Four Types of Leadership and Orchestra Quality

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This study analyzes the effects of a conductor’s power-based leadership on orchestra quality. The structure of power-based leadership and the hypotheses were tested with a sample of musicians from German orchestras. Confirmatory factor analyses verify four types of power-based leadership of the conductor vis-à-vis the musicians: (1) expert/referent power, (2) informational power, (3) legitimate power through position, and (4) impersonal and personal reward and coercive power. The relative importance of the four forms of power-based leadership on artistic quality was tested using structural equation modeling (SEM). The results supported the hypotheses that expert power and referent power have the strongest positive impact on artistic quality than all other forms of power-based leadership under study. Contributions to theories of leadership and power, research methods, and practice are discussed.

Keywords: leadership, power, power bases, artistic quality, orchestra

Introduction: Previous Investigations on Leadership in Orchestras

Research on leadership in orchestras has been silent (Boerner and Gebert 2012, 347, Hunt, Stelluto, and Hooijberg 2004, 148; Koivunen and Wennes 2011, 53). To date, there have been only a handful of studies that investigate the impact of different forms of leadership attributes (who the leader is) and leadership behaviors (what the leader does) of an orchestra conductor on the musicians and/or the artistic performance of the orchestra (Allmendinger and Hackman 1994; Atik 1994; Boerner and Krause 2002; Boerner, Krause, and Gebert 2001, 2004; Boerner and von Streit 2007; Koivunen 2003; Koivunen and Wennes 2011; Köping 2007; Ladkin 2008; Rowold and Rohmann 2009). These studies use different conceptualizations of leadership and different approaches (see Atik 1994) to analyze the phenomenon of leadership in the orchestra context. For example, the classical study by Allmendinger and Hackman (1994) has shown (among other things) that the well-being of orchestra musicians increases if leadership is existent and constructive. This result is important because research has documented that the general satisfaction of musicians (Allmendinger and Hackman 1995) as well as their specific satisfaction with compensation, growth opportunities, and
work relationships is relatively low (Allmendinger and Hackman 1996), and that many orchestra musicians suffer from performance anxiety expressed in a lack of confidence, worry, emotionality, and physical symptoms (Langendörfer et al. 2006).

Using a qualitative approach (newspaper articles, archival data, and interviews) combined with aesthetic analysis, Koivunen and Wennes (2011) describe three key leadership dimensions of a conductor: relational listening, aesthetic judgment, and kinesthetic empathy. Relational listening is understood as a natural talent of the conductor, which can also be developed and which requires knowledge, experience, and presence in every single moment and full concentration by the conductor. The authors describe aesthetic judgment as an opinion that depends on sensuous perception of the conductor and that includes the evaluation of the whole sound of all instrumental groups. This aesthetic judgment becomes manifest in the conductor’s vision and interpretation of the music, which needs to be (nonverbally) communicated to the musicians. Kinesthetic empathy refers to the conductor’s nonverbal behaviors to transform his or her interpretation of the score into shared action by using gestures, body movements, or facial expressions. Based on case study approach, Ladkin (2008) recommends three fundamentals for leadership in the music domain: mastery, congruence between form and content, and purpose.

Compared to the aesthetic analysis of leadership in orchestras and in line with the traditional trait approach of leadership (see Yukl 2012), another body of research focuses on certain attributes of a conductor that might be crucial for artistic performance. Outstanding conductors are described as charismatic, visionary, inspirational, competent, enthusiastic, “heroic,” “grandiose,” demanding, strict, autocratic, despotic, and/or credible (Atik 1994; Hunt et al. 2004; Köping 2007; Marotto, Roos, and Victor 2007; Weick, Gilfillan, and Keith 1973).

Other studies focus on what the conductor does and analyze the effects of transactional, transformational, or directive-charismatic leadership behaviors in orchestras. For example, Rowold and Rohmann (2009) investigated the role of transformational and transactional leadership on subjective performance criteria (musicians’ satisfaction, their extra effort, and their assessment of the conductors’ effectiveness) in nonprofit orchestras that considered musicians’ positive and negative emotions. They found that transformational leadership as well as transactional leadership behaviors promote performance, and that musicians’ positive emotions contribute to performance indicators whereas negative emotions do not.

Following the transformational leadership approach in orchestras, Boerner and von Streit (2007) confirmed an interaction effect of selected facets of transformational leadership (charisma, inspirational motivation, and intellectual stimulation) and musicians’ positive group mood on orchestra performance. According to Boerner and Gebert (2012), the functionality of a conductor’s transformational leadership behaviors on artistic performance can be explained by two mechanisms: transformational leadership fosters the positive effect of ensemble diversity on idea generation and simultaneously decreases the negative effect of ensemble diversity on idea integration.

Moreover, it has been empirically documented that the conductor’s directive leadership style is functional to the orchestra’s success (Boerner et al. 2001) especially if—at the same time—the musicians perceive the conductor as an indisputable authority (Boerner and Krause 2002). Because of the high interdependency of tasks and the related high demands concerning the coordination of processes (Saavedra, Earle, and Van Dyne 1993), external coordination through the conductor is central in larger orchestras. This statement is valid for the interplay within the instrumental groups (for example, first and second violins) as well as for
the interplay among the instrumental groups (woodwind, violins, violoncello, double bass, brass, percussion, harp). Contrariwise, a decentralized self-coordination of the musicians would lead both to time-consuming conflicts concerning the artistic standards that need to be achieved and to inaccuracies in the synchronization of playing, and might thus affect the artistic quality negatively. Therefore, in larger orchestras a centralized coordination through a conductor is needed (Boerner and Gebert 2012; Boerner and von Streit 2007). Thus, the performance of classical music in a larger orchestra differs from the performance of jazz music where decentral improvisation (Kamoche and e Cunha 2001) is crucial for the “right groove” live on stage (Hatch and Weick 1998).

The results of earlier studies (Boerner et al. 2001; Boerner and Krause 2002) lead to the question on which forms of power the authority, the transformational, or the charismatic-directive leadership behaviors of a conductor are based upon and which consequences these types of power have on orchestra quality. As impressively pointed out by Canetti (1998, 468), “There is no better expression for power than the work of a conductor.” In other words, “There is no doubt that the conductor is a powerful figure—both in front of a symphony orchestra, and as a popular metaphor for authority and good management” (Koivunen and Wennes 2011, 58). Nevertheless, research on conductors’ leadership through different forms of power vis-à-vis the musicians and its consequences for leadership outcome criteria such as orchestra quality is rare. It is unclear which power bases the conductor relies on, and how the conductor’s exertion of the various bases of power may influence the artistic quality of the orchestra.

Aims of the Present Study

This study builds on previous studies on leadership in orchestras and analyzes what the forms of power used by conductors are and to what extent the use of different types of power promotes artistic quality of orchestras. The present article intends to contribute to previous investigations on leadership in orchestras in three ways. First and foremost, this study focuses on orchestra quality. This specific focus is substantial because (1) there is evidence that the effects of leadership vary depending on the emphasized outcome criteria (Hiller et al. 2011) and (2) the effects of different types of power vary depending on the accentuated outcomes (Elangovan and Xie 2000). Therefore, a detailed analysis of the consequences of forms of power in the orchestra context is needed. Second, the conceptualization of conductors’ leadership behaviors differs from previous research on leadership in orchestras. As briefly described previously, most research exclusively studied the role of transactional, transformational, or charismatic-directive leadership in orchestras. However, there is reason to assume that leadership described in terms of the use of power has different effects on orchestra quality compared to other leadership behaviors. Third, hypotheses are developed that predict the leadership outcome—the artistic quality of the orchestra performance—depending on the power bases that the conductor uses vis-à-vis the musicians. This study examines the exercising of power in a new context, leading an orchestra. It differs from previous power research in two respects: (1) the hitherto existing findings in the field of power research are separated from those described here through the investigation of the structure of the individual power bases in the orchestra; (2) research on power is expanded as the functionality of the conductor’s power use is empirically documented. This study differs from traditional power research (see Yukl 2012) because leadership is linked to power, and the outcome of power-based leadership (Krause 2004; 2011) is applied to a new context, the artistic domain. Finally, implications for leadership and power theories, research methods, and practice are derived.
Power-Based Leadership as Antecedent of Orchestra Quality

The conductor’s power is his or her ability to influence a musician insofar as the musician is doing something which he or she “would not do otherwise” (Dahl 1957, 202). A conductor exerts power to achieve his or her particular interpretation of a composition (Krause and Boerner 2001). This is necessary because the artistic production process involves conflicts. As the musicians’ imaginations of the “correct” interpretation of a composition differ, task conflicts (De Dreu and Weingart 2003) are likely to emerge. However, to achieve high artistic quality, a coherent interpretation shared by all musicians is required.

In the orchestra, dissent over various interpretations is not regulable through mutual consent but rather through a central leading conductor (Boerner and Krause 2002). Through the establishment of power, the conductor realizes a coherent interpretation of a certain score and coordinates various sections within the orchestra (Khodyakov 2007). The conductor is responsible for the entire musical score, whereas the orchestra musicians have the notes only for their own instruments. The conductor is in charge to ensure a unified and coordinated performance. In this process, power and control in the conductor–musician relationship are important because the conductor determines the goal, the way of achieving it, and the musicians have to follow the conductor’s vision (Khodyakov 2007). In doing so, the conductor can use various power bases that are classified differently in the literature (for example, Cartwright 1965; French and Raven 1959; Mintzberg 1983; Pfeffer 1981). In the current typology of power bases by Raven (1992) and Raven, Schwarzwald, and Koslowsky (1998), eleven power bases are distinguished on a theoretical level: impersonal reward; personal reward; impersonal coercive power; personal coercive power; position power; legitimate power through (1) reciprocity norm, (2) equity norm, or (3) the social responsibility norm (“power of the powerless”); referent power; expert power; and informational power. Empirically, these eleven power bases were not reproduced. Factor analyses rather showed seven surface factors and two source factors (Raven et al. 1998).

In the following, the relevance of selected power bases used by the conductor to lead the musicians is investigated. The central argument of this article is that the use of expert power and referent power is more functional for the artistic quality of the orchestra than the use of all other types of power. The rationale for this argument lies in the fact that the orchestra musicians perceive themselves to be artists who do not pursue careers but rather follow their “calling” (Boerner and Krause 2002). Orchestral musicians are highly trained and skilled persons (Hunt et al. 2004) who are experts for their specific instruments. Crucial for the play of the musicians is their intrinsic motivation (Langendörfer et al. 2006). If intrinsic motivation is high, the task will be performed because the task itself is enjoyable and not because of anticipated consequences. The importance of high intrinsic motivation and the combined flow experience (Csikszentmihalyi and Lefèvre 1989) is documented for the orchestra context (Köping 2007). If the intrinsic motivation of the musicians is low, negative secondary effects have to be expected. In this constellation, the musicians assume the conductor’s conception, not out of conviction, but rather only “half-heartedly” or as a work-to-rule—with corresponding consequences for orchestras quality.

According to Amabile et al. (1994), intrinsic motivation has two facets, namely, challenge and enjoyment. The conductor’s use of power vis-à-vis the musicians reduces the musicians’ degrees of freedom and can jeopardize their intrinsic motivation. The reduction of the artistic
freedom is associated with lower degrees of challenge and enjoyment. In addition to challenge and enjoyment, a task is intrinsically motivating if the task is assessed as meaningful and valuable (Leonard, Beauvais, and Scholl 1999). Such an assessment is more likely if the content of the task is congruent with the personal value system of the musicians. If the musicians perceive the conductor's artistic conception as meaningful and valuable, their intrinsic motivation will be high.

Against this backdrop, the significance of expert power becomes understandable. The attribution of strong expert power to the conductor by the musicians is a condition for the musicians’ experience of challenge and their perception that the conductor’s artistic conception is meaningful and valuable. Expert power is based on the musicians’ perception of the conductor’s abilities, knowledge, and/or skills. Expert power refers to what Ladkin (2008) calls “mastery.” The conductor is considered a highly trained professional by the musicians when they believe that the conductor masters the artistic and technical possibilities and limits of all the instruments in the orchestra, as well as their combined performance, while the musician is, as a rule, “only” an expert in his or her own instrument. The conductor can not only assess the interaction of the instruments better than the musician; he or she is in the position to develop an artistic conception for the whole orchestra, as well as able to diagnose and correct errors during the realization of this conception. To reach a coherent interpretation of the music, it is important that the conductor communicates his or her message nonverbally in a clear manner to the musicians (Atik 1994). Conversely, if the musicians perceive the conductor as an incompetent leader, they often ignore his or her gestures and instructions (Bathurst and Ladkin 2012).

Strong referent power increases the likelihood that the conductor’s artistic conception is in line with the personal value system held by the musicians. A conductor exercises referent power if he or she serves as a positive role model for the musician, that is, as someone whom the musician perceives to be, for example, reliable, charismatic, or attractive.

Yet, a conductor influences a musician through impersonal rewards, in that he or she explicitly praises the orchestral musician (see Atik 1994) for artistic achievements, supports him or her emotionally, and provides attention or personal recognition. Contrariwise, a conductor exercises impersonal coercive power when he or she reprimands a musician in front of his or her colleagues, or criticizes, defames, or ignores him or her. A conductor uses power through personal reward if he or she, for example, acts as a positive influence on future instrumentation or castings. Contrary to this, negative influence on the musician's career opportunities denotes personal coercive power. The exercise of impersonal reward or coercive power will have a lower impact on the musician's intrinsic motivation compared to the use of expert power and referent power. The use of personal reward or coercive power would endanger the musician's intrinsic motivation because reward and coercive power contradict the self-concept of a musician as an artist. Through reward and coercive power, no persuasion of the orchestra musician is achieved but rather merely a perfunctory willingness (obedience).

Legitimate power is based on the conviction of the orchestral musicians that the conductor legitimately has the right to request something from the musicians, based upon various values and norms that the orchestral musicians have internalized or have particular requirements, and the musicians comply with these expectations. In the orchestra the reciprocity norm, the equity norm, or the norm of social responsibility is less dealt with, rather generally accepted positions within the orchestra (called position power or legitimate power through position). The conductor’s use of legitimate power on the basis of position takes place when
the musicians feel bound by their roles as orchestral members to comply with the conductor's vision. In this case the orchestral musician complies with the conductor's instructions simply because he or she is the conductor. The use of position power will not have a great influence on the musicians' intrinsic motivation because position power is not directly associated with the content of the musicians' task itself.

Informational power is based on information that the conductor relays to the musician. With the exertion of informational power, the musician can review and comprehend the adequacy and relevance of this information, which is not always possible when the conductor uses expert power. A conductor exercises informational power when he or she, for example, explains the historical performance practice of a composition or demonstrates the reasons for necessary changes in interpretation. If the conductor uses informational power, the musicians' perception of the value of the artistic conception will be lower compared to the use of expert power and referent power. The reason is that informational power provides merely elucidation without considering the emotionality inherent in playing music.

To this extent, the musicians are less convinced by informational power, position power, impersonal and personal reward, and coercive power than by the exercising of expert power and referent power. The preceding line of argumentation leads to the following hypotheses:

**Hypothesis 1.** The use of the conductor's expert power has a stronger positive effect on the artistic quality of orchestras than the exertion of informational power, position power, impersonal and personal reward, and coercive power.

**Hypothesis 2.** The use of the conductor's referent power has a stronger positive effect on the artistic quality of orchestras than the exertion of informational power, position power, impersonal and personal reward, and coercive power.

**Methodology**

The following section describes the methodology of the study.

**Respondents**

To test the relative frequency of use of the various power bases by orchestra conductors, the researcher developed a questionnaire about leadership through power and the artistic quality of orchestras. In line with most dominant approaches regarding the measurement perspective in leadership research (Hiller et al. 2011), the researchers measured power-based leadership used by a conductor by asking for the musician's perspective (follower perspective). A first version of the questionnaire was discussed with two conductors and two academic experts who study power for the questionnaire's face validity, namely, the clarity of the wording. The orchestra managements were respectively asked for the participation of their musicians in the study. All questionnaires were handed out to the musicians in face-to-face interactions. After completing the questionnaires, the musicians returned them in a closed envelope so that full confidentiality was ensured. Given this procedure, the response rate was relatively high (more than 70 percent). Overall, 436 musicians from German theater and concert orchestras were surveyed. The investigated sample of musicians is largely equivalent to the actual composition of an orchestra: the majority of the musicians (59 percent) belong to the string
The musicians were asked to specify the degree to which a conductor uses the various power bases that induce them to correspondingly change their initial interpretations of a score. Moreover, the musicians were asked to assess the artistic quality of their orchestra, and at the same time to think about their conductor.

**Measurements**

*Artistic quality of the orchestra.* In contrast to performance quality in the music theater (Boerner and Jobs 2013; Boerner et al. 2008), artistic quality in orchestras as a leadership outcome has rarely been investigated in previous leadership research (Hiller et al. 2011). Building on previous studies (Boerner 2004; Boerner and Krause 2002; Boerner et al. 2004), the present study gathered facets of the reactions to the quality of the orchestra, such as the resonance of the audience, the reactions by the press/critics, guest soloists’ assessments, the conductors’ assessments, and musicians’ assessments (operationalized by their personal quality expectations, individual musical skills, musical skills of the whole orchestra, and the overall judgment). The reliability (Cronbach's alpha) for the entire nine items that measured the orchestra's performance was .90. Table 1 provides an overview of the items to measure artistic quality and their intercorrelations. The items were consolidated into a cumulative value called "artistic quality" for further statistical analysis.

The researcher additionally attempted to estimate the validity of this quality measurement. For this purpose, the researcher reverted to an established classification of orchestras into tariff classes. The following tariff classes are distinguished: A/F1 = outstanding-tariff class;

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**Table 1. Items to Measure Artistic Quality of the Orchestra and Their Intercorrelations**

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<th>Variable</th>
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<td>1 Musicians’ overall quality judgment</td>
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<td>2 Musicians’ quality assessment compared to their expectations</td>
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<td>3 Musicians’ quality assessment compared to their musical skills</td>
<td>.78***</td>
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<td>4 Musicians’ quality assessment compared to the musical skills of the whole orchestra</td>
<td>.79***</td>
<td>.77***</td>
<td>.76***</td>
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<td>5 Others’ overall quality judgment</td>
<td>.63***</td>
<td>.56***</td>
<td>.55***</td>
<td>.53***</td>
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<td>6 Resonance of the audience</td>
<td>.53***</td>
<td>.50***</td>
<td>.49***</td>
<td>.50***</td>
<td>.72***</td>
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<td>7 Resonance of press/critics</td>
<td>.18***</td>
<td>.17***</td>
<td>.20***</td>
<td>.16***</td>
<td>.37***</td>
<td>.44***</td>
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<td>8 Quality assessment of the conductor</td>
<td>.24***</td>
<td>.23***</td>
<td>.29***</td>
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<td>.36***</td>
<td>.28***</td>
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<td>9 Quality assessment of guest soloists</td>
<td>.65***</td>
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<td>.63***</td>
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<td>.57***</td>
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*Notes. Pearson’s correlation coefficients, two-tailed significance. N varied between 420 and 435 due to missing values in the variables.*

**p < .01, ***p < .001.**
A = very high-tariff class, B = high-tariff class, C = moderate-tariff class, D = lowest-tariff class. In this study, orchestras of the tariff classes A/F1, A, and B took part. An analysis of variance shows that the three tariff classes significantly differ from each other with regard to the artistic quality of the orchestra ($F(3, 400) = 25.60; p < .001$). The Scheffé post hoc test of multiple mean differences shows significant differences among all three tariff classes with respect to the expected tendency in artistic quality (see Table 2). Orchestras in higher-tariff classes received higher ratings of artistic quality than those in lower-tariff classes.

**Power bases used by the conductor.** To date, no established measurement of the power bases in the orchestra field exists. Therefore, the researcher developed new scales for all power bases. This operationalization of the power bases relied heavily on previous power research in other settings, which has shown valid measurements for each power base (for example, Frost and Stahelski 1998; Raven et al. 1998; Yukl and Falbe 1991). The operationalization is aligned with French and Raven’s (1959) frame of reference and its enhancement by Raven (1992). The conductor’s use of power is evaluated from the perspective of the orchestra musicians being led by him or her. Each of the investigated power bases was operationalized through several context-specific items. In doing so, the number of items per examined power base varied. As a response, I used a seven-point rating scale.3

Given that previous measurements of personal power are based on various classifications of power bases (Krause 2008), they are distinguished from one another, inter alia, in the number and type of power bases measured. In the context of orchestras, there are reasons to assume that the number of power bases deviates from Raven et al.’s (1998) classification. Therefore, the researcher initially verified empirically the number of power bases in orchestras to test the number of power bases used in orchestras and calculated confirmatory factor analyses (see Table 3).

| Table 2. Results of Post Hoc Tests by Scheffé to Test of Multiple Mean Differences of Tariff Class in Terms of Artistic Quality of the Orchestra |
|-----------------------------|-------------------|----------------------|-------------------|------------------|-------------------|
| **Tariff Class** | **Means of Scale Sums of Artistic Quality of the Orchestra** | **Cases per Tariff Class** | **Tariff Class A Mean Standard-Difference Error** | **Tariff Class B Mean Standard-Difference Error** |
| A/F1 | 5.62 | 24 | .85*** | .22 |
| A | 4.80 | 224 | – | – |
| B | 4.27 | 155 | – | – |

Note. N = 403 due to missing values in the variable tariff class.

***p < .001.

| Table 3. Model Fit of the Structure of Power Bases in Orchestras |
|-----------------------------|-------------------|----------------------|------------------|-------------------|
| **Coefficients Model** | **df** | **χ²** | **p** | **GFI** | **AGFI** | **RMSEA** |
| G-factor model of power bases | 119 | 977.13 | < .0001 | .76 | .69 | .14 .14 .15 |
| Six-factor model of power bases | 117 | 951.95 | < .0001 | .79 | .73 | .13 .12 .14 |
| Five-factor model of power bases | 109 | 699.40 | < .0001 | .86 | .81 | .11 .10 .12 |
| Two-factor model of power bases | 42 | 202.89 | < .0001 | .95 | .83 | .09 .07 .10 |
| Four-factor model of power bases | 80 | 177.60 | < .05 | .95 | .91 | .05 .04 .06 |

Notes. AGFI: Adjusted Goodness of Fit Index; χ²: Chi-Square Value; GFI: Goodness of Fit Index; df: degrees of freedom; RMSEA: Root-Mean-Square Error of Approximation; p: probability. In all tested models, correlated factors were assumed. Below the point estimation of the RMSEA, the confidence interval is provided.
In the first stage, the researcher tested the six-factor model of power bases according to Raven (1992) and the general factor model of power bases, where the full variance is traced back to a single factor. In the second stage, the researcher tested a five-factor model of the conductor’s power bases because it can be assumed that impersonal and personal reward and coercive power are related categories and therefore can be combined. The five-factor model of power bases in the orchestra was accordingly represented by the following power bases: impersonal and personal reward/coercion, legitimate power through position, referent power, expert power, and informational power. Corresponding to the empirical factor structure (source factors) by Raven et al. (1998), in the third stage the researcher tested a two-factor model, which is displayed through the hard power bases and the soft power bases. In the fourth stage of the testing procedure, a four-factor model of power bases was tested because a substantial relationship between impersonal and personal reward and coercion and a tight link between expert power and referent power can be assumed.

Consequently, the four-factor model is represented by the power bases of impersonal and personal reward/coercive power, legitimate power through position, referent power/expert power, and informational power (see Table 4). Given that a conductor rarely uses a single power base but rather various power bases in combination with each other, correlated factors were accepted for the confirmatory model tests. As Table 3 shows, the six-factor model and the G factor model, as well as the five-factor model and the two-factor model of power bases in the orchestra, are unsatisfactory with regard to all fit indicators. For this reason, the researcher discarded these models. With regard to all indicators of model adaptation, the four-factor model of power bases in orchestras shows an acceptable fit.

The means, standard deviation, and intercorrelation of the conductor’s power bases are shown in Table 5. Significant positive relations between expert/referent power and impersonal and personal reward/coercion appear. Moreover, expert/referent power correlates positively with informational power.

It becomes obvious that legitimate power through position is the most intensely used kind of power compared to all other power bases under study. This finding contradicts previous results about the use of power in other organizations that have shown that expert power (Frost and Stahelski 1988) or referent power (Yukl, Kim, and Falbe 1996) was predominantly used to influence other individuals’ attitudes and/or behaviors. The second most important reason for the changes in the musicians’ manner of interpretation is informational power followed by expert/referent power. In fourth place is the classic power source of reward and coercion. Reward power and coercive power have the lowest mean, which can be explained by the fact that the conductor has, on the one hand, fewer possibilities to reward or punish orchestra musicians compared to leaders in for-profit organizations. On the other hand, the low mean of reward and coercive power in the orchestra setting can be explained in terms of the self-esteem of the musicians: to keep and maintain self-esteem it is common that the attitude or behavioral change was forced through legitimate power or expert power, for example, rather than in expectation of a reward or to avoid some sort of punishment. An analysis of variance with single contrasts and legitimate power through position as reference category shows a significant effect of the used legitimate power through position compared to the used informational power \( F (1, 410) = 99.34, p < .001 \), compared to the used expert/referent power \( F (1, 410) = 272.92, p < .001 \), and compared to the used impersonal and personal reward and coercive power \( F (1, 410) = 1042.85, p < .001 \) of the conductor. The discussion section refers to this point.
To analyze the effects that the various power bases used by the conductor vis-à-vis the musicians have on the artistic quality of the orchestra, the researcher applied linear structural equation modeling. The four-factor model shows a very good match, with exclusively direct effects of the forms of power on the artistic quality of the orchestra ($df = 128$, $\chi^2 = 155.63$, GFI = .97, AGFI = .92, RMSEA = .02). The results, therefore, confirm the recursive four-factor model with direct effects on artistic quality. The path diagram with the parameter estimation for the four-factor model of the conductor’s power bases as determinants of the artistic quality of the orchestra is illustrated in Figure 1 (standardized solution).

The figure clarifies that the various power bases of the conductor increase the artistic quality of the orchestra in different degrees: expert/referent power has the strongest positive effect

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<tr>
<th>Table 4. Results of Confirmatory Factor Analyses: Four Power Bases in Orchestras</th>
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<td><strong>Factor</strong></td>
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<td>1. Expert/referent power</td>
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<td>2. Impersonal and personal reward and coercive power</td>
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<td>3. Legitimate power through position</td>
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<td>4. Informational power</td>
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Note. A 7-point response scale was used.
FOUR TYPES OF LEADERSHIP AND ORCHESTRA QUALITY

on the artistic quality of the orchestra. In contrast, informational has a medium positive effect on the artistic quality. Impersonal and personal reward/coercive power and legitimate power have, to approximately the same extent, a weak positive effect on the artistic quality of the orchestra. The differing amounts of path coefficients in the model can be interpreted as a confirmation of hypotheses 1 and 2 that the use of expert power and the use of referent power are the most significant predictors of the artistic quality of the orchestra compared to all other power bases applied. The power bases analyzed here account for a total of 72 percent of the variance of artistic quality, which can be evaluated as a meaningful amount of explained variance.

To control the data error per construct, the researcher estimated the portion of explained variance according to Holling (1993, 293) (squaring the path coefficients after relativizing them in terms of their different reliabilities). To calculate the effect sizes of the single predictors, the researcher compared the amount of explained variance with and without this predictor in the criterion. The following reduced explained variance in the criterion “artistic quality” through elimination of the predictor was the result: without expert/referent power, the amount of reduced explained variance is 64 percent; through the elimination of informational power, the amount of reduced explained variance is 7 percent; through the elimination of legitimate power, the amount of reduced explained variance is 1 percent; and through the elimination of impersonal and personal reward and coercive power, the amount of reduced explained variance is 0 percent. This comparison shows that expert/referent power has the strongest effect size. In light of these results it can be concluded that this study successfully identified relevant predictors of the artistic quality of the orchestra.

Discussion

The present study analyzed the conductor’s applied power bases as predictors of the artistic quality of orchestras. The investigation contributed to the literature in three ways. First, it has shown that four power bases can be distinguished in the orchestra setting. Second, positive effects of power bases on the artistic quality of the orchestra have been empirically documented. Third, the results have shown that the conductor’s expert and referent bases of power are more conducive to orchestra quality than legitimate power through position, informational power, impersonal and personal reward, and coercive power. In the following, consequences of the study for leadership and power research, research methods, and practice, as well as study limitations are discussed.

Table 5. Means, Standard Deviations, Intercorrelations of a Conductor’s Power Bases

<table>
<thead>
<tr>
<th>Power Bases of a Conductor</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Expert and referent power</td>
<td>3.31</td>
<td>1.50</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2. Impersonal and personal reward and coercive power</td>
<td>2.14</td>
<td>1.28</td>
<td>.13**</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>3. Legitimate power through position</td>
<td>4.89</td>
<td>1.37</td>
<td>.07</td>
<td>.13**</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4. Informational power</td>
<td>3.83</td>
<td>1.76</td>
<td>.53***</td>
<td>.03</td>
<td>-.04</td>
<td>—</td>
</tr>
<tr>
<td>5. Orchestra quality</td>
<td>0.59</td>
<td>0.33</td>
<td>.50***</td>
<td>.13**</td>
<td>.10*</td>
<td>.32***</td>
</tr>
</tbody>
</table>

Notes: Pearson’s correlation coefficients, two-tailed significance. 7-point Likert scales were used to measure the power bases. Scale to measure orchestra quality ranged from 0 to 1. N varied between 416 and 432 due to missing values in the variables.

*p < .05, **p < .01, ***p < .001
Implications for Leadership and Power Research

This study combined leadership and power research. In contrast to traditional leadership research (see Yukl 2012), the conductor's leadership behavior was described in terms of the use of power. Previous power research has shown that power bases are used to a different extent in diverse organizational settings. In hospitals, for example, informational power, position power, expert power, and legitimate power through the norm of social responsibility are the most important power bases (Raven et al. 1998). Conversely, in schools, teachers influence their students primarily through reward and coercive power (Koslowsky and Schwarzwald 1993). In companies, expert power, referent power, and legitimate power are used most frequently (Frost and Stahelski 1988; Yukl and Falbe 1991; Yukl et al. 1996). For the orchestra domain this study has shown that legitimate power through position is most frequently used followed by informational power and expert/referent power. The classical power bases, reward power and coercive power, are rarely used in the orchestra context. So far, a theoretical explanation for the different use of the power bases depending on the research...
context is absent. Against this background, it could be meaningful—in analogy to the contingency approach of leadership—to distinguish the manner of power use according to the specific situation. As shown, in orchestras the combination of expert and referent power is important to enhance orchestra quality. The rationale for this specific application of power lies in the specific constellation in orchestras: the need for a directive leadership style, on the one hand, to ensure coordination and the need for maintenance of the intrinsic motivation of the musicians, on the other hand.

Implications for Methods in Power Research

The results support the research strategy used. The application of the context-specific approach of the power bases is accompanied by a high explanatory value for the respectively considered, context relevant performance. Through the structural equation modeling of power bases in an orchestra context, four power bases could be confirmed. This is evidence that the typology of the power bases of French and Raven (1959) and Raven et al. (1998) cannot be generalized to all contexts. Although, theoretically, six (Raven 1965) or rather eleven power bases (Raven et al. 1998) are distinguishable, in the orchestra setting four power bases are empirically supported: expert/referent power, impersonal and personal reward/coercion, legitimate power, and informational power. In comparison to other organizational contexts, expert power and referent power, as well as reward power and coercive power, are more closely linked together in the orchestra setting. The close liaison between expert power and referent power can be explained by noting that orchestra musicians are primarily prepared for a solo career during their training. Therefore, they see each other as professionals and, hence, identify with a similarly professional conductor whom they credit with a high degree of expert knowledge. The perception of expert knowledge leads to a higher desirability of the conductor and, therefore, fosters parallel referent power. This argument that expert power leads to referent power is also meta-analytically documented (Carson, Carson, and Roe 1993). Furthermore, reward power and coercive power are closely connected in orchestras. These power bases are generally difficult to distinguish from each other, so it is challenging to determine in a special case whether a reward or coercion is presented (Raven et al. 1998, 315). The withholding of a reward can imply a coercion technique and, conversely, the detention of coercion can demonstrate a reward technique.

Hence, it would be methodically necessary to use a more than the hitherto context-specific approach of power that is aligned with the respective organizational type (for example, hospitals, schools, universities, prisons, churches). The use of a context-specific approach (Krause and Kearney 2006) would be beneficial because some inconsistencies in previous power research (Podsakoff and Schriesheim 1985) could be reduced. Certainly, it would eliminate, from an operationally pragmatic viewpoint, informed statements about leadership outcome criteria depending on the kind of organization. In sum, this investigation encourages other scholars to analyze other leadership outcome criteria in the orchestra context such as musicians’ motivation, flow experiences, burnout, mental and physical health, substance abuse, or commitment to the conductor or orchestra. This research would be beneficial to expand our knowledge on the effects of orchestra leadership.

Implication for Practice

The results of the study illustrate practical consequences for leadership in orchestras. From the viewpoint of the musicians, the conductor is using legitimate power through position
most frequently to enforce his or her way of the interpretation. Yet, to promote the artistic quality of the orchestra, it is not legitimate power through position that is most crucial, but expert/referent power (see Figure 1). However, the musicians perceived that expert/referent power is used less frequently compared to legitimate power through position. Therefore, a discrepancy between the ideal and the reality becomes obvious: from the viewpoint of the musicians, many conductors rely on their leadership position instead of convincing the musicians through expertise and referent power. Considering that many musicians perceive the artistic quality of their orchestra as in need of improvement (Boerner et al. 2001), consequences for action are immediately indicated. Based on the perspective of the musicians that was chosen in this study, the education of conductors should focus on professional competence and also—as in other leadership positions—on the social competence or interpersonal skills (Hunt et al. 2004) of the conductors to enhance the likelihood to become a positive role model and consequently promote orchestra quality. Overall, a balancing act seems to be necessary between the enhancement of professional competence—to increase the potential for expert power—and social competence—to enhance the potential for referent power. According to the results of this study, these two competencies, which manifest themselves in expert and referent power, are the central components for the highest degrees of artistic quality.

Limitations

Although the analysis had advantages, it also involved problems. One issue is the measurement perspective. This study measured the conductors' leadership behaviors from the perspective of the musicians, and consequently the musicians' perceptions come into play. This measurement perspective is not unique for the present study but is the dominant measurement perspective in leadership research during the past twenty-five years (Hiller et al. 2011). Another problem of this cross-sectional study is the possibility of a common method bias (Podsakoff et al. 2003). Given that both the power bases and the artistic quality were estimated by the same source, the amount of the calculated path coefficients could, in principle, also be based upon an overestimation of the predictor–criterion relationships. In light of this issue, it would be beneficial in further investigations to use multisource data and to classify the artistic quality of the orchestra through various groups of individuals. A longitudinal design is recommended for this purpose.

Another issue is that good orchestras attract good conductors. Consequently, the reputation of an orchestra approximately thirty years ago is associated with the artistic quality of the orchestra today. Therefore, it needs to be concluded that variations of orchestras' quality are also contingent upon other characteristics and not only upon the leadership behaviors of the conductor. Moreover, all orchestra musicians came from German orchestras. Given that, future research is encouraged to reanalyze the impact of power-based leadership on orchestra quality in other countries before generalizations can be made. A prerequisite for those generalizations would be cross-cultural research on leadership in the orchestra domain.

Notes

1. Moreover, the study by Bathurst, Williams, and Rodda (2007) analyzed events and processes during a change process in an orchestra and did not apply a specific leadership approach.

2. There are several challenges in measuring artistic quality of orchestras: first, no standard criterion for the operationalization of the construct exists; second, the application of a standardized performance criterion would mitigate individual musicians' standards.

3. The rating method has advantages compared to the ranking method in power research: the ipsativity of the data connected to the ranking method would lead to linear dependence in the set of the power bases to be assessed.
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whereby the statistical analysis of the underlying linear structures would become problematic (Schriesheim, Hinkin, and Podsakoff 1991). For this reason, my measurement is based on the tradition of the deductively developed frameworks for measuring personal power in organizations.

4. With the successive confirmatory model tests, the researcher used a covariance matrix as a starting matrix, the variances were fixed as latent variables, and all loadings were freely estimated, respectively.

References


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