Jens Rowold*

**Instrumental leadership: Extending the transformational-transactional leadership paradigm**

Although the transformational-transactional leadership paradigm is successful in explaining considerable portions of variance in organizationally relevant outcome criteria, recent critiques emphasized that this paradigm might be incomplete. Thus, Antonakis and House (2002) suggested that instrumental leadership might extend the transformational-transactional leadership paradigm and allow for a more detailed and realistic description of the leadership phenomenon. The present study is the first to test — among basic aspects of construct validity — the prognostic validity of instrumental leadership with regard to performance and job satisfaction. Results from three independent empirical studies revealed that four dimensions of instrumental leadership (i.e., Environmental Monitoring, Strategy Formulation, Path-Goal Facilitation, and Outcome Monitoring) can be distinguished. As for concurrent validity, Environmental Monitoring and Path-Goal Facilitation were related to job satisfaction. This result was obtained while controlling for transformational, transactional, and laissez-faire leadership, lending support for the incremental validity of instrumental leadership. With regard to the predictive validity, Environmental Monitoring, Strategy Formulation, and Path-Goal Facilitation (assessed at T1) were related to subsequent objective performance (assessed at T2) in a second study. Finally, in a third study, Path-Goal Facilitation (T1) was associated with subsequent job satisfaction and affective commitment (both T2). Overall, these results demonstrate that potentially, instrumental leadership is a valid extension to the transformational-transactional leadership paradigm.

Key words: transformational leadership, transactional leadership, full range leadership theory, instrumental leadership (JEL: J24, J28, L20, M12)
Over the last two decades, important advancements in the field of leadership research have been made. For example, the theory of transformational and transactional leadership has evolved since the mid-1980s (Bass, 1985). Currently, there is no other leadership paradigm that is more researched than transformational and transactional leadership (Antonakis, Avolio, & Sivasubramaniam, 2003; Avolio & Bass, 2002). While transformational leaders inspire their followers with a positive, value-based vision of the future, transactional leaders rely on clearly defined quid-pro-quo transactions. However, the idea that these two classes of leadership behavior are sufficient for understanding the phenomena of leadership has been challenged (Gregersen, Vincent-Höper, & Nienhaus, 2014; Judge, Piccolo, & Ilies, 2004; Yukl, 1999a, 2009). For example, a vision would be most successful if it was related to internal and external markets, threads, and/or opportunities (Byosiere & Luethge, 2004). Also, today’s leaders should formulate a strategy that explicates how the vision can be accomplished and which resources are needed for this endeavour (Hooijberg, Hunt, Antonakis, Boal, & Lane, 2007; Nadler & Tushman, 1990). However, the theory of transformational leadership neither does include leadership behaviors that relate to getting information about, for example, markets nor strategic behaviors. In sum, for a more comprehensive description of leaders’ behaviors in today’s organizations, several authors suggested extensions to the transformational-transactional leadership paradigm.

In their theoretical work, Antonakis and House (2002) compared various theoretical approaches to transformational, charismatic, and other “new” leadership approaches. They identified several dimensions of leadership behavior that (a) are important for either organizational-level or follower performance and that (b) were missing from the transformational-transactional leadership paradigm. In order to overcome these gaps, they introduced the construct of instrumental leadership. According to Antonakis and House (2002, 2004), instrumental leadership represents the strategic and follower work-facilitation leadership functions that are crucial for organizational and follower performance.

Surprisingly, despite these theoretical notions, there has been only a very limited empirical test of the validity of instrumental leadership (Antonakis & House, 2004). In order to address this shortcoming in the literature, the present paper aims at contributing to leadership research by providing evidence for various aspects of the validity of instrumental leadership. More specifically, three empirical independent studies were conducted to test the factorial, convergent, discriminant, predictive, incremental, and concurrent criterion-oriented validity of instrumental leadership. In sum, the potential additional benefit of instrumental leadership to the currently predominant leadership paradigm (e.g., transformational and transactional leadership) was explored.

Theoretical background

**The transformational-transactional leadership paradigm**

In addition to the abovementioned transformational and transactional leadership styles, laissez-faire (or non-leadership) is often discussed as a third category of leadership style. Often, laissez-faire, transactional, and transformational leadership are described as forming a continuum from highly passive to highly active leadership styles (Antonakis & House, 2002). Several meta-analyses strongly supported the notion that
transformational and transactional leadership are positively related to various indicators of subjective and objective performance, while laissez-faire is negatively related (Dumdum, Lowe, & Avolio, 2002; Judge & Piccolo, 2004; Lowe, Kroeck, & Sivasubramaniam, 1996). In combination, the leadership constructs discussed so far represent one of the current major leadership theories, namely, the Full Range Leadership Theory (FRLT). Impressive research exists that provides a detailed understanding of predictors (Bono & Judge, 2004) and consequences (Rowold & Heinitz, 2007) of transformational and transactional leadership. Several moderators (Avolio, Zhu, Koh, & Bhatia, 2004) and mediators (Pillai, Schriesheim, & Williams, 1999) of the relationship between transformational leadership and outcome criteria have been identified. Also, empirical evidence exists that these leadership behaviors can be trained, helping leaders in organizations to become more effective (Abrell, Rowold, Mönninghoff, & Weibler, 2011; Barling, Weber, & Kelloway, 1996). Nevertheless, the assumption that the FRLT includes all aspects of leadership behaviors has been challenged recently (Graen, Rowold, & Heinitz, 2010; House & Aditya, 1997; Judge et al., 2004). For example, Yukl (Yukl, 1999b) noted that, “although no single theory should be expected to include all aspects of leadership behaviour, [the] use of the label ‘full range leadership theory’ [...] invites critical evaluation of completeness” (p. 37).

**Podsakoff’s conceptualization of transformational and transactional leadership**

Since Bass’ (1985) seminal work, the theory of transformational and transactional leadership has been further developed. Most notably, Podsakoff and colleagues (Podsakoff, MacKenzie, & Bommert, 1996; Podsakoff, MacKenzie, Moorman, & Fetter, 1990) critically revisited prior conceptualizations of transformational leadership. Consequently, they proposed six dimensions of transformational leadership: First, Articulating a Vision was defined as a formulation and communication of a positive vision of the future. Next, transformational leaders are supposed to Provide an Appropriate (Role) Model so that their respective followers can emulate the leader’s effective behavior. Third, transformational leaders are successful in Fostering Group Goals so that their followers have a sense of purpose and are able to contribute to overall group goals. The fourth dimension is High Performance Expectation, since transformational leaders not only formulate a vision but also set high performance goals in order to achieve this vision. Fifth, Individualized Support is offered to followers so that individual needs and abilities are accounted for. Finally, transformational leaders also utilize Intellectual Stimulation by stimulating followers to view old problems from a new perspective in order to generate innovative solutions. This six-dimensional conceptualization of transformational leadership has been utilized in applied research numerous times (DeRue, Wellman, Nahrgang, & Humphrey, 2011). Also, in contrast to the Bass (1985) model, Podsakoff et al.’s (1990) model has received strong support with regard to its construct (i.e., convergent and discriminant) validity (Krüger, Rowold, Borgmann, Staufenbiel, & Heinitz, 2011). Thus, it was used in the present study.

**Shortcomings of transformational and transactional leadership**

While models of transformational and transactional leadership include several important leadership behaviors, the assumption that all relevant leadership behaviors are included has been challenged (Yu, 2009). For example, leaders in today’s organiz-
tions have to think and act strategically. More specifically, leaders have to monitor external and internal markets, competitors, and opportunities (Boal, 2007). Thereafter, and based on the information leaders get from these monitoring activities, they have to formulate strategies for their respective work unit (Yukl, 2009), explicating, among others, resources, milestones and responsibilities. None of these important activities has been included in the transformational-transactional leadership paradigm. This paradigm has also been criticized because it focuses on exceptional leadership behavior (House & Aditya, 1997). What about daily leadership tasks such as helping followers achieve their respective goals (van der Klink, Gielen, & Nauta, 2001)? Also, with regard to transactional leadership, leaders do not only set goals and communicate what can be expected if the goals are met, but they also check from time to time whether their followers achieve these goals and if they need help (Lines, 2004; Judge, Piccolo, & Ilies, 2004). These are examples of leaders’ daily work routines that have not been addressed by theories of transformational and transactional leadership.

As a consequence, and based on a profound and detailed critique of the existing leadership theories, Antonakis and House (2002, 2004) proposed that instrumental leadership addresses an important gap in the field of leadership: Instrumental leadership includes leadership behaviors that are neither part of transformational, transactional, nor laissez-faire leadership.

**Instrumental leadership**

Two main categories of instrumental leadership were defined by Antonakis and House (2002), namely, strategic leadership and follower work facilitation. As for strategic leadership, it “influences organizational performance indirectly through actions and decisions taken by the leader and his or her follower” (Antonakis & House, 2002, p. 22). Two leadership dimensions constitute strategic leadership, namely, Environmental Monitoring and Strategy Formulation and Implementation.

**Environmental monitoring**

It was noted that “one essential leadership function is to help the organization adapt to its environment and acquire resources needed to survive” (Hunt, 1991). However, Yukl (1999b, p. 37) argued that aspects of environmental monitoring were missing from the theory of transformational leadership. Leaders are responsible for scanning internal and external environments (e.g., markets, competitors) in order to (a) identify opportunities for growth and development and (b) provide adequate working conditions (e.g., resources) for their followers. Within the theory of instrumental leadership, this class of leadership behavior is labeled as Environmental Monitoring (cf. Antonakis & House, 2002).

**Strategy formulation and implementation**

In his critique of transformational leadership, Yukl (1999b, p. 37) argued that strategy formulation activities were missing. Consequently, Antonakis and House (2002) argued that after leaders have successfully engaged in Environmental Monitoring, they formulate a strategy for their respective work group and invest time and resources to implement the strategy. This includes designing policies and detailing sub-strategies (e.g., goals). Ideally, the Strategy Formulation is in line with the vision and mission of
the respective organization and takes the overall organizational-level strategy (as one aspect of the internal environment, see above) into account (Hunt, 1991). Nevertheless, Strategy Formulation is distinct from visionary leadership styles such as transformational leadership, as a strategy can be understood as the explication of certain goals and means to achieve a vision.

In an empirical study, Colbert, Kristoff-Brown, Bradley, and Barrick (2008) found that transformational leadership would be related to CEOs’ strategic behaviors and communication. However, these authors viewed CEO’s and top managers’ goal importance congruence as an indicator of strategic leadership and communication. They did not measure strategic leadership per se. The advantage of Antonakis and House’ (2002) conceptualization of Strategy Formulation and Implementation is that (a) this construct is defined explicitly, (b) strategic activities exhibited by all levels of management (e.g., top, middle, and supervisor-level) are included, and (c) items for the assessment of this construct were designed from theory.

The second main category of instrumental leadership is follower work-facilitation, which is proposed to influence follower performance directly (Antonakis & House, 2002, p. 22). Again, two leadership dimensions – Path-Goal Facilitation and Outcome Monitoring – explicate classes of behaviors that define follower work-facilitation.

**Path-goal facilitation**

The first of two follower work facilitation facets is Path-Goal Facilitation. In his path-goal theory of leadership, House (1971) argued that one important aspect of effective leadership is to assist followers with day-to-day problems by removing obstacles, providing resources, and clarifying how followers can achieve their respective work-related goals. In other words, leaders are proactive in the sense that they help followers to understand the path towards the goal. A leader's expertise is an important prerequisite for Path-Goal Facilitation. It should be noted that this class of leadership behaviors is very direct (‘hands-on’-support) and that Path-Goal Facilitation (focus on cognitive and practical support) is distinct from Individualized Support (focus on emotional support), a facet of transformational leadership. Also, as no rewards or punishments are included in Path-Goal-Facilitation, this instrumental leadership construct is not related to transactional leadership.

**Outcome monitoring**

Yukl (1999a) suggested that “one obvious omission [from transformational leadership] is task-oriented behavior [which is] relevant for effective leadership (e.g., [...] monitoring operations in a non-obtrusive way)”(p. 291). Thus, Antonakis and House (2002) defined Outcome Monitoring as providing followers with timely, instrumental feedback that is exclusively (a) relevant for the current task (e.g., 'How can mistakes be avoided?') and (b) constructive. Thus, Outcome Monitoring is given during the actual work process and not after the respective goal has been attained (as in the case of, e.g., Contingent Reward). Definitions for the four dimensions of instrumental leadership were summarized in Table 1.
Table 1: Definitions of instrumental leadership dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition and Sample Item&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic Leadership</strong></td>
<td></td>
</tr>
<tr>
<td>a) Environmental Monitoring</td>
<td>Scanning the internal and external environment for opportunities for growth and development (e.g., ‘... capitalizes on opportunities presented by the external environment’)</td>
</tr>
<tr>
<td>b) Strategy Formulation and</td>
<td>Based on an overall vision for the future, a strategy which includes specific, attainable goals and policies is developed and implemented (e.g., ‘... develops specific policies to support his/her vision’)</td>
</tr>
<tr>
<td>Implementation</td>
<td></td>
</tr>
<tr>
<td><strong>Follower Work Facilitation</strong></td>
<td></td>
</tr>
<tr>
<td>c) Path-Goal Facilitation</td>
<td>Obstacles which prevent followers from achieving their goals are removed; resources for goal attainment are provided (e.g., ‘... ensures that I have sufficient resources to reach my goals’)</td>
</tr>
<tr>
<td>d) Outcome Monitoring</td>
<td>Providing followers with feedback that is instrumental for goal attainment (e.g., ‘... provides me with information concerning how mistakes can be avoided’)</td>
</tr>
</tbody>
</table>

Note. <sup>a</sup> For each item, the item stem is ‘My supervisor ...’. For each of the instrumental leadership scales, Antonakis and House’s (2004) four items were utilized.

**Uniqueness of instrumental leadership**

Based on the theoretical work of Antonakis and House (2002), it might be assumed that several possible links between transformational and instrumental leadership potentially exist. For example, if leaders formulate a vision, they consequently can design a strategy to achieve this vision (Strategy Formulation). Also, they can scan the environment for resources to achieve the vision and to provide their followers with necessary resources (Environmental Monitoring). Also, transactional leadership is compatible to instrumental leadership. That is, after leaders have engaged in instrumental leadership such as Strategy Formulation, they discuss this strategy with their followers and consequently, define goals and assign these goals to certain followers in a transactional manner. Also, after transactional goals have been set, Outcome Monitoring can be utilized in order to give appropriate feedback regarding goal achievement. These examples highlight possible positive relationships between transformational, instrumental, and transactional leadership. However, while it would be an ideal situation if a certain leader invested time into all of these three leadership behaviors, today’s leaders have typically very little time to address all leadership tasks. Thus, in practice, leaders will typically focus on one (or two) of the three leadership behaviors. Thus, it should be noted that theoretically, leaders would have some success if they relied solely on instrumental leadership. For example, it might be speculated that leaders successfully engage in instrumental leadership behaviors without having a vision and without setting (transactional) goals: As was described above, all four instrumental leadership behaviors are important in today’s organizations and thus, contribute to effectiveness. With this regard, instrumental leadership is potentially a unique and valid approach to leadership, independent of transformational and transactional leadership.

**Prior empirical research on instrumental leadership**

Potentially, and viewed from leadership theory, instrumental leadership represents a valuable extension to the leadership literature. However, from an empirical perspec-
tive, the question of how valid the construct of instrumental leadership would be remains. So far, only one empirical – but unpublished – study focused on instrumental leadership: Antonakis and House (2004) utilized a sample of leaders’ followers and peers to test the factorial validity of their newly developed instrumental leadership scales. The results were in favour of the four-factorial model. Based on the same data, Antonakis and House (2004) also found preliminary evidence for the assumption that instrumental leadership is positively related to both transformational and transactional leadership. Finally, it was hypothesized – and confirmed – that instrumental leadership explains variance in followers’ self-rated effectiveness, beyond transformational and transactional leadership (incremental validity). With regard to this study, several limitations exist: First, the study relied on one single data set, which limits the external validity of results. Second, the data set included a mixture of both followers’ and peers’ ratings of leadership behavior, although these two rating sources are typically unrelated ($r = .22$; s. meta-analyses from Conway & Huffcutt, 1997), and thus, should be analysed in isolation from each other. Third, their data might be potentially biased because it relied exclusively on followers’ (and peers) perception of both leaders’ behavior and followers’ (and peers) effectiveness (i.e., single-source bias). Fourth, another potential bias in the data was that all data were collected at the same time, allowing for inflation of the relationships between instrumental leadership and followers’ self-rated effectiveness.

In sum, although Antonakis and House (2004) provided preliminary evidence for some aspects of validity of instrumental, their data set was limited by several aspects (i.e. common-source bias, common point-in-time bias, one data set, follower and peer data). Also, their study was limited since a test for predictive validity has not been conducted. Finally, their study did not include objective criteria of leadership success, limiting the insight into concurrent validity. To conclude, additional research is necessary before leadership researchers can have confidence in the idea that instrumental leadership is a valid extension of the transformational – transactional leadership theory.

**Overview of study goals**

As a consequence from the limitations of prior research (s. above), it would be important to gain additional and more comprehensive empirical insights into the proposed construct of instrumental leadership. More specifically, several study goals were determined in order to achieve this objective:

The first study goal was to establish construct validity. This fundamental aspect of construct validity determines how many dimensions of instrumental leadership can be distinguished. In addition to factorial validity, discriminant and convergent validity should be tested. These validity aspects shed light on questions about the relationships between instrumental leadership and other, hitherto well-established leadership constructs (e.g., transformational leadership).

The second study goal was to answer the question of whether instrumental leadership explains variance in outcome criteria such as job performance, over and above hitherto established leadership styles such as transformational leadership. As was noted above, considerable evidence exists that supports the notion that leadership re-
search identified transformational and transactional leadership as effective, behavior-oriented leadership styles. From a critical perspective, it might be asked whether a third leadership construct (i.e., instrumental leadership) would be needed in order to understand and describe effective leadership. The third study goal addressed this critical question by aiming at demonstrating that instrumental leadership is effective, over and above transformational and transactional leadership. In leadership research, the question of whether transformational leadership is more effective than transactional leadership has been affirmed time and again (augmentation effect of transformational leadership, Judge & Piccolo, 2004). Also, this aspect of validity is often referred to as incremental validity (Berry, Carpenter, & Barratt, 2011). Although the first and second study goals have been researched by Antonakis and House (2004), it would be important to replicate their results based on independent data sets that include only followers’ ratings before researchers can have confidence in the construct of instrumental validity.

The third study goal was to go beyond methodological limitations of prior empirical studies. As was noted by leadership experts, the “typical leadership study” (Conger & Hunt, 1999) is limited by several methodological weaknesses (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). For example, typically subjective indicators of leadership effectiveness such as followers’ job satisfaction are utilized in leadership research. Likewise, in Antonakis and House’s (2004) study, only subjective indicators were used. In order to address this shortcoming, an effort was made in the present study to include both subjective (e.g., job satisfaction) and objective indicators of effective leadership in the empirical studies. Another limitation of most leadership research is the fact that cross-sectional data is assessed (e.g., Alban-Metcalfe & Alimo-Metcalfe, 2000; Antonakis & House, 2004). However, this prevents determining causal relationships between leadership constructs and indicators of effective leadership. As a consequence, and in contrast to Antonakis and House’s (2004) study, the present studies aimed at collecting data at two points-in-time, (i.e., T1: leadership, T2: leadership effectiveness) for a more causal interpretation of data. This data assessment strategy is necessary for establishing the predictive validity of instrumental leadership.

Study 1

The goal of Study 1 was to establish evidence for the factorial validity of the instrumental leadership scales. More specifically, it was tested whether the theoretical four-dimensional structure proposed by Antonakis and House (2002) would describe the empirical factor structure best. Statistically speaking, it is proposed that a 4-factor model fits the data significantly better than other models with three factors or one factor (H1).

In order to address the question of discriminant validity, it was explored whether any of the four dimensions of instrumental leadership would be identical to any other dimension. We proposed full discriminant validity, thus, that no dimension of instrumental leadership would correlate perfectly with another instrumental leadership dimension (H2).

The transformational-transactional leadership paradigm towers the leadership research landscape. Thus, these leadership constructs were included in Study 1 in order
to describe where instrumental leadership would be located in the overall nomological
network of leadership constructs. With regard to transformational (H3) and transac-
tional (H4) leadership, it was expected that instrumental leadership would show a
convergent validity. This is because instrumental leadership can be viewed as a link be-
tween transformational and transactional leadership behavior: After developing a posi-
tive, value-based vision (i.e., transformational leadership), leaders utilize instrumental
leadership behavior (e.g., Strategy Formulation and Implementation, cf. Table 1), be-
fore they break the overall goals down into specific goals, resp. transactions (i.e.,
transactional leadership). With regard to laissez-faire, it was expected that this highly
passive leadership style would be negatively related to the active leadership style of in-
strumental leadership (convergent validity, H5).

Study 1 was also designed to yield insights into incremental criterion-oriented va-
lidity. More specifically, it was tested whether instrumental leadership accounts for
variance in job satisfaction, over and above transformational and transactional leader-
ship and laissez-faire (H6). Job satisfaction represents an important outcome variable
of effective leadership. From an organizational behavior perspective, leaders in organ-
izations are required to ensure high levels of followers’ job satisfaction. Recently, me-
ta-analytic evidence emerged that demonstrated a positive relationship between the
constructs of job satisfaction and job performance (Judge, Thoresen, Bono, & Patton,
2001). Also, evidence from panel studies suggested a causal link between job satisfac-
tion and job performance (Riketta, 2008). Thus, it might be assumed that job satisfac-
tion leads to job performance.

It was expected that instrumental leadership would be positively related to job
satisfaction, for the following reasons: First, instrumental leadership includes Envi-
ronmental Monitoring where leaders scan the environment for adequate resources.
These resources, in turn, are provided to the respective followers and thus, yield higher
levels of job satisfaction. Second, followers who can understand the strategy that
the respective leader communicates feel safer and thus, are more satisfied with their
jobs. Third, instrumental leaders explain the path towards goal achievement and facili-
tate followers in the process of achieving goals. From the followers’ perspective, this
supportive behavior helps them to adequately do their jobs and thus, is likely to foster
job satisfaction. Finally, the feedback component of Outcome Monitoring provides
followers with important information and thus, increases job performance.

In order to provide a critical test regarding the relationship between instrumental
leadership and job satisfaction, several controls were included in the analyses. First, a
series of followers’ demographic characteristics was chosen because positive relation-
ships between these characteristics and job performance were proposed. The follow-
ers’ age and tenure, both positively intercorrelated, might be related to followers’ job
experience. Thus, older employees or employees with a longer tenure might have a
higher job performance in comparison to their younger or inexperienced colleagues.
Next, because females tend to underestimate their abilities (Furnham, 2001), the fol-
 lowers’ gender was included as a control. Research consistently has demonstrated pos-
itive relationships between measures of general mental abilities and job performance
(Schmidt & Hunter, 1998). Consequently, the followers’ level of education, one possi-
ble proxy for mental abilities, was included as a control. Also, the size of the organiza-
Jens Rowold: Instrumental leadership

Amount of employees; small, medium, and large organizations was included as a control (House & Aditya, 1997).

Method

Samples and procedures

Data for Study 1 were collected from a German convenience sample. A management newspaper article was written which discussed recent developments in the field of leadership. This article was published in two independent German online newspapers. Within this article, a link to a website was presented so that volunteers could participate in an online survey. This survey included several leadership scales (i.e., transformational, transactional, laissez-faire, and instrumental leadership) and job satisfaction. Participation included the possibility to take part in a lottery. A total sample size of N = 435 resulted. The participants' mean age was 36.80 years (SD = 10.40); 70.4% were male, 29.6% were female. Altogether, 13.0% had a junior high school, 26.1% a secondary high school, and 60.9% a university diploma. Participants indicated a mean tenure of 8 years (SD = 7.90). Altogether, 20.2% of the organizations had less than 50, 21.4% had between 50 and 250, and 58.4% had more than 250 employees. All constructs were assessed at the same time.

Measures

Both transactional and transformational leadership were assessed using a German translation (Heinitz & Rowold, 2007) of the Transformational Leadership Inventory (TLI; see Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Considerable evidence exists that demonstrated the construct (i.e., factorial, convergent, and discriminant) validity of the TLI (Krüger, Rowold, Borgmann, Staufenbiel, & Heinitz, 2011). Four items were implemented to assess transactional (sample item: “…provides me with positive feedback if I perform well”) and twenty-two items for transformational (sample item: “…has inspiring plans for the future”) leadership.

For the assessment of laissez-faire, Rowold’s (2011) four-item scale was utilized (sample item: “…is absent when needed for help or decisions”).

Following established guidelines for test translation and adaptation (e.g., Hambleton, 2001, www.intestcom.org), the items for the assessment of instrumental leadership (Antonakis & House, 2004) were first translated from English to German by a professional. Next, they were translated back by an independent expert (each were experts in organizational behavior). The two English versions were virtually identical. Consequently, the German version was utilized in this study. For each of the four dimensions of instrumental leadership, four items were implemented; sample items are provided in Table 1. For each of these leadership items, participants rated the frequency of observed supervisor’s behavior on a 5-point rating scale (1 = never, 5 = always).

As for job satisfaction, seven items from Neuberger and Allerbeck’s (1978) scale were utilized in the present study (e.g., “I am satisfied with my supervisor”). As for the indicators for the assessment of job satisfaction, participants rated their agreement on a 5-point rating scale (1 = completely disagree, 5 = completely agree).
Results

In order to test the factorial validity of the instrumental leadership scales, confirmatory factor analyses (CFA) were performed. Several models which could be justified from theory were tested in order to demonstrate adequate factorial validity. First, it was tested whether the 4-factor model (target model) revealed a significantly better fit to the data than either (a) a 0-factor (i.e., baseline) or (b) a 1-factor model. As can be seen from Table 2, the 4-factor model fitted the data well, i.e., both CFI and TLI > .90, RMSEA ≤ .08, SRMR ≤ .07 (Bollen & Long, 1993). Also, the Δχ²-difference-test indicated that the 4-factor model fitted the data significantly better than both the 0 – and the 1-factor model. These results support H1.

Table 2: Results of the confirmatory factor analyses (Study 1, N = 435)

<table>
<thead>
<tr>
<th>Model</th>
<th>Multi-Group Confirmatory Factor Analyses</th>
<th>df</th>
<th>χ²</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>Δχ²</th>
<th>Δdf</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-Factor</td>
<td></td>
<td>120</td>
<td>5847.56</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5463.87</td>
<td>22</td>
</tr>
<tr>
<td>1-Factor</td>
<td></td>
<td>104</td>
<td>1075.43</td>
<td>0.83</td>
<td>0.80</td>
<td>0.15</td>
<td>0.06</td>
<td>691.74</td>
<td>6</td>
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<tr>
<td>3-Factor a</td>
<td></td>
<td>101</td>
<td>554.53</td>
<td>0.92</td>
<td>0.91</td>
<td>0.10</td>
<td>0.05</td>
<td>170.84</td>
<td>3</td>
</tr>
<tr>
<td>3-Factor b</td>
<td></td>
<td>101</td>
<td>508.77</td>
<td>0.93</td>
<td>0.92</td>
<td>0.10</td>
<td>0.05</td>
<td>125.08</td>
<td>3</td>
</tr>
<tr>
<td>3-Factor c</td>
<td></td>
<td>101</td>
<td>605.42</td>
<td>0.91</td>
<td>0.90</td>
<td>0.11</td>
<td>0.07</td>
<td>221.73</td>
<td>3</td>
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<tr>
<td>3-Factor d</td>
<td></td>
<td>101</td>
<td>554.53</td>
<td>0.92</td>
<td>0.91</td>
<td>0.10</td>
<td>0.05</td>
<td>170.84</td>
<td>3</td>
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<tr>
<td>3-Factor e</td>
<td></td>
<td>101</td>
<td>701.38</td>
<td>0.90</td>
<td>0.88</td>
<td>0.12</td>
<td>0.05</td>
<td>317.69</td>
<td>3</td>
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<tr>
<td>3-Factor f</td>
<td></td>
<td>101</td>
<td>586.07</td>
<td>0.92</td>
<td>0.90</td>
<td>0.11</td>
<td>0.05</td>
<td>202.38</td>
<td>3</td>
</tr>
<tr>
<td>4-Factor</td>
<td></td>
<td>98</td>
<td>383.69</td>
<td>0.95</td>
<td>0.94</td>
<td>0.08</td>
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</tr>
</tbody>
</table>

Note. CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Δχ² was computed by subtracting the χ² of the 4-Factor Model from the χ² of the respective Model.

***p < .001.

Second, another series of CFAs was performed to gain support for the discriminant validity of the four instrumental leadership scales. Since discriminant validity implies that no single construct correlates perfectly with any other construct, it was tested whether any of the four instrumental leadership scales would be related with any other instrumental leadership scale (i.e., r = 1.0). Consequently, six CFAs (i.e., model 3a-f) were modelled so that within one respective model, two of the four instrumental leadership dimensions would correlate perfectly. Since in each of these six models two of the instrumental leadership constructs would correlate perfectly, they were each three-factor models, respectively. Consequently, it was tested whether the 4-factor model revealed a significantly better fit to the data than any of the possible 3-factor models. This strategy is in line with the methodological and scale validation literature (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). As can be seen from Table 2, and in support of H2, the 4-factor model revealed a closer fit to the data than
The internal consistency estimates (i.e., Cronbach’s Alpha) was calculated for the four instrumental leadership dimensions (cf. Table 3). It is apparent that the respective Alphas were good ($>.80 < .94$). Table 3 also summarizes descriptive statistics and instrumental leadership scale intercorrelations from Study 1.

Table 3: Descriptive statistics and intercorrelations (Study 1, $N = 435$)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Transformational Leadership</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>1. Articulating a Vision</td>
<td>2.67</td>
<td>1.01</td>
<td>.69</td>
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<td></td>
</tr>
<tr>
<td>2. Providing appr. Model</td>
<td>2.56</td>
<td>1.12</td>
<td>.78**</td>
<td>.85</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Fostering Group Goals</td>
<td>2.75</td>
<td>1.10</td>
<td>.75**</td>
<td>.76**</td>
<td>.90</td>
<td></td>
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<tr>
<td>4. High Perf. Expect.</td>
<td>3.61</td>
<td>0.66</td>
<td>.61**</td>
<td>.62**</td>
<td>.14**</td>
<td>.72</td>
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</tr>
<tr>
<td>5. Individualized Support</td>
<td>2.79</td>
<td>1.20</td>
<td>.57**</td>
<td>.73**</td>
<td>.72**</td>
<td>.11**</td>
<td>.96</td>
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<tr>
<td>6. Intellectual Stimulation</td>
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<td>1.05</td>
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<td>.81**</td>
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<td>.50**</td>
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</tr>
<tr>
<td>B) Transactional Leadership &amp; Laissez-Faire</td>
<td></td>
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</tr>
<tr>
<td>7. Contingent Reward</td>
<td>2.62</td>
<td>1.22</td>
<td>.64**</td>
<td>.70**</td>
<td>.72**</td>
<td>.01**</td>
<td>.77**</td>
<td>.58**</td>
<td>.91**</td>
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<tr>
<td>8. Laissez-Faire</td>
<td>2.72</td>
<td>1.15</td>
<td>.66**</td>
<td>.67**</td>
<td>.57**</td>
<td>.14**</td>
<td>.53**</td>
<td>.50**</td>
<td>.56**</td>
<td>.88</td>
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<td>C) Instrumental Leadership</td>
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</tr>
<tr>
<td>9. Environ. Monitoring</td>
<td>3.44</td>
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<td>.68**</td>
<td>.67**</td>
<td>.84**</td>
<td>.06**</td>
<td>.96**</td>
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<td>.80</td>
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<tr>
<td>10. Strategy Formulation</td>
<td>2.99</td>
<td>1.09</td>
<td>.76**</td>
<td>.67**</td>
<td>.68**</td>
<td>.31**</td>
<td>.60**</td>
<td>.61**</td>
<td>.58**</td>
<td>.60**</td>
<td>.89</td>
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<td></td>
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</tr>
<tr>
<td>11. Path-Goal Facilitation</td>
<td>2.65</td>
<td>1.12</td>
<td>.73**</td>
<td>.80**</td>
<td>.75**</td>
<td>.11**</td>
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<td>.71**</td>
<td>.62**</td>
<td>.70**</td>
<td>.72**</td>
<td>.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Outcome Monitoring</td>
<td>2.74</td>
<td>1.22</td>
<td>.69**</td>
<td>.57**</td>
<td>.75**</td>
<td>.11**</td>
<td>.68**</td>
<td>.69**</td>
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<td>.69**</td>
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<td>.94</td>
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</tr>
<tr>
<td>13. Job Satisfaction</td>
<td>3.26</td>
<td>0.79</td>
<td>.64**</td>
<td>.67**</td>
<td>.85**</td>
<td>.12**</td>
<td>.50**</td>
<td>.59**</td>
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<td>.50**</td>
<td>.55**</td>
<td>.70**</td>
<td>.60**</td>
<td>.60**</td>
</tr>
</tbody>
</table>

Note: Internal consistency estimates are represented along the diagonal.  
$p < .05, \quad p < .01$.  

Jens Rowold: Instrumental Leadership
In order to test the hypotheses regarding the convergent validity (H3 – H5), correlations of study constructs were computed (cf. Table 3). As expected, instrumental leadership was positively related to transformational (H3) and transactional leadership (H4). As expected, laissez-faire was negatively related to instrumental leadership, yielding support for H5. In sum, instrumental leadership showed convergent validity to these three leadership styles.

Finally, in order to test the incremental validity of instrumental leadership, a stepwise regression was performed. First, control variables were entered, followed by transformational leadership and, subsequently, transactional and laissez-faire leadership (see Table 4). In the last step of the regression, the four instrumental leadership scales were entered. In line with Hypothesis 6, it was found that instrumental leadership explained incremental variance in job satisfaction, over and above the other leadership constructs. More specifically, both Environmental Monitoring and Path-Goal Facilitation were significantly related to job satisfaction, over and above transformational, transactional, and laissez-faire leadership.

Table 4: Results of stepwise regression analyses (standardized betas) predicting job satisfaction (Study I; N = 435)

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1: Controls</strong></td>
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<tr>
<td>Articulating a Vision</td>
<td>.09</td>
<td>.07</td>
<td>.05</td>
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<tr>
<td>Providing appr. Model</td>
<td>.26**</td>
<td>.25**</td>
<td>.17*</td>
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<tr>
<td>Fostering Group Goals</td>
<td>.28**</td>
<td>.25**</td>
<td>.25**</td>
<td></td>
</tr>
<tr>
<td>High Perf. Expect.</td>
<td>-.01</td>
<td>-.01</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Individualized Support</td>
<td>.05</td>
<td>.01</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>.19**</td>
<td>.18**</td>
<td>.15**</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2: Transformational Leadership Scales</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Contingent Reward</td>
<td></td>
<td>.05</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Laissez-Faire</td>
<td>-.08</td>
<td>-.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3 Transactional Leadership &amp; Laissez-Faire</strong></td>
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<tr>
<td>Contingent Reward</td>
<td></td>
<td>.05</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Laissez-Faire</td>
<td>-.08</td>
<td>-.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 4: Instrumental Leadership Scales</strong></td>
<td></td>
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</tr>
<tr>
<td>Environmental Monitoring</td>
<td></td>
<td>.12*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy Formulation</td>
<td></td>
<td>-.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Path-Goal Facilitation</td>
<td></td>
<td>.32**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome Monitoring</td>
<td></td>
<td>-.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.01</td>
<td>.55</td>
<td>.55</td>
<td>.58</td>
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<tr>
<td>$\Delta R^2$</td>
<td>.01</td>
<td>.53**</td>
<td>.01</td>
<td>.03*</td>
</tr>
</tbody>
</table>

Note. a) For the sake of brevity, results for control variables have been omitted from this table.

*p < .05, **p < .01.
Discussion

These results from the analyses regarding factorial and discriminant validity yielded support for a four-dimensional definition of instrumental leadership. Also, these dimensions of Environmental Monitoring, Strategy Formulation, Path-Goal Facilitation, and Outcome Monitoring could be assessed reliably. Finally, and as expected from theory, the four instrumental leadership dimensions were positively related to both transformational and transactional leadership, while being negatively related to laissez-faire. Most importantly, and despite the convergent validity between these constructs, instrumental leadership explained incremental portions of variance in job satisfaction, over and above transformational, transactional, and laissez-faire leadership.

In general, these results were in line with prior research (Antonakis & House, 2004). However, while Antonakis and House (2002) utilized subjective effectiveness as an indicator of leadership effectiveness, this study included job satisfaction as an organizational relevant construct.

Study 2

The second study was designed to overcome some limitations of the first study and prior research (Antonakis & House, 2004). That is, it was tested whether instrumental leadership has an impact on the “bottom line”. In a sample of technicians working in a German industry, an objective criterion for job performance was chosen as an indicator for effective leadership. Instrumental leadership (T1) was assessed prior to objective job performance (T2), allowing for a test of predictive validity.

Instrumental leaders translate their strategic vision into specific, attainable goals (i.e., Strategy Formulation). Also, they motivate followers by helping them to attain these specific goals (e.g., Path-Goal Facilitation). These highly active leadership behaviors ensure high involvement in the work processes on the followers’ side. Overall, followers are motivated and contribute to the leaders’ goals by performing well. Thus, it was expected that instrumental leadership was positively related to subsequent objective performance (H1).

Method

Samples and procedure

We gathered data from a printing machine industry in Germany. Main products included large and middle-sized, full-automatic printing devices utilized in publishing houses. The personnel department was contacted and agreed to participate. At T1, we gathered leadership style data (follower perspective) from \( N = 29 \) teams and their \( N = 163 \) team members. Participation was voluntary and anonymity was assured. On average, the followers were 38.4 years old. Ninety-two percent were male. Altogether, 69.6% had a junior high school, 14.8% a secondary high school, and 15.7% a university diploma. The average tenure was 10.3 years.

Measures

Instrumental leadership items from Study 1 were also utilized in Study 2. Objective performance data were collected at T2 (i.e., one year after T1). The tasks of the technicians (i.e., followers) who worked in the 29 teams were to help customers with the
newly bought printing machines, install the hard – and software (e.g., for network printing services and software updates) and to help customers with errors (e.g., breakdown) of the sold products, both on-site and off-site (via software tools).

Ideally, one product was sold to a customer, the hard – and software was installed by the technician, and the product never needed any services thereafter, except for minor software updates which could be handled via internet (i.e., from the technician’s office). From time to time, however, some products were not installed correctly by the technician and thus, the technician had to return to the customer and fix the respective problem. This would imply both direct (e.g., travelling) and indirect (e.g., working time) costs. Thus, the more often the technician had to return to the customer, the worse his job performance was (from the leader’s perspective). As a standard, each team had a statistics about how often which technician returned to customers. This statistics was available at the team level, was standardized, and utilized as the objective performance indicator for the purpose of the present study. Each leader was in charge of one of the \( N = 29 \) teams, respectively. Between one and 55 followers rated one leader (average: 5.9).

Before we aggregated the data at the leader (i.e., team) level, we ensured that leadership ratings had appropriate levels of interrater agreement. Following the methodological literature, three indices of interrater-agreement were calculated: within-group agreement \( r_{wg} \) (cut-off values > .70 James, Demaree, & Wolf, 1984), average deviation (AD; cut-off < .80 Burke & Dunlap, 2002), and intra-class-correlation (ICC (1) and ICC (2), cf. Shrout & Fleiss, 1979)). For each of the four instrumental leadership scales, the respective interrater agreement indices met the criteria for adequate levels of interrater agreement (see Table 5). The exception was the \( r_{wg} \) – value for Outcome Monitoring, which was on the limit. Thus, data were aggregated at the team level.

Table 5: Descriptive statistics and intercorrelations at the team level (Study 2, \( N = 29 \))

<table>
<thead>
<tr>
<th>Scale</th>
<th>M</th>
<th>SD</th>
<th>ICC (1)</th>
<th>ICC (2)</th>
<th>( r_{wg} )</th>
<th>AD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Environmental Monitoring (T1)</td>
<td>3.85</td>
<td>0.66</td>
<td>.30</td>
<td>.67</td>
<td>.78</td>
<td>.54</td>
<td>.87</td>
<td></td>
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</tr>
<tr>
<td>2. Strategy Formulation (T1)</td>
<td>3.52</td>
<td>0.75</td>
<td>.34</td>
<td>.71</td>
<td>.72</td>
<td>.60</td>
<td>.86</td>
<td>.97</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Path-Goal Facilitation (T1)</td>
<td>3.51</td>
<td>0.69</td>
<td>.34</td>
<td>.72</td>
<td>.74</td>
<td>.55</td>
<td>.87</td>
<td>.86</td>
<td>.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Outcome Monitoring (T1)</td>
<td>3.72</td>
<td>0.71</td>
<td>.34</td>
<td>.63</td>
<td>.70</td>
<td>.55</td>
<td>.77</td>
<td>.77</td>
<td>.83</td>
<td>.97</td>
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<tr>
<td>5. Objective Performance (T2)</td>
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<td>1.00</td>
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<td></td>
<td>.43</td>
<td>.55</td>
<td>.38</td>
<td>.10</td>
<td></td>
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</tr>
</tbody>
</table>

Note. Values for internal consistency estimates (i.e., Cronbach’s Alpha) are presented along the diagonal. *\( p < .05 \). **\( p < .01 \).
Results
Correlations between the key study constructs were computed (s. Table 5). Three (i.e., Environmental Monitoring, Strategy Formulation, and Path-Goal Facilitation) of the four instrumental leadership scales measured at T1 were significantly related to objective performance (measured at T2) at the team level. Overall, H1 was largely supported.

Discussion
Results from Study 2 further support the reliability of the instrumental leadership scales. Also, for the first time, it could be demonstrated that followers from one team agree on their leader’s level of instrumental leadership. Most importantly, Study 2 provided support for the predictive validity of instrumental leadership: Environmental Monitoring, Strategy Formulation, and Path-Goal Facilitation were significantly related to subsequent objective job performance at the team level. The sample size was limited and prevented advanced statistical analyses such as path modeling. In contrast to prior research (Antonakis & House, 2002), Study 2 was a first attempt to explore the relationship between instrumental leadership and subsequent objective performance. The results revealed an interesting first insight into the potential of instrumental leaders to impact the “bottom line”.

Study 3
While Study 2 provided first evidence for the predictive validity of instrumental leadership, a third study was designed so that further support for this important aspect of validity could be obtained. More specifically, it was tested whether instrumental leadership (T1) would predict subsequent levels of job satisfaction and affective commitment (both T2). Thus, Study 3 went beyond Study 1 (and prior research; s. Antonakis & House, 2004) by applying a more rigorous study design. Also, a second indicator of leadership effectiveness, affective commitment, was included. A recent meta-analysis (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002) supported the notion that affective commitment is associated with organizationally relevant phenomena such as work attendance, turnover, and work motivation.

Given the rationales provided in Study 1, it was expected that instrumental leadership predicts job satisfaction (H1) and affective commitment (H2). The same control variables that were utilized in Study 2 were also applied in Study 3.

Method
Samples and procedure
Data for Study 3 were collected from a German convenience sample. Research assistants contacted potential participants working in for-profit organizations via social media. Each participant took part in a lottery. The study goals were communicated. It was ensured that the email-address would only be used to (a) match the first with the second survey, respectively, and (b) to inform the winners of the lottery.

Twenty days after the first survey (T1; including study goals, control variables, items for the assessment of instrumental leadership, and the email-address) was completed, the second survey (T2; job satisfaction and affective commitment) was sent out
to participants. This procedure yielded a sample size of $N = 149$ (with complete data for both surveys). The average age was 28.5 years ($SD = 8.1$) while the average tenure was 4.9 years ($SD = 5.5$). Two-third of the participants (66.4%) were female. Altogether, 5.4% of the participants had a junior high school, 22.8% a secondary high school, 32.6% a university diploma and 39.6% a vocational training. More than a third of the participants (38.3%) worked in organizations with less than 50 employees, while 26.8% had between 50 and 250, and 33.6% had more than 250 employees.

**Measures**

Both instrumental leadership and job satisfaction items from Study 1 were also utilized in Study 3. With regard to affective commitment, we utilized a German validated version (Furnham, 2001) of Allan and Meyer’s (Allen & Meyer, 1990) survey.

**Results**

Table 6 summarizes the descriptive statistics and intercorrelations of the key study constructs.

**Table 6: Descriptive statistics and intercorrelations for predictive validity of instrumental leadership scales (Study 3, $N = 149$)**

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>1. Environmental Monitoring (T1)</td>
<td>3.57</td>
<td>0.86</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Strategy Formulation (T1)</td>
<td>3.33</td>
<td>0.86</td>
<td>.75*</td>
<td>.82</td>
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<td></td>
</tr>
<tr>
<td>3. Path-Goal Facilitation (T1)</td>
<td>3.29</td>
<td>0.86</td>
<td>.74**</td>
<td>.72**</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td>4. Outcome Monitoring (T1)</td>
<td>3.53</td>
<td>0.87</td>
<td>.75**</td>
<td>.75**</td>
<td>.80*</td>
<td>.88</td>
</tr>
<tr>
<td>5. Affective Commitment (T2)</td>
<td>3.24</td>
<td>0.76</td>
<td>.20</td>
<td>.25**</td>
<td>.36**</td>
<td>.25*</td>
</tr>
<tr>
<td>6. Job Satisfaction (T2)</td>
<td>3.60</td>
<td>0.68</td>
<td>.50**</td>
<td>.49**</td>
<td>.61**</td>
<td>.47**</td>
</tr>
</tbody>
</table>

Note. Values for internal consistency estimates (i.e., Cronbach’s Alpha) are presented along the diagonal. $^* p < .05$. $^** p < .01$.

The hypotheses were tested by implementing stepwise regression analysis (see Table 7). The control variables were entered first, followed by the four instrumental leadership scales. Only one instrumental leadership scale was significantly related to subsequent job satisfaction and commitment, namely, Path-Goal Facilitation. Thus, H1 could only be partially accepted.
Table 7: Results of stepwise regression analyses (standardized betas) predicting affective commitment and job satisfaction (Study 3; N = 149)

<table>
<thead>
<tr>
<th></th>
<th>Affective Commitment (T2)</th>
<th>Job Satisfaction (T2)</th>
</tr>
</thead>
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<td></td>
<td>Step 1</td>
<td>Step 2</td>
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<td>Step 1: Controlsa)</td>
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<tr>
<td>Step 2: Instrumental Leadership Scales</td>
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<tr>
<td>Environ. Monitoring (T1)</td>
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<td>.10</td>
</tr>
<tr>
<td>Strategy Formulation (T1)</td>
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<td>.07</td>
</tr>
<tr>
<td>Path-Goal Facilitation (T1)</td>
<td>.50&quot;</td>
<td>.57&quot;</td>
</tr>
<tr>
<td>Outcome Monitoring (T1)</td>
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<td>-.11</td>
</tr>
<tr>
<td>R²</td>
<td>.11</td>
<td>.30</td>
</tr>
<tr>
<td>ΔR²</td>
<td>.11&quot;</td>
<td>.19&quot;</td>
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Note. a) For the sake of brevity, results for control variables have been omitted from this table. *p < .05. **p < .01.

Discussion

Study 3 provided further support for the predictive validity of one instrumental leadership dimension: Path-Goal Facilitation predicted subsequent levels of both job satisfaction and affective commitment. Thus, in contrast to other facets of instrumental leadership, Path-Goal Facilitation is a useful strategy to foster followers’ satisfaction and commitment. As in the case of Study 2, Study 3 went beyond prior research (i.e., Antonakis & House, 2004) by utilizing a study design which allows for conclusions regarding predictive validity.

General discussion

The results of three independent empirical studies contribute to the leadership literature by providing considerable evidence for the construct validity and utility of instrumental leadership. These studies went beyond prior research on instrumental leadership (Antonakis & House, 2004) by a) utilizing several independent data sets with b) assessment of instrumental leadership exclusively from the followers’ perspective, c) collecting data at several points-in-time and d) including both objective and subjective criteria of instrumental leadership.

The construct of instrumental leadership has four theoretical dimensions (i.e., Environmental Monitoring, Strategy Formulation, Path-Goal Facilitation, and Outcome Monitoring), which can be discriminated empirically. The positive correlation between instrumental leadership and transformational leadership is in line with the theoretical notion that – based on a (transformational) vision – instrumental leaders formulate a strategy to achieve this vision. However, prior leadership research (e.g., Colbert et al., 2008) was limited since scales derived from theory for the assessment of strategic leadership were missing. Empirical support was also found for the hypothesis that transactional leadership is positively related to instrumental leadership: Goal-setting activities, which are typical for transactional leadership, are the neces-
sary prerequisite for helping followers to achieve work-related goals (as in the case of Path-Goal Facilitation). Another result that helped to clarify the nomological network of leadership constructs was that laissez-faire, possibly the most passive form of leadership, was negatively related to the four dimensions of instrumental leadership, which all represent highly active classes of leadership behavior.

Results of the three empirical studies also revealed that the four dimensions of instrumental leadership can be assessed reliably, as Cronbach's Alphas ranged from .80 to .97. When asked to describe their respective leader's instrumental leadership behavior, followers from one work group typically strongly agreed in their assessments. Apparently, instrumental leadership behaviors can be adequately observed and recognized by followers with somewhat diverse backgrounds (e.g., education, see Study 2).

In all three empirical studies, it was demonstrated that instrumental leadership is useful with regard to various indicators of effective leadership. First, Environmental Monitoring and Path-Goal Facilitation were related to job satisfaction. This result was obtained while controlling for transformational, transactional, and laissez-faire leadership, lending support for the (concurrent, see Study 1) incremental validity of instrumental leadership. These results suggest that instrumental leadership is important, over and above other, hitherto well-established leadership styles. Interestingly, in two independent studies, the predictive validity of instrumental leadership gained support from the data: Environmental Monitoring, Strategy Formulation, and Path-Goal Facilitation (all T1) were related to subsequent objective performance (T2), while Path-Goal Facilitation (T1) predicted subsequent job satisfaction and affective commitment (both T2). These results underline the idea that a causal relationship between instrumental leadership and subsequent positive effects exists. Nevertheless, as other potential explanations for the various results exist, a strictly causal interpretation would be premature. Also, in all analyses, outcome monitoring was not related to criteria of leadership effectiveness. As a speculation, employees with high need for autonomy might feel controlled by outcome monitoring to a larger degree and thus, are not satisfied with this facet of instrumental leadership.

**Implications for theory**

One advantage of instrumental leadership is that it was explicitly constructed from a critical comparison of various, hitherto established but insufficient leadership constructs (Antonakis & House, 2002). The present work contributes to this theoretical work by providing empirical results that support the validity of instrumental leadership. As prior critics noted, the transformational-transactional leadership paradigm might be too superficial and represents a dualistic approach to leadership behavior (Judge et al., 2004). But ultimately, more categories of leadership behaviors are needed to describe the complex phenomenon of a leader's daily work. In addition to laissez-faire, instrumental leadership can represent such a useful extension to the transformational-transactional leadership paradigm. For the first time, strategic leaders’ activities are articulated explicitly in a leadership theory that is congruent to the transformational-transactional leadership paradigm.

Future theoretical work should explicate the various foci of effect of transformational, instrumental, transactional, and laissez-faire leadership. For example, it was
demonstrated that transformational leadership has an effect on individual, team and organizational-level performance. In contrast, it might be interesting to specify whether instrumental leadership has this broad effect, too. According to the results of the present study, it was Path-Goal Facilitation that was consistently associated with individual-level and team-level outcomes. It would be important to provide further arguments for why Strategy Formulation would be especially related to organizational-level outcomes (Waldman, Javidan, & Varella, 2004).

Implications for practice
According to the results of the empirical studies, several of the dimensions of instrumental leadership are positively associated with important criteria of leadership effectiveness such as performance, job satisfaction, and commitment. Thus, practitioners from organizations should foster the development of instrumental leadership. For example, scales for the assessment of instrumental leadership could be utilized in leadership feedback in which followers provide anonymous ratings of their respective leader. The leader, in turn, can develop his/her respective instrumental leadership behaviors from this feedback. Also, leadership development programs building on training or coaching might be valuable in developing instrumental leadership. While in the case of transformational leadership, training programs are well-evaluated (Barling et al., 1996), this is not the case for instrumental leadership so that organizations have to develop their respective instrumental leadership training on their own.

Limitations and directions for future research
Other empirical studies have to replicate the findings from the studies reported above. For example, can other research efforts re-confirm that instrumental leadership explains incremental variance, over and above transformational and transactional leadership? If instrumental leadership would extend the utility of transformational and transactional leadership, both researchers and practitioners would have a more thorough and complete understanding of effective leadership. Nevertheless, other leadership behaviors might exist that have the potential to further extend our current understanding of effective leadership. For example, it might be worthwhile to include other leadership styles such as abusive leadership (Tepper, Moss, Lockhart, & Carr, 2007), too. It should be noted that the instrumental leadership scales were highly intercorrelated in both empirical studies. However, the empirical tests provided support for discriminant validity of the four instrumental leadership scales. Nevertheless, future studies should apply multi-source assessments of leadership constructs such as instrumental leadership in order to further analyse their convergent and discriminant validity by means of advanced statistical methods such as Multitrait-Multimethod Analysis (Krüger et al., 2011).

Since outcome monitoring was not related to any indicator of leadership effectiveness in all three empirical studies, future research should focus on potential moderators of the outcome monitoring – effectiveness relationship. For example, followers’ personal characteristics such as need for autonomy of romance of leadership should be included as moderators (Meindl & Ehrlich, 1987). Since numerous moderators of the relationship between transformational leadership and effectiveness (Judge & Piccolo, 2004) exist, future research should propose and test potential moderators
for instrumental leadership in order to provide a detailed understanding of its effectiveness.

Future research should explore potential predictors of instrumental leadership. For example, is the general mental ability a valid predictor of instrumental leadership? Furthermore, if instrumental leadership extended the transformational-transactional leadership paradigm, it would be interesting to know the relative importance of the leadership constructs: How much variance in outcome criteria is due to transformational, instrumental, transactional, and laissez-faire leadership, across studies (Piccolo et al., 2012)? As was noted above, if organizations are interested in developing instrumental leadership, research is necessary that evaluates development interventions such as trainings. Finally, another important avenue for future research is to gain a detailed understanding about the chronological process of leadership behavior: Do leaders really design a vision before they engage in instrumental leadership (e.g., strategy development)? And do they first develop a strategy and only then articulate goals and sub-goals to their followers (i.e., transactional leadership)? Longitudinal research assessing all major categories of effective leadership at several points-in-time could shed light on this important aspect of construct validity. Ultimately, it would yield an integrated and detailed understanding of the process of effective leadership, connecting both the transformational-transaction and the instrumental leadership approaches to leadership.

References


Antonakis, J., & House, R. J. (2002). The full-range leadership theory: The way forward. In B. Avolio & F. Yammarino (Eds.), Transformational and charismatic leadership: The road ahead (pp. 3-34). Amsterdam: JAI.


