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**Reciprocal Effects of Follower Proactivity and LMX:  
A Longitudinal Analysis**

Felix C. Brodbeck

Ralph Woschée

Katharina G. Kugler

Ludwig-Maximilians-Universitaet Muenchen, Munich, Germany

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**ABSTRACT**

In organizational context, proactivity refers to the active role of employees in influencing their work environment, which includes the relationship with their supervisor. With two longitudinally examined cohorts of newcomers in a large car manufacturer the relationships between personal initiative (a proactivity personality construct) of followers and their leader-member exchange (LMX) quality were studied. Results support the assumption that followers' personal initiative is a relatively stable personality disposition, which directionally impacts positively on LMX-quality. Moreover, LMX-quality in return impacts on personal initiative, which speaks to a pivotal role played by leaders in promoting employee proactivity at work.

### **Reciprocal Effects of Follower Proactivity and LMX: A Longitudinal Analysis**

Concepts of proactivity, like proactive personality (Bateman & Crant, 1993) and personal initiative (Frese & Fay, 2001), are based on the fundamental idea that human beings are not only influenced by their environment but also influence the very same (Tornau & Frese, 2012). In the organizational context proactivity refers to the active role of employees in shaping their work environment (Crant, 2000). Given that today's work environment becomes increasingly more dynamic, complex and decentralized, proactivity is not only essential for individual performance of employees and organizational success as a whole (Crant, 2000), it is also likely to be of high importance to leadership and the quality of leader-follower relationships (LMX).

According to LMX theory, the personal characteristics not only of supervisors but also of followers affect their first contacts and interactions and lay the foundation for the future quality of the leadership relationship (Dienesch & Liden, 1986). Therefore, Gerstner and Day (1997) recommended investigating dispositional characteristics and behavioral tendencies, which can be associated theoretically with LMX. Because proactive followers actively influence and shape their work environment (Tornau & Frese, 2012), it is proposed that proactive followers shape the relationship to their supervisor just as actively, which in turn should lead to high LMX-quality.

In the study presented in our poster, the directional relationship between follower proactivity (as a relatively stable personality disposition) and LMX (as a relational construct, which is sensitive to dynamic change) are examined longitudinally in two different organizational newcomer cohorts. Because there is considerable debate about the characterization of personal initiative as a dispositional construct versus a behavioral construct of proactivity (e.g., Tornau & Frese, 2012), the potentially reciprocal nature of the relationship between proactivity and LMX is also addressed. Longitudinal studies about the effects of

proactive personality are very rare, and they are also needed for studying the potential antecedents of behavioral proactivity (Bindl & Parker, 2011). To our knowledge there is no longitudinal empirical evidence (yet) available which addresses the directional and potentially reciprocal relationships between follower proactivity and LMX-quality.

### **Theoretical Background and Hypotheses**

#### **Proactivity and personal initiative**

Proactive behavior in the organizational context has important implications for both the proactive individual and the organization: “Proactive behavior refers to anticipatory action that employees take to impact themselves and/or their environments” (Grant & Ashford, 2008, p. 8). This definition differentiates proactive behavior from generally motivated behavior and behavior that tends to be passive and reactive in two key aspects: proactive behavior is, on the one hand, *acting in advance* and, on the other hand, *intended impact*. When employees become proactive, their aim is to significantly change themselves, others or the context in which they find themselves. Parker, Bindl, and Strauss (2010) give a concise summary definition: “Proactivity has three attributes: It is self-starting, change oriented, and future focused (p. 828).

In their recent meta-analysis, Tornau and Frese (2012) identified “proactive personality” (cf. Bateman & Crant, 1993) and “personal initiative/personality” as functionally equivalent constructs. Both are personality dispositions in the sense of a relatively stable behavior tendency and they strongly overlap conceptually and empirically. In a meta-analytic estimate with  $k = 4$  studies (sample size-weighted and reliability corrected mean effect sizes) questionnaire measures of proactive personality and personal initiative/personality correlate with  $r_{wc} = .71$  (Tornau & Frese, 2012, p. 20). Because characteristics of personality are stable in the medium term

(Asendorpf, 2007), we assume that personal initiative (measured as a personality disposition) will have high auto-correlations over a time span of up to 12 months (Hypothesis 1).

### **Leader-member exchange (LMX)**

LMX theory conceptualizes leadership as a process of interaction between an employee and his/her supervisor and is concerned with analyzing the quality of the dyadic relationship between the two. With an LMX perspective, the focus of leadership research is no longer on leader attributes and behaviors, but on inter-individual relationships between followers and their supervisor, while the quality of the relationships between various followers and the same supervisor may vary (Schyns, 2002). High LMX ratings were shown to relate to positive consequences for the follower, for example, high evaluations of performance, high objective performance, general job satisfaction, well-being, satisfaction with the supervisor, stronger organizational commitment, positive perceptions of roles and less likelihood of reported turnover intentions (e.g., Gerstner & Day, 1997).

Graen and Uhl-Bien (1995) describe in more detail how successful LMX relationships develop over time in leader-follower dyads. During the development of an LMX relationship, a permanent exchange takes place that is shaped by both participants within the organizational environment. Thus, the LMX-quality is likely to change over time, especially in the early phase of a leader-follower relationship (e.g., during the first 6 to 12 months), with a developmental prospect towards a more mature and stable relationship after a while (e.g., after 12 or 18 months). By considering dynamic developments in LMX, we assume that longitudinal measures of LMX will have a high variance and a low to medium auto-correlation in early phases, whereas in later phases variance should be lower and auto-correlations should be higher (Hypothesis 2).

### **Follower proactivity as predictor of LMX**

Since personal characteristics of leaders and followers affect LMX, Gerstner and Day (1997) recommended investigating dispositional characteristics that can be associated theoretically with LMX. Personality traits such as the 'Big Five' have been described to promote or hinder high-quality exchange relationships between supervisor and follower (Bernerth, Armenakis, Feild, Giles, and Walker, 2007). A recent study, published by Zhang, Wang, and Shi (2012), addresses the relationship between follower proactivity and LMX directly in relation to leader proactivity. The authors draw on prior research on proactive personality and person-environment fit and examined a congruence effect of leader and follower proactivity on LMX-quality. Results of cross-level polynomial regressions on leader-follower dyads support their congruence hypothesis. However, an asymmetrical incongruence effect was also found, which indicates that the higher the follower's proactivity the higher rated is LMX quality. In other words, a follower can barely be too proactive for a high-quality leader-follower relationship to develop. According to Zhang et al. (2012, p. 118) follower proactivity is positively related to LMX quality ( $r = .28, p < .001$ ) whereas leader proactivity is not ( $r = .08, ns.$ ). However, for empirically testing the herewith indicated possible directional effect of follower proactivity on LMX quality, a longitudinal design is necessary, which was not employed by Zhang et al. (2012) for testing relationships between employee proactivity and LMX.

According to LMX theory, the personal characteristics of supervisors and followers affect their first contacts and interactions and lay the foundation for the future quality of the leadership relationship (Dienesch & Liden, 1986). In our study we build upon the asymmetrical incongruence effect and the direct correlation between follower proactivity and LMX reported by Zhang et al. (2012), who used followers' LMX reports. Further drawing on the above outlined theoretical considerations of LMX theory we assume that proactive followers more actively

influence and shape their working relationship with their leaders, which results in high-quality LMX relationships – on the followers part, so to speak. Thus, a directional impact of follower proactivity on LMX quality is assumed to become evident in our longitudinal design (Hypothesis 3).

### **LMX as a predictor of follower proactivity**

How can a directional effect of LMX-quality on follower proactivity be theoretically possible, when proactivity is conceptualized and measured as a personality disposition? In their recent meta-analysis Tornau and Frese (2012) point out that two different concepts of proactivity exist - proactive personality and proactive behavior. Proactive personality measures are typically recorded by self-reporting in the form of questionnaires. In contrast, proactive behavior is conceptualized as the interaction of personality and environment which becomes apparent in behavior. While personal initiative, as a personality disposition, and proactive personality (both are usually measured via self-report questionnaire) are defined as broad concepts that lead to a series of generally proactive behavior patterns (e.g. “I actively attack problems”, Frese, Fay, Hilburger, Leng, & Tag, 1997, p. 161), personal initiative, as behavior (e.g., measured by interviews), relates to specific observable behavior patterns (e.g. “This person often tries to bring about improved procedures for the work unit or department”, Morrison & Phelps, 1999, p. 410). It is in this sense that the personal initiative concept of proactivity is broader than the proactive personality concept. It includes two types of constructs, a proactive personality disposition and a behavioral syndrome of personal initiative, which are closely related to each other.

Moreover, Frese and his collaborators conceptualize personal initiative as an extra-role work behavioral syndrome that is based on developing higher goals than those formally specified by the workplace through a proactive attitude, characterized by consistency with the

organization's mission, long-term focus, goal-direction and action-orientation, persistency in the face of barriers or setbacks, and self-starting activity (Frese, Kring, Soose, & Zempel, 1996, p. 38). Thus, personal initiative describes the individual tendency to demonstrate a series of proactive, change-oriented behavior patterns that are specifically aimed at organizational strategies and objectives (Thomas, Whitman, & Viswesvaran, 2010). As such, personal initiative/personality is conceptualized as a contextually adaptive behavioral tendency, which is shaped by contextual factors, including leadership behavior and the quality of leader-follower relationships. This is most relevant for occupational socialization during the first months and year after entering an organization, where leadership and LMX-quality are impactful context conditions for shaping employee work behavior and entraining relatively stable behavioral tendencies. Therefore we assume that LMX-quality can directionally influence follower proactivity when measured as personal initiative via self-reporting of followers. Such a directional impact of LMX on follower proactivity is assumed to become evident in our longitudinal study (Hypothesis 4).

## **Method**

### **Sample and procedure**

All participants were employees of a leading German car manufacturer who joined the company either 6 or 12 months prior to the first measurement time (T1). The study was administered via an online questionnaire. Data was collected in two separate cohorts and at two points in time (T1 and T2) in each cohort. For cohort A, the first assessment (T1) took place about six months after the participants had entered the organization; in cohort B, the participants had already been in the company for about twelve months at the time of the first assessment



(T1). The time span between the first (T1) and the second (T2) assessment was 12 months for cohort A and 6 months for cohort B.

In cohort A, 248 employees were contacted, 136 of which participated in both assessments (T1 and T2), yielding an overall response rate of 55%. Seventy-three percent of the participants were male and 84% of the participants were under 35 years of age. In cohort B, 356 employees were contacted, 193 of which participated in both assessments (T1 and T2), yielding an overall response rate of 54%. Seventy-nine percent of the participants were male and 85% of the participants were under 35 years of age. Most of the participants graduated in the field of engineering and business administration, whereas few reported to have graduated in the field of social science or natural sciences.

## Measures

*Personal initiative.* Personal initiative was assessed with the German version of the subscale *Self-reported initiative* developed by Frese et al. (1997; 7 items, 5-point Likert-type scale). The reliabilities of the scale for both cohorts together was  $\alpha = .77$  at T1 and  $\alpha = .84$  at T2.

*Leader-member exchange (LMX).* Participants answered the seven-item LMX-7 scale developed by Graen and Uhl-Bien (1995) in its German version (Schyns, 2002) using a 5-point Likert-type scale. The reliability of the scale for both cohorts together was  $\alpha = .87$  at T1 and  $\alpha = .89$  at T2.

## Results

Table 1 and 2 show descriptive statistics, correlations, and reliabilities for the variables studied in the two cohorts A and B respectively.

### Test-retest correlations for personal initiative and LMX

The auto-correlation for personal initiative at Time 1 and 2 was examined in both cohorts (see Table 3). For the early period of 12 months (Cohort A: from the 6<sup>th</sup> to the 18<sup>th</sup> month of organizational tenure) a test-retest reliability of  $r = .68$  ( $p < .01$ ) was obtained and over the later period of 6 months (Cohort B: from the 12<sup>th</sup> to the 18<sup>th</sup> month of organizational tenure) a test-retest reliability of  $r = .73$  ( $p < .01$ ) was obtained. For comparison, 12 months test-retest reliabilities of Big Five scales were reported to be between  $r = .78$  and  $r = .87$  by Murray, Rawlings, Allen, and Trinder (2003).

The test-retest reliabilities for personal initiative fall short of the high levels reported for the Big Five scales. However, the stabilities obtained for the early 12 months period (Cohort A) and the late 6 months period (Cohort B) are on a medium to high level and statistically indistinguishable from each other (Fisher's  $z = -0.88$ , ns), speaking to a relatively stable behavioral disposition. We thus refrain from fully rejecting Hypothesis 1.

For LMX, over the early period of 12 months (Cohort A: from the 6<sup>th</sup> to the 18<sup>th</sup> month of organizational tenure) a correlation of  $r = .55$  ( $p < .01$ ) was obtained, and over the later period of six months (Cohort B: from the 12<sup>th</sup> to the 18<sup>th</sup> month of organizational tenure) a correlation of  $r = .73$  ( $p < .01$ ) was obtained, indicating relatively stable leader-follower relationships in that cohort (see Table 3). The auto-correlations for the followers' LMX quality ratings differ from the respective auto-correlations for personal initiative in that re-test reliability for the early 12 months period was significantly lower than for the later 6 months period (Fisher's  $z = -2.75$ ,  $p < .01$ ). Further inspection of LMX mean values reveals that for the earlier Cohort A (6<sup>th</sup> to 18<sup>th</sup> month) the LMX mean is highest at T1 ( $M = 3.72$ ) and significantly lower at T2 ( $M = 3.51$ ), indicating downward changes and suggesting a recovering honeymoon effect. In contrast, for the later Cohort B (12<sup>th</sup> to 18<sup>th</sup> month) the LMX means at T1 ( $M = 3.65$ ) and T2 ( $M = 3.64$ ) are very

similar to each other, indicating stable LMX-ratings, which suggests a mature leader-follower relationship. These findings together are in support of Hypothesis 2.

### **Predicting changes in LMX from T1 to T2 by personal initiative at T1**

In order to use the full power of the two sample study, the regression analysis for testing Hypotheses 3 was conducted across both cohorts A and B, while controlling for cohort type (see Table 4). The directional influence of personal initiative at Time 1 on LMX at T2 was examined after controlling for LMX at Time 1. Across both cohorts personal initiative significantly predicts LMX at T2 ( $\beta = .12, p < .01$ ), which is in support of Hypothesis 3. The direction of the significant effect of Cohort on LMX Time 2 ( $\beta = -.13, p < .01$ ) indicates that the shorter the time period measured (12 months versus 6 months) and the higher organizational tenure was at Time 1 (6 months versus 12 months) the higher were the LMX-quality ratings.

### **Predicting Changes in personal initiative from T1 to T2 by LMX at T1**

The regression analysis for testing Hypothesis 4 was again conducted across both cohorts A and B, while controlling for cohort type (see Table 5). The directional impact of LMX at Time 1 on personal initiative at T2 was examined after controlling for personal initiative at Time 1. Across both cohorts LMX significantly predicts personal initiative at T2 ( $\beta = .10, p < .05$ ). There was no effect for cohort type ( $\beta = -.02, ns$ ).

## **Discussion**

The purpose of the present study was to examine the dynamics and the potentially reciprocal relationships between follower proactivity and LMX-quality with organizational newcomers. A longitudinal design allowed for testing the dispositional nature of follower proactivity, the dynamics of LMX-quality over time, and potentially reciprocal effects. Our findings support the view that personal initiative can be characterized as a personality construct

(Hypothesis 1). The dynamic nature of LMX could be differentiated into an instable entry phase, from the 6<sup>th</sup> to the 18<sup>th</sup> month after joining the organization, and a stable mature phase, from the 12<sup>th</sup> to 18<sup>th</sup> month (Hypothesis 2). Both directional effects were empirically substantiated, supporting the possibility of a reciprocal relationship between follower proactivity and LMX-quality (Hypotheses 3 and 4).

Our longitudinal study makes several theoretical contributions to proactivity and LMX research. The directional effect established for follower proactivity on LMX corroborates and extends prior research about follower and leader proactivity as a congruency predictor of follower rated LMX (e.g. Zhang, et al., 2012). A directional effect of LMX-quality on follower proactivity was never reported before, and from a purely dispositional perspective on proactivity, seems implausible. However, the double nature of proactivity in organizational context (dispositional and behavioral), put forward for example by Tornau and Frese (2012), provides an explanation for our finding. As a limitation of our study, it has to be noted, that behavioral and dispositional components of proactivity were not distinguished in measurement. We believe, however, that further investigating the possibility of a reciprocal relationship between follower proactivity and LMX-quality is justified by the results reported. For future research, we recommend the use of extended longitudinal designs and consideration of the follower and the leader side when measuring proactivity and LMX. Third, if one is willing to interpret follower rated LMX-quality to represent LMX-quality to at least some extent, future research about the role of leaders for follower proactivity seems justifiable on the basis of the results reported here.

Our study has several implications for leadership practice and personnel development in organizations. It demonstrates that attention must be paid to leadership processes when establishing and developing employee proactivity. It shows that followers play a direct and

active role in shaping LMX-quality from which they can profit. It promotes conceptualizing leadership as a two-way process, which proactive followers can foster considerably. And it points to a leader role which develops LMX-quality with an eye on employee proactivity in mind to help with their followers to help them becoming more proactive and valuable to them for achieving organizational goals.

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Table 1

*Descriptive Statistics, Intercorrelations and Reliabilities for the Study Variables (Cohort A)*

Variable	M	SD	1	2	3	4
1 Personal initiative (T1)	4.13	0.44	(.77)			
2 LMX (T1)	3.72	0.62	.20*	(.87)		
3 Personal initiative (T2)	4.12	0.45	.68**	.23*	(.80)	
4 LMX (T2)	3.51	0.69	.20*	.55**	.28**	(.89)

*Note.* N = 136. \*  $p < .05$ . \*\*  $p < .01$ . Reliabilities estimated by coefficient alpha appear in parentheses along the diagonal. T1 was assessed 6 months after participants entered the organization; T2 was assessed 12 months after T1 (i.e., 18 months after participants entered the organization).



Table 2

*Descriptive Statistics, Intercorrelations and Reliabilities for the Study Variables (Cohort B)*

Variable	M	SD	1	2	3	4
1 Personal initiative (T1)	4.08	0.47	(.83)			
2 LMX (T1)	3.65	0.68	.20*	(.88)		
3 Personal initiative (T2)	4.09	0.47	.73**	.25**	(.84)	
4 LMX (T2)	3.64	0.71	.28**	.73**	.36**	(.89)

*Note.* N = 193. \*  $p < .05$ . \*\*  $p < .01$ . Reliabilities estimated by coefficient alpha appear in parentheses along the diagonal. T1 was assessed 12 months after participants entered the organization; T2 was assessed 6 months after T1 (i.e., 18 months after participants entered the organization).

Table 3

*Test-Retest Reliabilities and T-Test Results of Personal Initiative and LMX over Two Time Periods*

Variable	Cohort A <sup>a</sup>				Cohort B <sup>b</sup>			
	Time 1 Mean (SD)	Time 2 Mean (SD)	$r_{t1t2}$	$t(135)$	Time 1 Mean (SD)	Time 2 Mean (SD)	$r_{t1t2}$	$t(192)$
Personal initiative	4.13 (0.44)	4.12 (0.45)	.68**	0.63	4.08 (0.47)	4.09 (0.47)	.73**	-0.42
LMX	3.72 (0.62)	3.51 (0.69)	.55**	3.88**	3.65 (0.68)	3.64 (0.71)	.73**	0.23

*Note.* N (Cohort A) = 136. N (Cohort B) = 193. \*  $p < .05$ . \*\*  $p < .01$ . <sup>a</sup> Cohort A: T1 was assessed 6 months after participants entered the organization. T2 was assessed 12 months after T1. <sup>b</sup> Cohort B: T1 was assessed 12 months after participants entered the organization. T2 was assessed 6 months after T1.

Table 4

*Hierarchical Regression Analysis Predicting LMX (T2)*

Predictor	Criterion: LMX (T2)		
	Step 1	Step 2	Step 3
	$\beta$	$\beta$	$\beta$
LMX (T1)	.65**	.66**	.64**
Cohort: A (0), B (1) <sup>a</sup>		.13**	.13**
Personal initiative (T1)			.12**
R <sup>2</sup>	.43**	.44**	.46**
$\Delta R^2$		.02**	.01**
F	244.08	129.66	90.97

*Note.* N = 329. \* p<.05. \*\* p<.01. <sup>a</sup> Cohort was dummy coded (A = 0 and B = 1). Cohort A: T1 was assessed 6 months after participants entered the organization. T2 was assessed 12 months after T1. <sup>b</sup> Cohort B: T1 was assessed 12 months after participants entered the organization. T2 was assessed 6 months after T1.

Table 5

*Hierarchical Regression Analysis Predicting Personal Initiative (T2)*

Predictor	Criterion: Personal initiative (T2)		
	Step 1	Step 2	Step 3
	$\beta$	$\beta$	$\beta$
Personal initiative (T1)	.71**	.71**	.69**
Cohort: A (0), B (1) <sup>a</sup>		.02	.02
LMX (T1)			.10*
R <sup>2</sup>	.50**	.50**	.51**
$\Delta R^2$		.00	.01*
F	332.54	165.92	114.71

*Note.* N = 329. \* p<.05. \*\* p<.01. <sup>a</sup> Cohort was dummy coded (A = 0 and B = 1). Cohort A: T1 was assessed 6 months after participants entered the organization. T2 was assessed 12 months after T1. <sup>b</sup> Cohort B: T1 was assessed 12 months after participants entered the organization. T2 was assessed 6 months after T1.