rosch, 1978) and the ambiguous nature of intuitive processing (Glöckner, & Witteman 2010). Without having an insight into the role of ILTs, detecting cognitive styles helps to gain an insight into individual ILT differences. Also, in explaining the nature and consequences of regulatory ILTs, an interaction between implicit cognitive schemas and concept structures in the context of declarative knowledge (Sun, 2002) should be taken into account. A peculiar paradox in information processing can be noted here. What is inferred about the implicit schemas is in fact derived from categorization decisions (taken explicitly).

The research conducted and the empirical results obtained have some limitations. It should be noted that in the proposed dependency model, ranges of the explained variance are not large. A sample of the analyzed students can be another limitation of the research. Students are characterized by ILTs that are more people-oriented than managers (Konrad & Kranjcec, 1997). On the other hand, there are numerous studies showing similarity in the ILT structure in students and subordinates (Eden & Leviatan, 1975; Rush, Thomas, & Lord, 1977; Singer, 2001). That would imply that both students and employees evaluate leaders by ILTs rather than by observing actual leadership behavior. Thus, it can be assumed that students, as potential subordinates, use their ILTs to build more abstract and general categorizations of potential (not real) leaders (Quaquebeke & Van Knippenberg, 2012). This thesis also explains the results of our research with regard to the low diversity of ILTs depending on the leader type.

The research conducted and the dependencies discovered confirm the validity and fruitfulness of the exploration direction. What seems necessary in further studies on cognitive ILT determinants is extending the set of cognitive styles, as well as methods for measuring individual differences in this respect. The ILT determination model would need to be extended to include such variables as conceptual category width (Pettigrew, 1983), conceptual equivalence (Garner, 1962), the need for cognition (Caccioppo & Petty, 1982), and other cognitive styles. Furthermore, situational variables should not be ignored, as they can significantly increase the range of ILT variance. Such studies allow to explore the knowledge of the essence, determinants, and consequences of behavioral mechanisms of perceiving leadership in a broad cognitive and social perspective.

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