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Creative Leaders in Bureaucratic Organizations: Are Leaders More Innovative at Higher Levels of the Organizational Hierarchy?

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INTRODUCTION

Research on creativity and innovation in large corporations has on the one hand indicated the crucial contribution and importance of creative employees to overall company innovation, but has on the other hand shown how a challenged creative work climate set by bureaucratic structures and lack of management support may stifle individual motivation and creativity (Amabile, 1997; Amabile, Conti, Coon, Lazenby, & Herron, 1996). Large organizations frequently employ bureaucratic structures characterized by functional departments, and clearly outlined hierarchy and job scope (Weber, 1946). Most often we think of creativity in bureaucratic organizations as belonging to specific functions (e.g., R&D or marketing), but that need not be the case—all jobs in bureaucratic organizations can in principle be carried out more or less creatively, although such creative activity may not (always) be valued positively in the organization. Life in bureaucratic

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organizations is replete with stories of good creative ideas killed by red tape and following-procedure, and of creative employees who struggle with narrow job boundaries and too many layers of management one needs to pass through in order to persuade the organization of the value in a new idea. The result can be motivation loss and companies carrying on in a business-as-usual manner as opposed to venturing into new innovative directions. Several organizational qualities of large corporations may be highlighted that potentially spur creative frustration: (A) long chains of command prohibit swift decision making and creative flexibility; (B) the pursuit of increased efficiency leads to exploitation at the expense of exploration (March, 1991); (C) job descriptions become increasingly clearly defined and specialized, leading to lowered job complexity, possibly with routine and uninteresting jobs resulting, especially at the lower levels in the organization (Dunne & Dougherty, 2012).

However, despite motivational struggles, pains and frustrations with bureaucratic organizing, an important unanswered question remains in the literature: are creative individuals actually more successful in organizational life (Jaussi & Benson, 2012)? "Success" may be measured in a variety of ways (e.g., performance, recognition and awards, salary level), but one important success factor in large corporations is that of leadership level and placement in the organizational hierarchy, which is the success dimension of interest in the present paper. We tested the relation between individual innovativeness to placement at a certain level in the organizational hierarchy in a large international corporation covering production, retailing, and distribution domains, with a distinctly hierarchical structure involving clear lines of command and well-defined job boundaries.

Bureaucratic organizations do need innovation, with support for innovation coming especially from supportive managers, weak ties, and increasing job complexity (Dunne & Dougherty, 2012). Thus it is possible that large corporations seek to place more creative employees higher in the hierarchy. On the other hand, it is also possible that individual creativity either does not matter for company advancement in bureaucratic organizations, or even that reduced individual creativity may be a distinct characteristic higher up in the organization. The latter might be the case if, for example, creative individuals choose more often to leave the company (i.e., a larger employee turnover for creative employees) based on self-deselection as when creative individuals leave in favor of other types of organizational structure favoring innovation. But it could also be due to individual creative virtues not being valued in the organization (e.g., if there is a trade-off between individual abilities needed in organizational exploitation vs. exploration; March, 1991). Such a trade-off would disfavor individuals with divergent capabilities to more convergent ones, leading possibly to increased layoff rates and/or lower promotion rates for creative individuals. An argument for why large companies might not

value creativity in individuals is that creativity is inherently stochastic, wasteful, risky, and uncertain in nature (Simonton, 2003), which seem in sharp contrast with the logic of efficiency and exploitation driving bureaucratic organizing. An argument for the possible positive valuation of individual creativity would conversely be that while lower occupational levels in large corporations might be made up of primarily routine jobs, job complexity and thus the need for creative adaptation as well as intelligent behavior, would be increasingly needed at higher organizational levels. This, in turn, could (in so far as creative potential is recognized in the individual) create a situation where creative individuals are increasingly selected for promotion as the higher level of job complexity further up in the hierarchy may better match their creative capabilities. It thus remains an open question who actually gets selected into higher leadership levels of the organizational hierarchy: the divergent explorer vs. the efficient converger, and thus whether individual creativity is a help or a hindrance in organizational placement at higher levels. To our knowledge no past study has focused on the impact of leader innovativeness on internal company position placement in the organizational hierarchy. The present work aimed to help fill this research gap by examining whether individual innovativeness positively predicted placement into higher leadership levels in the organizational hierarchy. The general research question covered in the present study relates to the effects of IQ and leader innovativeness on leadership level in a large sample of leaders. The leader sample comes from one large international organization, tested for intelligence at recruitment and for innovativeness by their subordinates, thus offering ecological validity and suggesting practical relevance for the recruitment of leaders.

Creative Leadership

Organizational behavior research on employee creativity has examined mainly contextual or organizational factors that facilitate or inhibit creativity (Rego, Sousa, Cunha, Correia, & Saur-Amaral, 2007). In this line of research, leadership is typically regarded as a contextual factor either supporting or suppressing creativity among employees (e.g., Byrne, Mumford, Barrett, & Vessey, 2009; Koseoglu, Liu, & Shalley, 2017; Oldham & Cummings, 1996; Rickards & Moger, 2006; Zhou & George, 2003). However, the individual innovativeness of the leaders themselves should not be forgotten in the focus on employee creativity. Depending on the job function held, individual innovativeness may be crucial in order to be able to perform complex organizational tasks in a skilled and satisfactory manner, by suggesting and implementing novel and useful solutions. Individual innovativeness entails both generating novel and practical ideas or solutions in the early steps of innovation, but also includes

activities related to idea development and implementation (Anderson, De Dreu, & Nijstad, 2004; Tierney & Farmer, 2011). Hülsheger, Anderson, and Salgado (2009) argued that it is important to conceptually distinguish among work innovation criteria, in order to clarify whether creativity (early stages, involving mainly idea generation or solution phases of innovation) or innovation (the whole innovation process, involving additionally idea development, support, and implementation) is studied. This study focuses on individual leader innovativeness, subsuming both managerial creativity skills, and skills relating to selection, development, and implementation of the ideas and concepts in the organization (Amabile, 1988, 1996; Randel, Jaussi, & Wu, 2011; Tierney & Farmer, 2011), in alignment with past studies of individual innovation among employees (e.g., Axtell et al., 2000; Axtell, Holman, & Wall, 2006; de Jong & den Hartog, 2010; Miron, Erez, & Naveh, 2004). The understanding of individual innovativeness among leaders is crucial to further develop the organizational capacity for creative performance at all organizational levels. Following we will briefly review the literature on innovativeness and intelligence in organizational settings.

Innovativeness and Creativity

Axtell et al. (2000) defined organizational innovation as a process involving the generation; adoption; implementation; and incorporation of new ideas, practices, or artifacts within the organization. Innovation may thus be regarded as a broader concept than creativity (which mainly refers to idea generation) and can be said to comprise two different phases involving an awareness or suggestion phase, and an implementation phase (e.g., Amabile, 1988; Axtell et al., 2000). Past research on individual creativity or innovativeness in organizations has tended to use leader ratings of subordinate creativity (e.g., Eisenberger & Aselage, 2009; George & Zhou, 2001; Tierney & Farmer, 2002, 2011) or subordinate innovativeness (e.g., Axtell et al., 2000, 2006). To assess leader (rather than employee) innovativeness, we aggregated subordinate ratings of their direct leader, arguing that subordinates should have direct access to both leader idea generation and idea implementation, as most often both the ideas and their implementations would involve and impact the subordinates directly.

The Relation Between Creativity and Intelligence

Most contemporary creativity research tends to view creativity and intelligence as distinct traits that are only modestly related (for reviews, see Batey & Furnham, 2006; Kim, Cramond, & Vantassel-Baska, 2011), with a meta-analytic study (Kim, 2005) yielding an average weighed r of 0.174 across 21 studies. The correlation may, however, not be of the same

magnitude throughout the IQ spectrum, as suggested by threshold theory, which proposes that below a certain IQ level (approximately IQ 120), there is some (weak to moderate) correlation between IQ and creative potential and achievement, but above this cutoff point, there is no correlation (e.g., Barron, 1961; MacKinnon, 1962). Past research on threshold theory has shown somewhat mixed results, but some support was found in a previous study utilizing partly the same dataset as the current chapter (Christensen, Hartmann, & Rasmussen, 2017). The correlation between leader innovativeness and intelligence was small but positive and significant below an IQ cutoff point of IQ120, while there was no significant relation above this cutoff point, and the two correlations were significantly different. The results were fairly reliable across two samples collected in two distinct years, illustrating support for the theory, albeit the low effect sizes are notable as they render caution as to the practical utility of the results. For the present purposes, it is important to note the small albeit significant overall correlation ($r = 0.08$) between intelligence and individual innovativeness in the present sample, indicating the two constructs are effectively independent.

Intelligence, Individual Innovativeness, and Occupational Level

While many factors have been deemed important for managerial success in company advancement, intelligence remains one of best understood and arguably one of the most important factors. A meta-analysis of the relation between leadership and intelligence indicated a correlation of 0.27 (corrected for range restriction; Judge, Colbert, & Ilies, 2004), and longitudinal studies have corroborated that general mental ability is linked to extrinsic career success (Judge, Klinger, & Simon, 2010). Previous studies of a broad selection of jobs have found that when analyzing the central demands of those jobs, the complexity in the information processing emerges as the most dominant factor differentiating jobs, indicating that jobs can meaningfully be ranked according to their level of complexity (Gottfredson, 1997, 2002a, 2002b). As argued by Gottfredson (1997), organizational life is replete with uncertainty, change, confusion, and misinformation. An extremely important dimension distinguishing among jobs is the mental complexity of the work they require workers to perform. According to Arvey (1986) the most important factor in job complexity is the judgment and reasoning necessary when confronted with novelty, change, uncertainty, unpredictability, and the need to spot and master new information and emerging problems (as is the case in intellectual and innovative labor). Given these findings, it is of no surprise that when occupational level is determined and ranked according to level of complexity, the correlation between the occupational level and the average IQ for incumbents in the specific grade, amounts to 0.9–0.95 (Gottfredson,

1997, 2002a; Jensen, 1980, 1998; Schmidt & Hunter, 2004). However, on the individual level, the correlation between an individual's IQ and occupational level is typically between 0.5 and 0.7, with higher correlations later in life (Schmidt & Hunter, 2004), due to the influence of other factors like personality.

While the IQ literature has tended to examine how high IQ individuals are selected for jobs at higher leadership levels because they are capable of handling more complex information processing, research on creativity has conversely tended to regard job complexity as causal to individual levels of displayed creativity (see Shalley, Zhou, & Oldham, 2004 for a review). The argument is that contextual characteristics, such as the design of jobs (West & Farr, 1990), are of importance to the displayed level of creativity, in that more complex jobs are characterized by higher levels of autonomy, significance, identity, and skill variety, leading to higher levels of intrinsic motivation than simple or routine jobs (Amabile, 1996; Deci & Ryan, 1985). As such, more complex jobs should foster engagement with work tasks, leading to the development of more original and useful ideas. Furthermore, more complex jobs may actually demand creative outcomes by encouraging employees to focus simultaneously on multiple dimensions of their work, whereas simple or routine jobs may inhibit such a focus (Oldham & Cummings, 1996). Past correlational studies have tended to corroborate this hypothesized link between creativity and job complexity. Tierney and Farmer (2002, 2004) showed significant positive relations between supervisory ratings of creativity, and employee's job complexity, as measured from the Dictionary of Occupational Titles (Roos & Treiman, 1980). Using self-reported measures of complexity, Hatcher, Ross, and Collins (1989) also found significant positive relations between job complexity and the number of ideas suggested in an organizational setting. Amabile and Gryskiewicz (1989) illustrated the link between self-reported creativity and the level of freedom and challenge in work positions. Oldham and Cummings (1996) found that the interaction of individual creative skills and job complexity predicted contributions to individual suggestions made; employees produced the most creative work (made more suggestions) when they had appropriate creativity-relevant characteristics, and worked on complex, challenging jobs. Conversely, employees with low creativity-relevant skills did not benefit from enriching (more complex) jobs.

Given the cross-sectional nature of past research on the links between creativity and job complexity, the interpretation of causality between the two measures is debatable. As acknowledged by Oldham and Cummings (1996), it is possible that high creative performers are placed into more complex jobs, rather than job complexity leading to creative outcomes. The present study used data generated in two subsequent years to explore for longitudinal effects of stable individual innovativeness on leadership level, in order to try to tentatively estimate causality between the

two constructs. It is possible that job complexity causes increased levels of innovative performance (through increased intrinsic motivation), but it is also possible that relatively stable levels of individual innovativeness is in part driving the placement of individuals into leadership positions with corresponding levels of complexity.

Further, individual innovativeness may prove a separate predictor of job complexity independent from intelligence, since complex jobs may demand creative skills (Oldham & Cummings, 1996) above and beyond intellectual capacity alone.

Finally, given individual creativity in part depends on domain expertise (Amabile, 1983; Weisberg, 1999), it is possible that the influence of individual innovativeness on leadership level increases with company tenure. Variability in domain expertise would be much higher at the lower level of company tenure (where a mix of novices and experts are being recruited), as opposed to the higher levels of company tenure (where, in effect, all leaders are experts). As such, domain experience would be an important predictor of leadership level for people new on the job, but as company tenure increases, experience would gradually be rendered less important. Similar findings have been shown in the IQ literature, where, for example, IQ becomes a better predictor of performance with higher levels of experience. The correlation between IQ and job performance ratings for incumbents increase with experience, in one study rising from 0.35 for people with 0–3 years experience going up to 0.59 for people with >12 years experience (McDaniel, 1985 quoted in Schmidt & Hunter, 2004). Conversely, the correlation between amount of experience and performance ratings for incumbents decrease with higher levels of job experience (McDaniel, Schmidt, & Hunter, 1988). Differences in experience are very important (0.49) among newly hired employees, but drops gradually to a low of 0.15 with 12+ years of experience.

In summary, the present study aimed to explore whether individual innovativeness and intelligence independently predict leadership level, and further whether the influence of individual innovativeness on leadership level increases with company tenure. Finally, following Oldham and Cummings (1996) and utilizing the longitudinal nature of the dataset, we explored whether an individual increase (or decrease) in leadership level led to an increase (or decrease) in perceived innovative behavior.

METHODS

Participants

Data were compiled from HR databases in a large international company with activities within multiple business segments, and in excess of 100.000 employees worldwide. All data were provided to the researchers

for research purposes, provided the company could remain anonymous in any publication. Participants in this study were 4257 company leaders (1395 female, 2862 male), with a mean age of $M = 39.0$ ($SD = 8.4$; range: 22–68 years) representing 115 different nationalities, currently working in company branches in 117 different countries. They had a mean tenure in the company of $M = 10.8$ years ($SD = 7.7$; range: 0–45 years), and their occupational level, using the Mercer IPE (International Position Evaluation system; Mercer, 2017) scale reflecting job size and complexity, was $M = 54.6$ ($SD = 3.8$; range: 40–73).

Measures

Intelligence Test

All leaders were tested as a part of the recruitment procedure at the company using the in house intelligence test, developed by a leading global test developer. The test is similar to the Wonderlic (1961) test and is a 12-min test with 50 items: 25 verbal, 17 numerical, and 8 visual-spatial items. The tool is available in 68 different languages, and all employees take the test during recruitment following a standardized test procedure administered by HR professionals. Internal studies conducted by the organization show a test-retest correlation of 0.76, and find correlations to the commonly employed IQ test "Raven Advanced Progressive Matrices" ranging from 0.40 to 0.59. The test is applied globally by the organization, but only where it complies with local laws and regulations, and the test results are considered as one indicator together with other information about applicants. Hiring decisions are based on all information about applicants (CV, track record, education, performance, interview, references, etc.). Using intelligence measured at recruitment to test the present hypotheses is warranted, given that intelligence is considered a relatively stable construct across the lifespan, as indicated by both cohort-sequential analyses (e.g., Schaie & Hertzog, 1983), and longitudinal studies of differential stability (e.g., Larsen, Hartmann, & Nyborg, 2008).

Individual Innovativeness

Perception of leader innovativeness was scored using responses to the statement ("My leader is innovative and seeks out new ideas") from subordinates directly reporting to the leader on a 5-point Likert scale from "1" (strongly disagree) to "5" (strongly agree), as part of an employee satisfaction survey. The item denotes especially the innovative and ideational aspects of individual innovation. The use of a single item is less than optimal, but the large sample size renders it infeasible for the organization to include additional items in the survey. Construct validity and reliability tests are reported in the results section. The survey is conducted annually for the company by a global survey provider, and administered both

online and in paper format, with employees responding anonymously and reports being generated when there is a minimum of five respondents per leader. The survey provider translated the survey for international use, with a subsequent translation check being carried out by bilingual company employees. By aggregating across subordinate ratings of leader innovativeness, it is possible to reduce the effect of outlier ratings, and test for the variance in ratings across subordinates. To reduce noise created from extreme cases where leaders were rated by only a single or few subordinates and in order to increase reliability of the innovativeness rating, we only included leaders who were rated by at least five subordinates. In 2009, the leaders were on average rated by 8.1 subordinate employees, for a total of 21,865 individual employees making innovativeness ratings of their direct leader, while in 2010, each leader was on average rated by 9.1 employees for a total of 26,769 employees rating their leader's innovativeness. The leaders were rated in 2009 and/or 2010, with 1303 leaders rated only in 2009, 1567 leaders rated only in 2010, and 1387 rated in both years. Both the combined sample and the subset rated in both 2009 and 2010 were utilized in the corresponding below analyses. Reliability, validity, and stability of the individual innovativeness measure are reported in the first part of the result section.

Leadership Level

Each leader's occupational level was collected by the company using the Mercer International Position Evaluation system (Mercer, 2017). This is widely used to assess the scope and complexity of jobs, to determine the appropriate compensation range, and gives an indication of the leader's hierarchical placement in the organization. Leaders are placed into occupational level bands with a corresponding title structure: Leaders below occupational level 53 are titled "Administrators," 53–55 are "Managers," 56–58 are "General Managers," 59–61 are "Directors," and 62 and above are "Executives." Higher level bands correspond to higher levels of job complexity. For the present analysis, these occupational level bands were assessed to be a valid aggregation of leadership levels, with similar levels of job complexity, and hence a useful grouping of occupational levels.

RESULTS

Reliability, Validity, and Stability of Individual Innovativeness

Validity tests displayed satisfactory construct validity of the individual innovativeness measure with Axtell et al.'s (2000, 2006) measure of individual innovativeness (reported in Christensen et al., 2017). Axtell et al.'s (2000, 2006) measure consists of two scales: *Suggestions* asks to which extent the respondent has proposed changes to various aspects of

work, specifically (1) new targets or objectives, (2) new working methods or techniques, (3) new methods to achieve work targets, (4) new information or recording systems, (5) new products or product improvements, and (6) other aspects of their work ($r = 0.78$ to individual innovativeness), and *implementations*, which cover the same aspects of work as the suggestions scale, but instead asks to which extent suggestions have been implemented ($r = 0.69$ to individual innovativeness).

Reliability of the innovativeness ratings was assessed in two ways: While the employee satisfaction questionnaire was anonymous, a subset of the subordinates volunteered their identity, making it possible to estimate test-retest reliability across two sample years (see Christensen et al., 2017, for details). The test-retest reliability for leader innovativeness, where the same group of at least five subordinates rated the same leader for two consecutive years (2009 and 2010, respectively), was $r = 0.68$. Overall, the subset of leaders who were rated in both 2009 and 2010 correlated $r = 0.49$, but it should be noted that this estimate includes much more variability in the sample of raters, in that many of these leaders/subordinates would have changed position in the organization, or left (while new subordinates would have arrived). Overall, the average leader level of innovativeness was somewhat stable over a 1-year timespan.

Another reliability estimate was to identify leaders with multiple subordinates making ratings, and then randomly split the employees into two groups, making it possible to compare the average ratings of the two groups for the same leader. In effect this split-half measure constitutes a kind of interrater reliability for groups of raters, and it showed adequate reliability with at least five subordinates in each half $r = 0.587$. With the criteria set to at least nine subordinates in each group (the approximate average number of direct reports from subordinates in our leader sample), the correlation was $r = 0.72$, indicating a high level of agreement across subgroups.

Given the possibility that increased job complexity may influence creativity ratings positively, a number of tests were carried out to test whether a possible positive correlation between leadership level and innovativeness was caused by leadership level switches upwards (downwards) leading to higher (lower) innovativeness ratings (i.e., job complexity causing changes in individual innovativeness). We explored this using the subset of the leaders who switched position in the organization between 2009 and 2010, and noted whether this switch had been a move upwards or downwards in the organizational hierarchy. In so far as job complexity as an environmental factor has a positive effect on the judged level of innovativeness for leaders moving up in the hierarchy, but a negative effect on the innovativeness ratings of the leaders moving to a lower hierarchical level, that could support job complexity as a contextual factor affecting creative outcome in leader innovativeness perception scores. For leaders remaining in their position

from 2009 to 2010, a paired *t*-test showed a slight increase in innovativeness scores over the 2 years $t(656) = 2.19$, $P < 0.03$ (mean 2009 = 3.99; mean 2010 = 4.03 on a 5-point scale). No significant differences could be detected for either leaders moving up, paired-$t(120) = 1.06$, $P = 0.29$ (mean 2009 = 3.97; mean 2010 = 3.92), or leaders moving down, paired-$t(56) = -0.32$, $P = 0.75$ (mean 2009 = 4.04; mean 2010 = 4.06) in the hierarchy over the 1-year time course. As such, no significant effect of changing job complexity was detected from 2009 to 2010 on leader innovativeness. This may in part be due to the reduced statistical power due to the small sample size, but tentatively it should be noted that if anything the directionality appears to be going in the opposing direction to that proposed by past research (Oldham & Cummings, 1996) which suggested that job complexity causes changes in creative output (i.e., slightly higher innovativeness scores when moving down in the hierarchy, and slightly lower innovativeness scores when moving up). In so far as job positions become less complex to perform by the leader with experience, it is counter to past research that innovativeness scores increase with leaders staying in their position. These results tentatively suggest that individual innovativeness is fairly stable over time, even in situations of contextual changes in job complexity.

Overall, the innovativeness measure used in the present study appears to be somewhat stable at the individual level across two distinct years and across samples of raters, making it suitable for predicting leadership level.

Intelligence, Innovativeness, and Leadership Level

To estimate the impact of innovativeness and intelligence on leadership level (job scope and complexity), multiple regression was carried out. Regressing occupational level onto innovativeness and intelligence with age and company tenure as covariates yielded the following results: Combined the four measures explained a significant proportion of the variance in manager occupational level, $R^2 = 0.37$, $F(4, 3921) = 585.58$, $P < 0.001$. Innovativeness significantly predicted leadership level ($\beta = 0.08$, $P < 0.001$), as did intelligence ($\beta = 0.36$, $P < 0.001$), age ($\beta = 0.45$, $P < 0.001$), and company tenure ($\beta = 0.07$, $P < 0.001$).

To examine whether the influence of intelligence and innovativeness on leadership level changes with company experience, we divided our sample into company tenure quartiles (see Table 1). We then ran individual regressions of age, intelligence, and innovativeness onto leadership level by tenure levels (see Table 2). Results indicated that for lower levels of tenure, age is an important predictor of leadership level (perhaps caused by recruitment of experienced leaders from outside the company), but this age effect diminishes for employees with more tenure. Intelligence and innovativeness significantly predict leadership level for all tenure levels, but with an increasing trend over tenure quartiles.

TABLE 1 Mean and SD for Intelligence, Innovativeness, and Age by Company Tenure Quartiles

Company Tenure	*N*	**IQ Test Raw Score** *M* **(SD)**	**Innovativeness** *M* **(SD)**	**Age** *M* **(SD)**
0–5 years	1119	24.85 (4.99)	3.94 (0.52)	37.04 (8.31)
6–9 years	1086	25.11 (5.34)	4.01 (0.49)	34.31 (5.88)
10–14 years	885	25.18 (5.21)	4.02 (0.50)	38.85 (6.03)
15+ years	900	25.61 (6.08)	3.98 (0.47)	47.60 (6.76)
Total	3990	25.14 (5.38)	3.98 (0.50)	39.00 (8.37)

TABLE 2 Regressing Occupational level onto Age, Intelligence, and Innovativeness by Company Tenure Quartiles

Company Tenure	*F*	R^2	**Variable**	*B*	β	*t*
0–5 years	$F(3,1063) = 346.30$	0.49	Age	0.29	0.64	29.45***
			Intelligence	0.20	0.27	12.40***
			Innovativeness	0.40	0.06	2.60**
6–9 years	$F(3,1079) = 167.62$	0.32	Age	0.25	0.44	17.47***
			Intelligence	0.23	0.36	14.42***
			Innovativeness	0.39	0.06	2.29*
10–14 years	$F(3,876) = 62.64$	0.18	Age	0.11	0.21	6.64***
			Intelligence	0.25	0.39	12.43***
			Innovativeness	0.74	0.11	3.69***
15+ years	$F(3,892) = 109.33$	0.27	Age	0.03	0.06	1.96
			Intelligence	0.33	0.49	16.90***
			Innovativeness	1.03	0.12	4.15***
Total	$F(4,3921) = 585.58$	0.37	Age	0.21	0.45	28.07***
			Intelligence	0.26	0.36	28.62***
			Innovativeness	0.65	0.08	6.62***
			Company tenure	0.03	0.07	4.17***

*$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.

DISCUSSION

Combined, the results indicate that while many factors may influence the placement of individuals in a particular leadership level, two of the important factors are IQ and individual innovativeness. Individual innovativeness does, independently from IQ, predict leader placement into higher levels of the organizational hierarchy. This conclusion may help contextualize the predominantly negative stories of creative efforts in bureaucratic organizations: while creative frustration with bureaucratic structures with resulting motivation loss may predominate at lower levels, leaders placed into more complex jobs can make positive use of their individual capabilities. It may further comfort the creative individual currently stuck at the bottom of the pyramid, contemplating exit strategies: these results suggest that individual creativity is increasingly needed higher up in the organization, and these individual capabilities (together with intelligence) help predict at which leadership level leaders are positioned. With increasing company tenure, intelligence and innovativeness increase in their importance in predicting leadership level. Intelligence was the strongest predictor, but innovativeness was a separate and significant predictor as well, across all levels of company tenure. Interestingly, innovativeness displayed the strongest relation to leadership levels for the leaders with the most company tenure, suggesting that, like intelligence, the influence of innovativeness on leadership levels increases after significant company knowledge and experience is acquired—or perhaps that the higher IQ and innovativeness of the specific leader results in him/her acquiring the necessary content knowledge to increase in leadership level. The link between individual innovativeness and leadership level found in the present study tentatively challenges the assumption in past creativity research that high job complexity causes increased creative performance. Rather, the present study may be interpreted as tentative support to the converse explanation, that is, that individual innovativeness may be a fairly stable construct, where the correlation to job complexity (leadership level) could be a consequence of innovative individuals being placed into more complex jobs. Note, though, that it is also possible, that both causalities operate simultaneously. This would be the case if more complex jobs require increased individual creative capabilities to fulfill the position, and that the more complex job at the same time allow for increased display of these same creative capabilities.

The significant findings of individual innovativeness predicting leadership level hold promise for further examining the role of individual innovativeness in organizational behavior more generally. Further studies are needed to explore whether individual innovativeness predict promotions and career advancement more generally, and to what extent it is the skills involved in the early steps of innovation (such as idea generation,

usually labeled creativity) or the later steps (such as idea development or implementation) that explains our findings. One important direction for future research is to look at the potential mediating role of personality in the relation between individual innovativeness and leadership level. The present analysis assumes that the documented link between innovativeness and leadership level is caused by innovative behavior in daily operations by the leaders. But past personality research has documented that leadership is associated with extraversion (Judge, Bono, Ilies & Gerhardt, 2002), that creative individuals (at least in some domains) are often more extraverted (Feist, 1998), and it has been documented that extraverted individuals more often get promoted (Ng, Eby, Sorensen, & Feldman, 2005). Therefore future research should consider whether (part of) the link between individual innovativeness and leadership level may be due to personality traits.

The present analysis was conducted in the context of a single international company working in multiple business segments. Given the case setting, it is not clear how the present findings will generalize to other companies in other business segments. It should be noted that the company business segments mainly cover typical production, distribution, and retailing domains. This is noteworthy because these domains are not considered typical creative industries in need of a high degree of innovation. Nonetheless, individual innovativeness as perceived by subordinates appeared as one factor predicting the placement in leadership levels. It may be hypothesized that the connection between innovativeness and leadership level could be even stronger (and the link between IQ and leadership level perhaps relatively weaker) in the so-called creative industries, or with jobs involving new product development. Naturally the present study has some limitations. The relationship between leadership level and IQ could possibly be confounded by the procedure used in the company for promotion. The company's knowledge of the importance of IQ in relationship to job performance and ability to handle increased complexity has resulted in increased attention to IQ and the use of IQ with respect to promotion. Part of the decision for promotion may sometimes be influenced by IQ level, thereby selecting higher IQ subjects into higher leadership levels. However, IQ is but one among many factors for promoting decisions, and other factors like past and current performance play a crucial role. For the present case, we have no reason to assume that a similar argument may be advanced for individual innovativeness, and thus it is possible that HR policies pushing for IQ estimates playing a part in matters of position filling could possibly act against effects of individual innovativeness in the present sample (thereby masking a potential larger true effect).

The current study does not contain an analysis of leaders leaving the company, but it can be expected that leaders leaving the company would

be mixture of low performers (having their contracts terminated) and high performers (seeking new opportunities). It is unknown to which degree sample biases in these terminated or resigning leaders may confound some of our findings, although they are likely to cause a restriction of range. Future research should examine whether creative individuals more often leave bureaucratic organizations, and for what reason. Finally, given the single-company setting for the present sample, future research should examine whether these results generalize to other large bureaucratic corporations.

Implications

The present research suggests that leader individual innovativeness may be measured in a fairly simple manner, through subordinate ratings of their direct leader. Further, the results show that such a measure of individual innovativeness did have predictive value of placement in a real-life situation among leaders in a bureaucratic organization working within multiple (not usually termed creative) business domains. This would suggest that the level of individual innovativeness may be one important factor that organizations could attempt to measure, in matters of recruitment and placement into the organizational hierarchy. Furthermore, the present study documented that both intelligence and innovativeness predicted leadership level across various levels of tenure. It was not the case that individual innovativeness and intelligence was rendered irrelevant by company tenure. Rather, at all levels of tenure—even with 15 years company experience—individual innovativeness and intelligence predicted leadership level, evidencing the importance of the measures at all levels of experience.

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