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Michael SCHAERER
Singapore Management University, schaerer@smu.edu.sg

Christilene du PLESSIS
Singapore Management University, cduplessis@smu.edu.sg

Andy J. YAP
INSEAD

Stefan THAU
INSEAD

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Low power individuals in social power research: A quantitative review, theoretical framework, and empirical test

Michael Schaerer[a,*], Christilene du Plessis[a], Andy J. Yap[b], Stefan Thau[b]

[a] Singapore Management University, Singapore
[b] INSEAD, Singapore

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ABSTRACT

We examine the role of low-power individuals in social power research. A multi-method literature review reveals that low-power individuals may be insufficiently understood because many studies lack necessary control conditions that allow drawing inferences about low power, effects are predominantly attributed to high power, and qualitative reviews primarily focus on how high-power individuals feel, think, and behave. Challenging the assumption that low power tends to produce opposite consequences of high power, we highlight several similarities between the two states. Based on social exchange theories, we propose that unequal-power (vs. equal-power) relationships make instrumental goals, competitive attitudes, and exchange rules salient, which can cause both high- and low-power individuals to behave similarly. Two experiments suggest that although low-power individuals sometimes behave in opposite ways to high-power individuals (i.e., they take less action), at other times they behave similarly (i.e., they objectify others to the same extent). We discuss the systematic study of low-power individuals and highlight methodological implications.

1. Introduction

Over the past decades, a considerable interest in understanding the consequences of social power has developed. This research provides us with a multitude of insights into how the powerful think, feel, and behave. For example, studies report that, compared to having little power, being powerful leads individuals to form superficial social perceptions (Dépret & Fiske, 1993; Fiske, 1993), engage in approach-related behavior (Anderson & Berdahl, 2002), objectify themselves and others (Gruenfeld, Inesi, Magee, & Galinsky, 2008; Inesi, Lee, & Rios, 2014), overestimate their own height and underestimate others' height (Duguid & Goncalo, 2012; Yap, Mason, & Ames, 2013), reap more benefits at the bargaining table (Galinsky, Schaerer, & Magee, 2017), and report greater well-being (Kifer, Heller, Perunovic, & Galinsky, 2013).

Power can be defined as individuals' asymmetric control over valuable resources (Emerson, 1962; Fiske, 2010; Keltner, Gruenfeld, & Anderson, 2003; Magee & Smith, 2013). Thus, being high in power implies having control over relatively more resources, while being low in power implies having relatively less control over valued resources. A review of the published literature relying on this conceptualization suggests that past theories and studies have mainly focused on explaining the consequences of having control over *a lot* of resources, i.e., the behavior of the *powerful* (for recent reviews, see Galinsky, Rucker, & Magee, 2015; Schaerer, Lee, Galinsky, & Thau, 2018; Sturm & Antonakis, 2015). The present research investigates whether this focus on high power may have led to an insufficient understanding of the consequences of *low* power. Specifically, prior research appears to assume that powerfulness is the driving causal force behind the effects of power and that inferences for low power *linearly* follow from high power. Such assumptions, in turn, may have influenced the ways in which theories of social power have been formulated, studies have been designed, and inferences have been drawn from data. To more systematically evaluate whether there is merit to these claims, we conduct a quantitative review of past social power research published in management, psychology, and marketing journals. Using frequency and content analyses, we assess how extant research has theorized about power, what study designs have been used to test these theories, and how power effects have been attributed in the published literature. Our analyses suggest that the literature's focus on powerfulness has indeed led to one-sided theory development, study designs limiting our ability to draw theoretical inferences for low-power individuals, and potential inconsistencies in the literature.

Based on these inductively derived insights, we develop a theoretical model of low power by conceptually separating it from high power. Specifically, we propose that although high- and low-power

* Corresponding author.
E-mail address: schaerer@smu.edu.sg (M. Schaerer).

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individuals are *different* in many respects, including the amount of agency they enjoy and the influence they have over others, they also share certain *similarities*. Both high- and low-power individuals are part of asymmetric, unequal-power relationships. The common experience of such a relationship is proposed to elicit (in domains we specify) similar psychological experiences, judgments, and behaviors, compared to individuals who are in symmetric, equal-power relationships. Building on social exchange theories (Blau, 1964; Coleman, 1994; Cook & Yamagishi, 1992; Emerson, 1976; Homans, 1961; Kelley & Thibaut, 1978), we propose that unequal-power relationships (versus equal-power relationships) are purposive and individuals primarily enter and maintain these relationships for self-interested reasons. We thus argue that unequal-power relationships increase the salience of instrumental goals, promote competitive attitudes, and lead to the emergence of exchange rules (relative to equal-power relationships). Based on this distinction between unequal- and equal-power relationships, we then derive predictions for when being high in power and low in power lead to similar (rather than opposite) judgments and behaviors. Finally, we conduct two high-powered experiments (one of which being a pre-registered replication using a different subject pool) to provide an initial test of this framework. In these experiments, we examine two consequences of power – action orientation and objectification – for which it remains unclear whether low power linearly follows from high power, because prior experiments testing these consequences used study designs that did not include low power.

Our research makes several contributions to the social power literature. First, it quantitatively evaluates extant theories, study designs, and the attribution of results in social power research, highlighting a focus on high-power individuals and an insufficient understanding of low-power individuals. Second, we revisit and build on micro-sociological conceptualizations of power (e.g., Coleman, 1994; Cook & Yamagishi, 1992) to develop a theoretical model, which proposes that high- and low-power states emerge within the context of unequal-power relationships and that such relationships come with shared psychological experiences and behavioral schemata that categorically differ from equal-power relationships. The majority of recent power research tends to refer to micro-sociological perspectives on power only in passing and we believe that integrating recent empirical evidence with these foundational perspectives provides new insights into the psychology of being in unequal-power relationships and, in turn, helps illuminate the psychological consequences of being low in power. Based on the distinction between unequal- and equal-power relationships, we then derive several propositions for the effects of low power that open new lines of inquiry for future research. Third, our theoretical framework serves as a heuristic guide for researchers to more systematically delineate when high and low power likely lead to *opposite* effects and when they may lead to *similar* effects. Finally, we discuss the theoretical and methodological implications for future power research. We suggest ways in which the psychology of low power can be systematically incorporated into future theories of social power. We also discuss relevant methodological considerations, such as the use of more nuanced study designs and the selection of appropriate control conditions.

2. Preoccupied with the powerful?

People with power hold prominent positions in society. We read about them in the news, learn from them in the classroom, are affected by their decisions, and often strive to emulate them. Because the actions and decisions of the powerful tend to be more consequential compared to individuals with less power (Schwartz, Tesser, & Powell, 1982; Spiegel & Machotka, 1974; Van Vugt, 2006), the powerful capture our imagination and attention (Dépret & Fiske, 1999; Fiske & Dépret, 1996; Hall, Carter, & Horgan, 2001). People in positions of high power also tend to be perceptually more salient than people low in power. For example, the offices of powerful CEOs are often situated on higher floors and a judge's seat in the courtroom is elevated to differentiate them from others (Fiske, 2004; Schwartz, 1981). Experimental evidence also suggests that the powerful, relative to those with less power, are more likely to stand out in social settings (Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008; Magee, Galinsky, & Gruenfeld, 2007). And because perceptual salience attracts causal attributions (Pryor & Kriss, 1977; Taylor & Fiske, 1975, 1978), past research may have been inclined to explain the world through the eyes of the powerful, giving rise to a trend in research to explain the consequences of high power while leaving the distinct consequences of low power unexplored.

2.1. Does the literature focus more on high than low power? A quantitative review of the social power literature

If past research has indeed placed more emphasis on studying high- relative to low-power individuals, then this tendency is likely reflected in how theories of social power have been constructed, studies have been designed, and inferences have been drawn from data. We conducted a quantitative review of past social power research to gauge the degree to which high power, relative to low power, has been at the center of research attention.

2.1.1. Focus of past review articles

First, we systematically examined the extent to which theoretical review articles on social power have focused on high power relative to low power. Since reviews reflect the central themes and debates in the literature (Webster & Watson, 2002), they should give insight into the extent to which the field of social power has focused on the two opposing sides of the power spectrum. Specifically, we calculated the relative frequency of words related to high power (i.e., “high power,” “powerful,” “powerfulness,” “have power,” “more power”) relative to low power-related words (i.e., “low power,” “powerless,” “powerlessness,” “lack power,” “less power”) in ten major reviews of social power.[1] We found that high-power-related words were used more frequently (63.6%) than low-power-related words (36.4%).

Although this analysis provides a preliminary indication that past research may have put more emphasis on studying powerfulness, we also conducted more systematic analyses. One way to gauge a field’s focus is to quantitatively review (a) which conditions (i.e., high power, low power, control) have been included in experimental designs and (b) to which experimental condition effects have been attributed to. Both experimental designs and effect attributions are directly guided by the literature’s assumptions and expectations about the effects of power. If high power and low power are of equal interest, then we would expect to find an approximately equal number of study designs that contrast both high- and low-power conditions to a control condition. However, if the literature focuses primarily on high power, then we would expect to find more study designs that compare high power to either low power or a control condition. Similarly, if there is an equal interest in high and low power, then we would also expect an approximately balanced discussion of study results in terms of whether each state is responsible for an effect.

2.1.2. Frequency of study designs used

To examine whether past studies were primarily designed to assess the effects of high or low power, we conducted an extensive literature search to retrieve relevant published studies in which social power served as the independent variable. First, we searched major academic databases (e.g., PsycINFO, Google Scholar) for articles published in a pre-determined list of 19 journals in organizational behavior (e.g.,

[1] The following reviews were included: Anderson and Brion (2014); Bunderson and Reagans (2011); Fiske (2010); Galinsky, Chou, Halevy, and Van Kleef (2012); Galinsky et al. (2015); Hirsh, Galinsky, and Zhong (2011); Keltner et al. (2003); Magee and Smith (2013); Magee and Galinsky (2008); Sturm and Antonakis (2015).

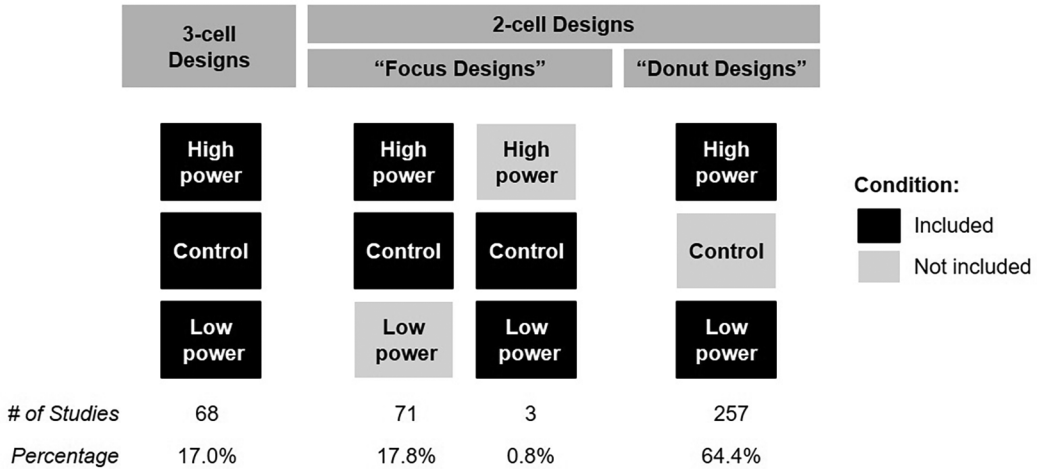

Fig. 1. Frequency of study designs in our sample (N = 399 studies).

Organizational Behavior and Human Decision Processes, Academy of Management Journal), psychology (e.g., Journal of Personality of Social Psychology, Psychological Science), and marketing (e.g., Journal of Consumer Research; see Appendix A for the complete journal list). We used the following search term: power* OR dependence OR status OR hierarch* OR control. The retrieval was conducted on February 2, 2015 and included all articles available on or prior to that date. Second, we hand-searched the reference sections of review articles to identify additional studies. Third, we searched the abstracts of the considered publication outlets to make sure we did not miss any relevant papers. Fourth, we searched the websites and publication lists of all authors in our sample to identify "in press" manuscripts. The final sample included 399 studies published in 153 articles (see Appendix B for a list of articles included). Note that in our review, we were interested in studies that compared different levels of power (i.e., compared high and/or low power to a control condition, or high and low power to each other). We did not consider research that examined power distance (e.g., Lian, Ferris, & Brown, 2012) or power at the institutional level (e.g., Casciaro & Piskorski, 2005).

Subsequently, we categorized the studies based on their experimental designs (see Fig. 1). We distinguish between "three-cell designs" (studies using three experimental conditions) and two different types of "two-cell designs" (studies using two experimental conditions). We find that 68 studies (17.0%) used three-cell designs comparing both high and low power to a control condition (i.e., HP vs. C vs. LP). Such designs have the advantage that they not only give insight into whether there was a difference between high and low power but the presence of a control condition gives insight into the directionality of an effect (Mullen & Monin, 2016; Shadish, Cook, & Campbell, 2002).

The remaining 331 (83.0%) studies use one of two different types of two-cell designs. One type of two-cell design "focuses" on assessing the effects of either high power (i.e., HP vs. C) *or* low power (i.e., C vs. LP) relative to a control condition. We refer to these designs as "focus designs." Focus designs were used in 74 (18.6%) of the studies in our sample. One disadvantage of focus designs is that they do not provide reliable insight into the counterfactual of what would have happened had the other power condition been included (Schmid Mast, Jonas, & Hall, 2009).

The second type of two-cell design compares high power to low power (i.e., HP vs. LP) and was used in the remaining 257 (64.4%) of studies. We refer to such designs as "donut designs" to reflect the fact that "they are missing a crucial element in the middle" (Mullen & Monin, 2016, p. 368). Donut designs have the disadvantage of making directional attribution impossible since it is unclear whether the observed effect was driven by the high- *or* low-power condition (or both).

A more systematic examination of focus and donut designs provides insight into whether high or low power is studied more frequently. First, if there is indeed a greater emphasis on studying powerfulness, we should observe a relatively greater percentage of high-power focus designs (i.e., HP vs. C) than low-power focus designs (i.e., LP vs. C). Our findings are consistent with this idea: of the studies that compared only *one* of the power conditions to a control condition, 95.9% (71 studies) focused on high power, whereas only 4.1% (3 studies) studied low power.

2.1.3. Effect attributions in past studies

A second indicator that research has largely focused on understanding the powerful would be a tendency to conclude that high power is the dominant causal force behind power's extensive effects. Such conclusions are likely reflected in the way effects have been attributed in donut-design studies (i.e., HP vs. LP), which leave the directionality of an effect unclear (Mullen & Monin, 2016). To test this, we content-analyzed the 257 studies[2] using donut designs to assess how the effects in these studies were attributed. Specifically, we coded the individual study discussions by whether the mean difference between high and low power was interpreted as a consequence of experiencing high power (e.g., "high power reduced persuasion to strong arguments"), as a consequence of being low in power (e.g., "these findings show […] that powerlessness leads to metastereotyping"), whether an equal attribution was made (e.g., "there was a significant difference in deception between both [power] conditions"), or whether the study discussion did not attribute the effect to any of the power conditions.

In line with the previous analyses, we found that more than half of the studies (52.5%) attributed their outcomes to high power – even though effect directionality cannot be reliably inferred from such designs (see Fig. 2). The remaining studies either attributed their effects to low power (6.2%), attributed their effects equally to both high and low power (28.1%), or did not attribute the effect to either power condition (13.2%).

Although we conducted the analyses above at the individual study level, similar patterns emerge at the paper level. Of the 153 papers included in our sample, less than a third (48 articles; 31.4%) included at least one study that systematically compared a low-power condition to a control condition (i.e., used either a "HP vs. C vs. LP" design *or* a "C vs. LP" design) which would have provided insight into the relative contribution of low power to an observed effect. Thus, more than two thirds of the articles analyzed may not allow drawing reliable conclusions about the consequences of low-power states.

[2] Fifteen studies did not have an individual study discussion and could thus not be coded. The coded sample consisted of 242 studies.

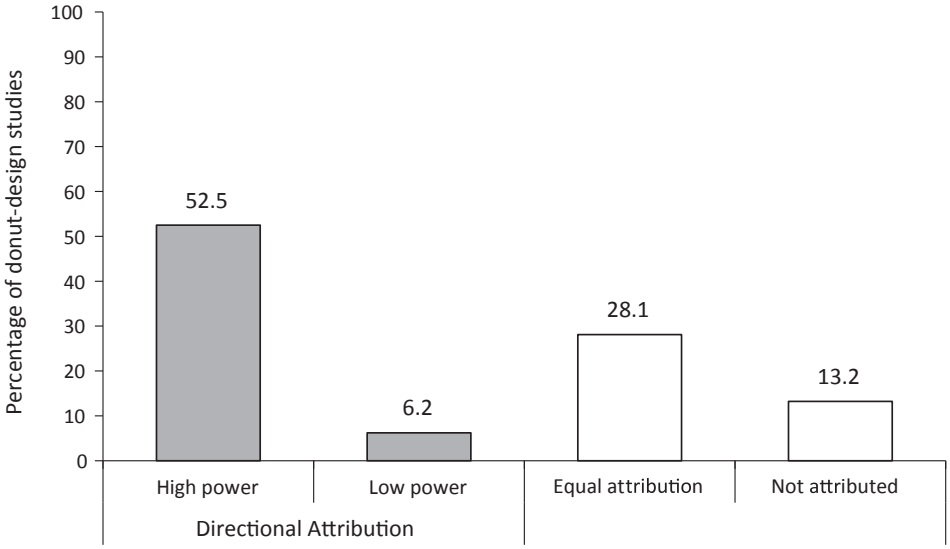

Fig. 2. Effect attributions in studies using donut designs.

Overall, these analyses suggest that social power research centers around high power. We observed this preoccupation with powerfulness in theorizing (i.e., reviews on social power contain more references to high power than low power), study designs (most focus design studies tested the effect of powerfulness), and causal attributions (in more than half of the studies using donut designs, effects were attributed to high power). While there are good reasons to study powerfulness, our quantitative review of the literature shows that we have a limited understanding of individuals who are low in power.

2.2. Why should we study low-power individuals?

The lack of a systematic investigation of low power as a state may have negative implications for the study of social power for several theoretical, methodological, and practical reasons. Theoretically, it is important to study low power because most popular theories of social power are based on linearity assumptions, according to which the consequences of high power and low power represent opposite ends of a linear continuum (Guinote, 2007; Keltner et al., 2003; Magee & Smith, 2013). Consider the often-cited approach-inhibition theory of power (Keltner et al., 2003). This theory posits that powerfulness leads to the activation of the behavioral approach system, a neuropsychological system that is believed to regulate behavior related to safety, sex, food, aggression, and attachment. The same theory proposes, "for complementary reasons, the lack of power should be associated with increased inhibition" (Keltner et al., 2003, p.269). Inhibition (here referring to the Behavioral Inhibition System) relates to an alarm-threat system that is activated by punishment, uncertainty, and threat. The approach-inhibition theory of power states that these two underlying behavioral systems are complements and represent opposite ends of a continuum that linearly maps onto the high/low-power continuum.

In contrast to this assumption, past research on approach and inhibition argues that the two systems represent distinct structures in the nervous system and should be presumed to be orthogonal forces (Carver & White, 1994; Gray, 1987). Thus, the idea that high power activates the behavioral approach system does not automatically imply that low power leads to behavioral inhibition. This may have contributed to the emergence of findings that are inconsistent with this theory (Anderson & Brion, 2014; Galinsky et al., 2015; Guinote & Vescio, 2010). For example, powerful people tend to engage in more abstract information processing than low-power people (e.g., Magee, Milliken, & Lurie, 2010; Smith & Trope, 2006). Yet, the approach-inhibition theory of power cannot easily explain why the activation of the behavioral inhibition system would lead to greater systematic processing among low-power individuals (for a more detailed discussion and additional examples, see Magee & Smith, 2013).

Placing more emphasis on understanding the psychology of low power is also important from a methodological perspective. As our review has shown, the literature is dominated by studies that use donut designs (HP vs. LP) in which the observed effects are attributed to powerfulness. In more than half of these cases, effects are attributed to the powerful even though the use of donut designs makes it challenging to infer which power condition was responsible for the effect. Thus, effects previously attributed to high power may in fact be a consequence of low power, which would only become evident if one does not automatically assume that powerfulness was the driving causal force. In addition, studies that used high-power focus designs (HP vs. C) do not provide much insight into the behavior of low-power individuals. While studying powerful people is not problematic in and of itself, our analyses show a significant proportion of social power research cannot tell us much about the consequences of having little power.

Finally, there are practical reasons to study low-power individuals, as lacking power tends to be a more common psychological state than feeling powerful. For example, most animal and human power hierarchies tend to be pyramid shaped such that those at the bottom are more abundant than those at the top (de Waal, 2007; Magee & Galinsky, 2008). Social inequality across the world is also on the rise (OECD, 2011), leading to a higher number of individuals that control few resources. In addition, a recent study that observed people in everyday situations over several days found that it is more likely for people to find themselves in low-power than high-power positions (Smith & Hofmann, 2016). Thus, by focusing research efforts on those who are powerful, emerging theories may be limited in their predictive validity to a narrow subset of people.

To address these shortcomings, we devote the remainder of the paper to developing a theoretical account of the consequences of experiencing low power by conceptually separating low from high power.

3. The psychology of low power

In our conceptualization of low power, we revisit micro-sociological research suggesting that human relationships are formed through a process of negotiated interactions between interdependent individuals who are trying to maximize gains through the exchange of resources (Blau, 1964; Coleman, 1994; Emerson, 1962, 1976; Homans, 1961;

Kelley & Thibaut, 1978; Molm, Peterson, & Takahashi, 1999). Although current research on social power often refers to these conceptualizations, it does not go much further than stating that high-power individuals have more control over resources than low-power individuals (e.g., Anderson & Brion, 2014, p. 3; Magee & Galinsky, 2008, p. 361; Sturm & Antonakis, 2015, p. 139). However, one direct implication of the idea that there are differences in the amount of resources individuals control is that, whenever two people interact with the purpose of exchanging valued resources, there is a varying amount of asymmetry between them. Although asymmetry can be continuous, here we focus on the distinction between asymmetric relationships and symmetric relationships (Blau, 1964; Hall, 1985; Zitek & Tiedens, 2012).

Asymmetric relationships are characterized by "more" and "less" such that one individual controls, or has access to, more resources than another (Hall, 1985). In contrast, symmetric relationships involve interactions between individuals that have an equal amount of resources. Unequal-power relationships constitute one inherently asymmetric type of social relation, because one individual tends to have a disproportionate amount of influence over another individual (March, 1955; Emerson, 1962). An example of such a relationship within the context of an organization is the relationships between a supervisor and his/her subordinate. In contrast, equal-power relationships are inherently symmetric. In equal-power relationships, each individual controls a similar amount of resources and exerts the same amount of influence (Blau, 1964). An example of an equal-power relationship in a work context is the relationship between two peers, or colleagues.

Our quantitative review of the social power literature revealed that the focus on explaining the consequences of powerfulness has led to comparisons between one state of an unequal-power relationship (high power) to *either* another state of an unequal-power relationship (low power) *or* states and situations where power differences are absent (control conditions). Such comparisons are feasible in terms of deriving insights for low power if one can reliably assume that situations of high power, equal power, and low power operate on a linear continuum in which equal power lies "in the middle" between high and low power. We are not claiming that there are no reasons to make such an assumption. In many situations, high-, equal-, and low-power individuals vary along meaningful dimensions, such as the amount of agency they enjoy and in their ability to influence others. Because of these differences, high- and low-power individuals should, at times, experience their positions in opposite ways and, in turn, behave differently. Judgments and behaviors directly emerging from differences between high and low power should result in linear effects (e.g., HP > C > LP), whereby inferences for low power linearly follow from high power.

Although there are some reasons to expect linear differences across levels of power, we propose that the very nature of being in an unequal-power relationship – irrespective of one's level of power – can lead to similar experiences for high- and low-power individuals compared to individuals in an equal-power relationship. Fiske's (1992) Unified Theory of Social Relations suggests that all aspects of social relations can be described by a finite number of elementary models. Thus, depending on the nature of a relationship, different schemata, rules, and grammars become salient that influence how people in such relationships think, feel, and act. Directly building on frameworks of social exchange (Blau, 1964; Coleman, 1994; Emerson, 1976; Homans, 1961; Kelley & Thibaut, 1978) and the distinction between symmetric and asymmetric relationships (Blau, 1964; Hall, 1985; Zitek & Tiedens, 2012), we propose that certain schemata governing unequal-power relationships fundamentally differ from those of equal-power relationships. Specifically, we argue that self-interest is more salient in unequal-power (relative to equal-power) relationships, as individuals are more likely to enter and maintain unequal-power relationships with the purpose of furthering their own goals (Coleman, 1994). Heightened self-interest salience, in turn, has extensive consequences for behavior of individuals who are part of unequal-power (vs. equal-power) relationships, such as an increased salience of instrumental goals, the formation of competitive attitudes, and the emergence of exchange rules. One important implication of the idea that unequal-power relationships are governed by fundamentally different schemata than equal-power relationships, is that both high- and low-power individuals may share common experiences which will lead to comparable judgments and behaviors in a specified set of situations. Conceptually, this means that power may also lead to curvilinear effects (e.g., HP > C < LP), whereby inferences for low power no longer linearly follow from high power. Note that in making these arguments, we constrain our theoretical model to the domain of relationships within (or between) organizations, such as the examples given above. In the General Discussion, we discuss in more depth whether and how our model might apply to other types of relationships (e.g., family relationships).

In the following, we first review some of the high/low-power differences past research has relied on and discuss the kinds of behaviors for which we can expect linear effects. Next, we develop arguments for when and why high and low power may lead to similar experiences and behavioral consequences. Finally, we report an experiment to illustrate that although low-power individuals sometimes behave in an opposite way to high-power individuals (thereby producing a linear effect), at other times they behave in a similar way (thereby producing a curvilinear effect).

3.1. How low power is different from high power

Exchange theories highlight that many interpersonal interactions take place between interdependent individuals who are each trying to maximize gains through the exchange of mutually-beneficial resources (Blau, 1964; Emerson, 1976; Homans, 1961; Kelley & Thibaut, 1978). In such interactions, the amount of control an individual has over resources varies, with high-power individuals controlling more resources valuable to other (less powerful) individuals. Take the employment relationship as an example, in which an employee controls effort, skill, and time that she exchanges with an employer who controls money, security, and advancement possibilities the employee values. Typically, the employer controls more valuable resources than the employee (although in a few cases this may not be true). This asymmetry in control over valuable resources leads to several differences between high- and low-power individuals, relative to one another and relative to individuals who control an equal amount of resources.

One difference that directly follows from asymmetries in control is the amount of *agency* an individual has. Agency refers to an individual's discretion, or freedom, to act in a self-directed and autonomous way (Bakan, 1966; Sturm & Antonakis, 2015). To act in a self-directed way, having more resources is useful because goal attainment requires resources and more resources require less resource pooling and coordination among actors (Foa & Foa, 2012; Sahlins, 1965; Yamagishi & Cook, 1993). Consequently, because individuals high in power control a lot of valued resources, they should exhibit relatively higher levels of agency compared to individuals low in power and individuals in situations without power differences (Rucker, Galinsky, & Dubois, 2012). In contrast, individuals who are low in power are dependent on others' resources to achieve their goals and, therefore, have fewer opportunities to act in self-directed ways, relative to individuals high in power and individuals in situations without power differences. Several studies provide support for the idea that high- and low-power individuals differ in their tendency to behave agentically (Galinsky, Gruenfeld, & Magee, 2003; Magee et al., 2007). One study, for example, found that participants who recalled an experience of high power subsequently were more likely to make the first offer in a negotiation than participants who recalled a low-power experience (Magee et al., 2007). The idea that power is positively related to agency suggests that we can expect high- and low-power individuals to behave in opposite ways for a broad range of agentic behaviors, such as the extent to which people act upon

their dispositions (Guinote, Weick, & Cai, 2012), express their opinions authentically (Kraus, Chen, & Keltner, 2011), take initiative in competitive social interactions (Magee et al., 2007) and change their environment to fit their needs (Galinsky et al., 2003).

Another way in which high- and low-power individuals differ relative to each other and to individuals in situations without power differences is by the amount of *social influence* they can exert. Influence refers to the ability to change other people's thoughts and behavior (Fiske, 2010). Although the ability to influence others can emerge from many sources (e.g., argumentative skill, liking, reciprocity), asymmetric control over valuable resources necessarily affords one the discretion and means to influence other's actions (Tost, 2015). For example, valuable resources can include money which allows one to reward an individual for compliance; it can include legitimate authority which obligates others to accept one's influence; or it can include expertise which gives one the ability to change the cognitive structures of others (French & Raven, 1959). Consequently, the amount of social influence one has over others should be positively related to one's relative power. Indeed, one study found that participants given the ability to reward and punish another individual attempted to influence that individual more frequently than those who did not have this ability (Kipnis, 1972). Powerholders were also more likely to influence their subordinates to confirm their expectancies about themselves than were subordinates (Copeland, 1994). Furthermore, another study found that the outcome of a dyadic decision-making task was more consistent with the initial decision of the individual who was given control over resources (the ability to allocate $10 between him/herself and the partner) than the individual who had no control over resources. In other words, the high-power individual had more influence over the decision of the low-power individual than vice versa (Anderson & Berdahl, 2002). Collectively, these studies imply that the amount of social influence an individual can exert is directly tied to the amount of resources one controls relative to others. Thus, individuals high (low) in power should exert more (less) influence on others than those with an equal amount of power. Consequently, we can expect to observe linear effects of power for a broad range of behaviors related to social influence, such as the extent to which people obey others (Milgram, 1963), can persuade others (Lammers, Dubois, Rucker, & Galinsky, 2013), affect collective decision-making processes (Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994), and get selected as leaders (Bass, 2008).

Although we have highlighted two important ways in which high- and low-power individuals differ from each other and from those in situations without power differences, there may be other such differences. For example, the very nature of being in an unequal-power relationship implies that high and low power individuals occupy different relative positions in an implicit or explicit rank ordering. Similar to time, which is typically represented on a horizontal dimension from left to right (Boroditsky & Ramscar, 2002), people construe power as vertical space ranging from the bottom to the top (Giessner & Schubert, 2007). Indeed, leaders *super*vise their employees and are higher *up* in the hierarchy, while employees are *sub*ordinates and lower *down* in the hierarchy. In addition, having more rather than less power can come with more responsibility for the outcomes of others who depend on resources (Sassenberg, Ellemers, & Scheepers, 2012; Torelli & Shavitt, 2010; Zhong, Magee, Maddux, & Galinsky, 2006). Irrespective of the dimension on which high and low power differ, however, the resulting psychological experiences and subsequent behaviors will likely follow a linear pattern.

3.2. How low power is similar to high power

We believe that there are also notable similarities between high- and low-power individuals, relative to individuals who are not in an unequal-power relationship. Unequal-power relationships (e.g., those between a supervisor and a subordinate) can be characterized as relatively high in self-interest while equal-power relationships (e.g., those between colleagues) are relatively low in self-interest. Specifically, the type and structure of a relationship an individual is in serves as a contextual cue that can make salient different knowledge structures, behavioral scripts, expectations, and goals (Fiske, 1992). The spreading activation account of memory (Anderson, 1983) suggests that being in an unequal-power (vs. equal-power) relationship should make power differentials more evident and consequentially increase the accessibility of other power-related cognitions, including those associated with gaining and maintaining power. This proposition is also in line with past research showing that power is a mental construct that can be activated by contextual cues (Anderson & Galinsky, 2006; Bargh, Raymond, Pryor, & Strack, 1995; Galinsky et al., 2008, 2015), and that both high- and low-power-related cues can activate the same underlying mental construct (Smith & Trope, 2006).

Early formulations of social exchange theory highlight how cognitions and motives related to self-interest are salient in resource exchanges. Accordingly, individuals enter and maintain relationships in which potential rewards (e.g., satisfaction and gratification) from the interaction exceed the expected costs (e.g., effort, opportunity costs; Thibaut & Kelley, 1959). When rewards of a relationship decrease, or costs increase, or when alternative relationships offer better outcomes, people are expected to exit exchanges. The tendency to focus on rewards and costs as well as who controls them, is particularly pronounced in unequal-power relationships. In these interactions, because resources are distributed unequally and the interaction partners are aware of this, the focus shifts to improving individual outcomes accruing from the interaction either by gaining access to previously unattainable resources in the case of low-power individuals, or by strategically sharing resources to increase the other person's commitment to the relationship in the case of high-power individuals (Thibaut & Kelley, 1959, p.111). Being in an unequal-power relationship incentivizes individuals to focus on gaining and maintaining their control over resources, which should increase the cognitive salience of self-interest. The increased salience of self-interest, in turn, may elicit behaviors directed at improving individuals' own outcomes (Thibaut & Kelley, 1959). For instance, both high- and low-power individuals frequently engage in ingratiation behaviors (such as flattery, self-enhancement, and modesty) to increase their attractiveness as an interaction partner (Jones, 1964; Jones, Gergen, & Jones, 1963; Jones, Gergen, Gumpert, & Thibaut, 1965; Stires & Jones, 1969). Such behaviors, however, are less common among equal-power relationships (e.g., Bohra & Pandey, 1984).

In contrast, different (and sometimes less strong) rules, scripts, and goals should be made salient by being in relationships in which power is balanced (i.e., equal-power relationships). In such relationships, self-gain concerns should be relatively less pronounced as there may be strong normative expectations that discourage self-enhancing motives and the expectations that come with it. When power is balanced, people should treat others as equals, be more concerned about the welfare of others, and give benefits to others non-contingently (Fiske, 1992). For example, people react negatively to others who engage in self-interested behavior (e.g., making a request for a benefit) when they are in an equal-power relationship (e.g., between peers; see Clark & Mills, 1979). The reason for such negative reactions is that the pursuit of self-interest in power-balanced relationships creates inequalities and discomfort that would have to be repaid (e.g., Walster, Walster, & Berscheid, 1978). Although any type of relationship can be more or less self-interested, the micro-sociological theories on power and social exchange reviewed above suggest that unequal-power relationships are characterized by relatively higher self-interest salience when compared to relationships in which power is balanced. Consequently, we propose that the heightened salience of self-interest in unequal-power (vs.

equal-power) relationships may in turn lead to similar perceptions and behaviors for both high- and low-power individuals.[3] We elaborate on these consequences in the following sections.

3.2.1. Unequal-power (vs. equal-power) relationships increase the salience of instrumental goals

One direct consequence of the heightened self-interest salience in unequal-power relationships is that individuals in such a relationship (relative to those in equal-power relationships or other types of relationships) may come to develop a more instrumental attitude toward their social environment. By instrumental we mean the extent to which other social actors are perceived as "useful" towards one's goals (Fitzsimons & Shah, 2008). Because individuals in unequal-power relationships enter these relationships voluntarily and do so for self-gain (Coleman, 1994; Cook & Yamagishi, 1992; Molm et al., 1999), both parties in such a relationship should see the other party as an instrument, or a "means to an end." There is little reason to expect that the average employee is less instrumental than the average employer, or thinks about their relationship in less instrumental ways. An employer likely sees the employee as a provider of labor while the employee sees the employer as a source of income. Instrumental goals should thus be similarly salient to both the employer (high power) and the employee (low power).

There is evidence supporting the idea that individuals in unequal-power relationships view other people as instrumental. For example, one study found that people who recalled being the high-power party in an unequal-power relationship construed their counterpart in a more goal-relevant way than individuals who recalled being in an equal-power relationship (Gruenfeld et al., 2008; Study 1). While this study did not include a low-power condition, there is indirect evidence suggesting that the same goal-relevant construal occurs for both high- and low-power individuals. For instance, social network research suggests that instrumental relations, which focus on the exchange of work-related resources, tend to emerge between two actors in an asymmetrical relationship, while symmetrical relationships tend to focus on social support rather than on access to information and valuable resources (Ibarra & Andrews, 1993). In addition, Pitesa and Thau (2013a) found no notable differences between high- and low-power individuals' tendency to make instrumental decisions.[4] Given that unequal-power relationships (relative to those in equal-power relationships) are entered and maintained for the purpose of gain and that individuals in such relationships tend to have a more instrumental worldview, we should expect similar tendencies among high- and low-power individuals for judgments and behaviors related to instrumental attitudes, such as objectification of the self (Inesi et al., 2014), objectification of other social actors (Gruenfeld et al., 2008), questioning of others' generous acts (Inesi, Gruenfeld, & Galinsky, 2012), and seeing interaction partners as fungible (Nussbaum, 1999).

3.2.2. Unequal-power (vs. equal-power) relationships promote competitive attitudes

Another direct consequence of the self-interest salience in unequal-power relationships is that individuals in such relationships (relative to those in relationships without power differences) may develop more competitive attitudes. People have a tendency to assume that the motives of others resemble their own motives (De Dreu, Koole, & Steinel, 2000; Schelling, 1980; Thompson & Hastie, 1990). Self-interested individuals are thus more likely to assume that others are motivated by self-interest as well, thereby giving rise to competitive attitudes (Deutsch, 1949; Kilduff, Elfenbein, & Staw, 2010). Indeed, individuals who pursue self-interest-related goals reported higher feelings of competition and lower feelings of cooperation than those who pursue collective goals or no specific goals (Mitchell & Silver, 1990).

Because unequal-power relationships cause both high- and low-power individuals to construe their relationship in a more self-interested way, relative to those in relationships without power differences, they are likely to exhibit more competitive attitudes and behavior. Research on dyads and groups provides support for this idea (for a review, see Anderson & Brown, 2010). For example, individuals who were part of small groups with an unequal-power structure (relative to groups with an egalitarian structure) were more likely to report that the others only cared about their own outcomes and that they perceived their interactions to be more competitive. As a consequence, unequal-power groups were less cooperative and achieved lower individual and collective outcomes than equal-power groups (Mannix, 1993). Similar observations were made in negotiations (e.g., Giebels, De Dreu, & Van De Vliert, 2000; Lawler & Yoon, 1996; Mannix & Neale, 1993; McAlister, Bazerman, & Fader, 1986) and economic games (e.g., Sheposh & Gallo, 1973; Tedeschi, Lindskold, Horai, & Gahagan, 1969). For instance, one study found that unequal-power dyads cooperated less in maximizing joint outcomes and focused more on their individual payoffs than equal-power dyads (Mannix & Neale, 1993). Thus, because of the more pronounced competitive attitudes in unequal-power relationships, we should expect both high- and low-power individuals (relative to those in situations without power differences) to exhibit similar tendencies and behaviors in this domain, such as reduced trust (Inesi et al., 2012), less information sharing (Anicich, Swaab, & Galinsky, 2015), fewer concessions in negotiations (Lawler & Yoon, 1996), and lower contributions to public resource pools (Mannix, 1993).

3.2.3. Unequal-power (vs. equal-power) relationships are governed by the rules of exchange

To mitigate the potential negative consequences of self-interest, we propose that over time, people in unequal-power relationships agree on rules and norms that govern the exchange of resources. Social psychological research suggests that in relationships that are formed to exchange things (such as goods, services, and other resources; see Foa & Foa, 2012), benefits are given under the assumption that comparable benefits will be returned as repayment (i.e., quid pro quo; see Clark & Mils, 1993; Goffman, 1961). The receipt of a benefit incurs a "debt" that must be balanced (Clark & Mills, 1979). Because people enter unequal-power relationships to further their own self-interest (Coleman, 1994; Cook & Yamagishi, 1992; Molm et al., 1999), they expect to be repaid for the resources they invested, as they would have not otherwise committed to the relationship. For example, an employer is likely unwilling to pay a salary to an employee who does not get the job done and an employee would not show up for work in the absence of appropriate compensation. In relationships in which self-interest and the subsequent emergence of exchange norms is less pronounced, on the other hand, benefits are given non-contingently without expectations of repayment (Clark & Mills, 1979). Consistent with the idea that "quid pro quo" exchange rules are more likely to apply to power-unequal relationships, powerful individuals evaluated unilateral benefits received from a low-power individual more negatively than from individuals in power-equal relationships (Inesi et al., 2012). Another study showed that people in equal-power relationships were more likely to give token gifts in a context where the other person did not have the opportunity to reciprocate than people in unequal-power relationships

[3] Note that heightened self-interest in unequal-power relationships may not always translate into similar behaviors for both high- and low-power individuals. High- and low-power individuals may have differential goals (e.g., such as approaching gains versus avoiding losses; see Keltner et al., 2003) and heightened self-interest may facilitate the pursuit of these differential goals. The purpose of our framework is to theoretically account for the *possibility* that high and low power can lead to similar experiences and outcomes and we believe this to be particularly the case in the domains specified in our model.

[4] Although in another set of studies (Pitesa & Thau, 2013b) the powerful were more likely to recommend others to make investment decisions that benefitted themselves, these decisions were confounded with higher levels of risk-taking and high power was not contrasted with low power.

(Lawler & Yoon, 1996). Based on this logic, we should be able to observe similar outcomes for both high- and low-power individuals (relative to individuals in situations without power differences) for behaviors that are related to this exchange rule, such as how people respond to favors (Walster et al., 1978), whether and how much they are willing to help another person (Clark, Ouellette, Powell, & Milberg, 1987), and how people react to withheld benefits (Williamson, Clark, Pegalis, & Behan, 1996).

Another implication of the heightened self-interest salience in unequal-power relationships is that not only are benefits rendered with an expectation of returns, but it is also more likely that returns are expected within a specified time frame and that delays of returns are tolerated less than in equal-power relationships. If a request for help by another individual is immediately followed by a counter-request, the debt created by the original request is paid off. In unequal-power relationships, an immediate return request would be a quid pro quo. In contrast, if a counter-request is delayed in time, it is less likely to be connected to the initial request and perceived as a way to extract free help (Aggarwal, 2004). The opposite logic applies to equal-power relationships where self-interest is relatively less salient. For example, research on communal relationships – relationships in which equality and the welfare of others are primary concerns and self-interest is inherently less important – suggests that an immediate counter-request would be seen as repayment and thus violate people's normative expectations (Clark, 1981). A delayed repayment is more likely to be seen as an expression of genuine need and thus complies with communal norms (Aggarwal, 2004). Because unequal-power relationships more likely follow the rules of exchange relationships than equal-power relationships, we expect individuals who are part of unequal-power relationships to anticipate more immediate repayment and to be less tolerant of delays than individuals in equal-power relationships. Peers, and individuals in other equal-power relationships, however, are not expected to repay the value they receive immediately (Blau, 1964; Clark, 1981). They should therefore be more tolerant of delays (Clark, 1981).

Although we have highlighted some of the consequences that directly follow from the different rules governing unequal- and equal-power relationships, there may be additional implications that follow from the distinction presented here. For example, unequal- and equal-power relationships may vary in whether rewards are divided according to each person's input or according to needs, whether people keep track of each other's contributions, and whether people respond to other's emotional states (Aggarwal, 2004). Our theoretical framework is summarized in Table 1.

3.3. Predicting the consequences of low power

Our theorizing suggests that although high and low power individuals differ from each other in many ways, being part of an unequal-power relationship – irrespective of one's level of power – can lead to fundamentally different psychological experiences and behaviors than when power differences are absent. Thus, outcomes directly tied to differences in the resources controlled by high- and low-power individuals, such as judgments and behaviors related to agency and social influence, should lead to linear effects (e.g., HP > C > LP). In this case, low power should linearly follow from high power. For example, the extent to which an individual expresses her opinion first in a social setting will (amongst other things) depend on her level of power. The more (less) powerful the individual is, the more (less) agentically she can behave, and the more (less) likely she will express her opinion first. In contrast, outcomes directly tied to differences between unequal- and equal-power relations, such as judgments and behaviors related to instrumental goals, competitive attitudes, or rules of exchange, should lead to curvilinear effects (e.g., HP > C < LP). For example, the extent to which an individual objectifies another social actor will (amongst other things) depend on the level of instrumentality of a relationship. Because individuals in unequal-power relationships tend to be more instrumental than those in equal-power relationships, both high- and low-power individuals should be more likely to objectify their counterpart relative to an individual in a power-equal relationship. The logic is summarized in Fig. 3.

3.4. An empirical demonstration: action orientation and objectification

To provide an initial test of our framework, we conducted an experiment examining the effects of social power on action orientation and objectification. Our framework states that action orientation is directly related to the amount of agency that is afforded by one's power position. The more (less) power one has, the more (less) freedom one enjoys, and the more (less) action one can take. To test this prediction, we chose to conceptually replicate a study in which only a high-power condition was compared to a control condition and the consequences of low power are thus unclear (Magee et al., 2007; Study 2). In this study, action orientation was operationalized as the propensity to speak first in a social setting. In line with our framework, we should be able to expect an individual's propensity to speak first to be positively and linearly related to power, such that high-power individuals would be the most likely to speak up while the low-power individuals would be the least likely to speak up.

Table 1
Similarities between high power and low power and their consequences.

Similarities	Logic	Implications for low and high power	Example consequences of low and high power (relative to equal power)
Instrumentality	Heightened self-interest salience in unequal-power relationships, relative to equal-power relationships, activates instrumental goals and behaviors associated with these goals	Low- and high-power individuals are more instrumental in their attitudes and behavior relative to individuals in situations without power differences	■ More objectification of the self ■ More objectification of others ■ More instrumental attributions about others' behaviors ■ Higher perceived fungibility of others
Competitiveness	Greater self-interest salience in unequal-power relationships evokes more competitive attitudes and behaviors associated with these attitudes, when compared to equal-power relationships	Low- and high-power individuals perceive and enact their interactions in a more competitive way relative to individuals in situations without power differences	■ Reduced trust ■ Less information sharing ■ Reduced integrativeness of negotiations ■ Less cooperation in economic games ■ Lower contributions to public goods
Rules of exchange	Due to heightened self-interest in unequal-power relationships, rules of exchange are more likely activated in these relationships when compared to equal-power relationships	Low- and high-power individuals are more likely to assume that benefits given are repaid than individuals in situations without power differences	■ More negative reactions to favors ■ Reduced willingness to help ■ More negative reactions to withheld benefits ■ Increased speed of reciprocity ■ Lower tolerance of delays

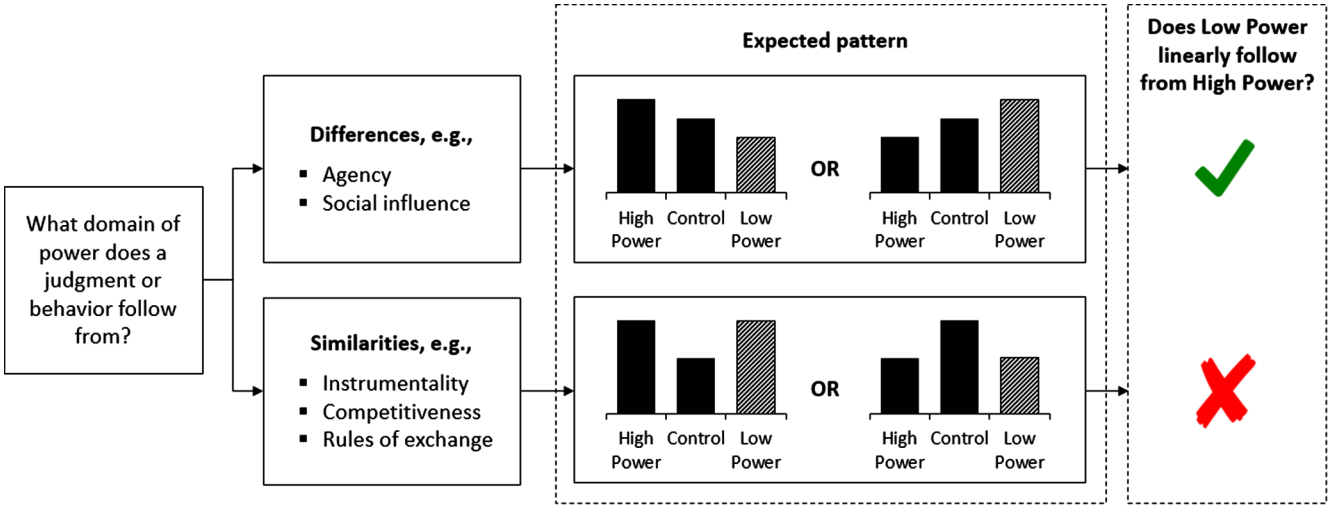

Fig. 3. Predicting the consequences of low power.

Objectification, on the other hand, involves treating other people as "instruments," or seeing them as a means to an end (Fredrickson & Roberts, 1997). More specifically, objectification is a social perceptual process that involves "the splitting of a whole person into parts that serve specific goals and functions for the observer" (Gruenfeld et al., 2008, p.111). Prior research investigating the effect of power on objectification has found that being powerful leads to increased objectification of social targets (Bargh et al., 1995; Gruenfeld et al., 2008; Inesi et al., 2014; Kipnis, 1972). This finding has been explained by the idea that power activates approach tendencies that "increase approach appraisals of instrumental objects, including other people" (Gruenfeld et al., 2008, p.112). This logic suggests that people lower in power should exhibit reduced approach tendencies and should therefore be less inclined to objectify others. However, none of the 13 studies on power and objectification we identified systematically compared the effect of low power to a situation that does not involve power differences. Thus, although existing research suggests that high power increases objectification and low power should thus decrease objectification, little systematic research on the relationship between low power and objectification has been conducted.

In contrast to extant research, our framework suggests that high- and low-power states may in fact have comparable effects on an individual's tendency to objectify others. According to the definition above, objectification involves separating out aspects of a person that can advance one's goals. This implies that objectification is particularly likely under conditions in which social actors are appraising their social environment through the lens of self-interest. We argued earlier that, as a consequence of the heightened salience of self-interest when being in an unequal-power relationship, both high- and low-power individuals tend to construe and enact their relationships in more instrumental ways than people in an equal-power relationship. Picture the relationship between a supervisor and her subordinate. Because the supervisor's focus in this relationship is instrumental in nature (e.g., completing a project), she is more likely to focus on aspects of her subordinate that serve her goal (e.g., the subordinate's analytical skills). Similarly, because the subordinate's goal in the relationship is similarly instrumental in nature (e.g., earning a salary), the subordinate is likely to construe the supervisor as a means to an end (e.g., a source of income). In contrast, in equal-power relationships (e.g., between peers) where individuals are relatively less self-interested and instrumental goals therefore less salient, individuals are less likely to appraise others in terms of their goal-enhancing value. In sum, because instrumental goals are more salient in unequal-power relationships due to the purposive nature of those relationships and because objectification involves appraising others in terms of their instrumental value (Fredrickson & Roberts, 1997; Gruenfeld et al., 2008), we expect both high- and low-power individuals to objectify their relational counterpart to a greater extent than individuals in a power-equal relationship.

To test these predictions, we conducted an experiment employing a widely-used experiential power manipulation and subsequently measured people's tendency to speak up in a social setting (action orientation) or objectify another individual. In both cases, the original published studies left it unclear how someone in a low-power position would respond. To enhance confidence in the study results, we ran the same study design across two highly-powered samples recruited from two different subject pools. In addition, the sampling and analysis procedure for Sample 2 was preregistered before data collection. We report all measures, studies, and data exclusions.

3.4.1. Methods

3.4.1.1. Sample 1

The first sample consisted of 900 participants[5] recruited from Amazon Mechanical Turk (mean age = 35.49, *SD* = 1.49; 49.3% female). Participants received US$1.00 in exchange for their participation. Sample size was determined in advance based on a pretest.

3.4.1.2. Sample 2

The second sample consisted of 900 participants recruited from Prolific Academic (mean age = 35.01, *SD* = 11.55; 46.7% female). Participants received £0.80 for their participation. Sample size, study design, hypotheses, dependent measures, and analyses for this sample were pre-registered on *Open Science Framework* before data collection.[6]

Across both samples, participants were randomly assigned to one of the six cells of a 3 (power: high power vs. control vs. low power) × 2 (dependent measure: action orientation vs. objectification) between-subjects design. Thus, each experimental cell had approximately 150 observations.

[5] Because the availability of relevant personal memories of different power episodes can enhance the effectiveness of recall manipulations (Lammers, Dubois, Rucker, & Galinsky, 2017), participants of Sample 1 first had to pass a "screening survey" in order to be able to participate in the study. The screening survey asked participants whether they had ever been a superior, subordinate, and a peer in their current or past job. Participants who responded "no" to any of these questions were ineligible to participate. Thus, all 900 participants in Sample 1 had relevant experiences to rely on during the power induction.

[6] The pre-registration can be accessed here: https://osf.io/yk3u8/?view_only=59ba572717c34ae8aae5bb42fcd8b6f6.

3.4.1.3. Power manipulation

Participants were randomly assigned to one of three power conditions in which they encountered a short writing task developed by Gruenfeld et al. (2008, Study 1a). We directly adopted the high-power and control manipulations from past research but added a low-power manipulation to the design. In the *high-power condition*, participants described a professional relationship in which their work partner reports directly to them or in which they have power over their work partner:

> *Please think of a professional relationship you have, or have had in the past, that is hierarchical. The relationship should be one in which your work partner either reports directly to you or in which you have disproportionate power or control (or both) over him/her. Briefly describe your partner, and the nature of your relationship in the space below.*

In the *control condition,* participants were asked to describe a professional relationship in which power was equal:

> *Please think of a professional relationship you have, or have had in the past, that is not hierarchical. The relationship should be one in which you and your work partner do not report directly to one another, nor does one of you have disproportionate power or control over the other. Briefly describe your partner, and the nature of your relationship, in the space below.*

Because the original study design only included a high-power and a control condition, we developed a *low-power condition* by mirroring the logic and wording of the high-power condition. Specifically, participants described a professional relationship in which they report directly to their work partner or one in which their work partner has power over them:

> *Please think of a professional relationship you have, or have had in the past, that is hierarchical. The relationship should be one in which you report either directly to your work partner or in which your work partner has disproportionate power or control (or both) over you. Briefly describe your partner, and the nature of your relationship, in the space below.*

Next, participants were randomly assigned to complete one of two dependent measures. Half of the participants responded to items measuring their action orientation, and the other half responded to items measuring their tendency to objectify.

3.4.1.4. Action orientation

In line with past research, we operationalized action orientation as "…the inclination to assert oneself first in an interaction" (e.g., Magee et al., 2007; Experiment 2). To measure participants' tendency to move first, participants rated the extent to which they would be inclined to speak-up first in three different scenarios (Sample 1: $\alpha = .85$, Sample 2: $\alpha = .80$). The scenarios were: "You are in a brainstorming meeting with the person you just wrote about. How likely would you be to make the first suggestion?", "You and the person you just wrote about are on a conference call to make a decision about a product launch. How likely would you be to share your opinion first?", and "You and the person you just wrote about are responsible for deciding on the agenda of your next department meeting. How likely would you be to share your ideas for the agenda first?" In all three scenarios, participants reported their tendency to move first on a 7-point scale ranging from 1 (*not at all likely*) to 7 (*very likely*).

3.4.1.5. Objectification

Participants assigned to complete the objectification measure rated the extent to which they objectified the work partner they described. We used the established ten-item objectification scale previously used by Gruenfeld and colleagues (Sample 1: $\alpha = .67$; Sample 2: $\alpha = .69$). Example items include: "I think more about what this person can do for me than what I can do for him/her", "I tend to contact this person when I need something from him/her" and "This relationship is important to me because it helps me accomplish my goals." The items were measured on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

3.4.1.6. Sense of power

Next, participants were asked to think back to the relationship they described and indicated how powerful they felt in this relationship. We used the sense of power scale developed by Anderson, John, and Keltner (2012; Sample 1: $\alpha = .91$; Sample 2: $\alpha = .92$). Example items include: "In the relationship with this person, I can get him/her to do what I want", "In the relationship with this person, I think I have a great deal of power" and "In the relationship with this person, I can get him/her to listen to what I say." Participants responded using a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Finally, participants provided their demographic information and were debriefed.

3.4.2. Results

3.4.2.1. Manipulation check

The power manipulation was successful. Participants in the high-power condition reported feeling more powerful (Sample 1: $M = 5.75$, $SD = 1.06$; Sample 2: $M = 5.31$, $SD = 1.22$) than participants in the control condition (Sample 1: $M = 5.08$, $SD = 0.81$, $t(1, 897) = 7.46$, $p < .001$, $d = .71$; Sample 2: $M = 5.03$, $SD = 0.98$, $t(1, 897) = 2.81$, $p = .005$, $d = .25$). Participants in the low-power condition reported feeling less powerful (Sample 1: $M = 4.33$, $SD = 1.37$; Sample 2: $M = 4.20$, $SD = 1.38$) than participants in the control condition (Sample 1: $t(1, 897) = -8.31$, $p < .001$, $d = -.67$; Sample 2: $t(1, 897) = -8.45$, $p < .001$, $d = -.70$), and participants in the high-power condition (Sample 1: $t(1, 897) = -15.58$, $p < .001$, $d = -1.16$; Sample 2: $t(1, 897) = -11.18$, $p < .001$, $d = -.85$).

3.4.2.2. Action orientation

Consistent with past research, we found that participants in the high-power condition were more inclined to assert themselves first in an interaction than participants in the control and low-power conditions. Participants in the high-power condition were more likely to speak first in an interaction (Sample 1: $M = 5.74$, $SD = 1.10$; Sample 2: $M = 5.43$, $SD = 1.24$) than participants in the control condition (Sample 1: $M = 5.25$, $SD = 1.01$, $t(1, 447) = 3.47$, $p = .001$, $d = .46$; Sample 2; $M = 5.13$, $SD = 1.25$, $t(1, 449) = 1.99$, $p = .047$, $d = .24$), and participants in the low-power condition (Sample 1: $M = 4.24$, $SD = 1.53$, $t(1, 447) = 10.57$, $p < .001$, $d = 1.12$; Sample 2: $M = 4.50$, $SD = 1.43$, $t(1, 449) = 6.12$, $p < .001$, $d = .70$). Importantly, providing support for the hypothesized linear effect of social power on action orientation, participants in the low-power condition were less likely to assert themselves first than participants in the control condition (Sample 1: $t(1, 447) = -7.08$, $p < .001$, $d = -.78$; Sample 2: $t(1, 449) = -4.26$, $p < .001$, $d = -.48$). See Fig. 4.

3.4.2.3. Objectification

Based on past research, we expected that participants in the high-power condition would exhibit a higher tendency to objectify their interaction partner than those in the control condition. This is what we found. Participants in the high-power condition were more likely to objectify their work partner (Sample 1: $M = 4.54$, $SD = .77$; Sample 2: $M = 4.43$, $SD = .86$) than participants in the control condition (Sample 1: $M = 3.93$, $SD = .93$, $t(1, 447) = 6.43$, $p < .001$, $d = .71$; Sample 2: $M = 3.81$, $SD = .98$, $t(1, 445) = 6.20$, $p < .001$, $d = .67$). However, departing from prior research and in line with our argument that high and low power can lead to similar effects, participants in the low-power condition were *also* more likely to objectify their work partner (Sample 1: $M = 4.43$, $SD = .78$; Sample 2: $M = 4.55$, $SD = .74$) than participants in the control condition (Sample 1: $t(1, 447) = 5.16$, $p < .001$,

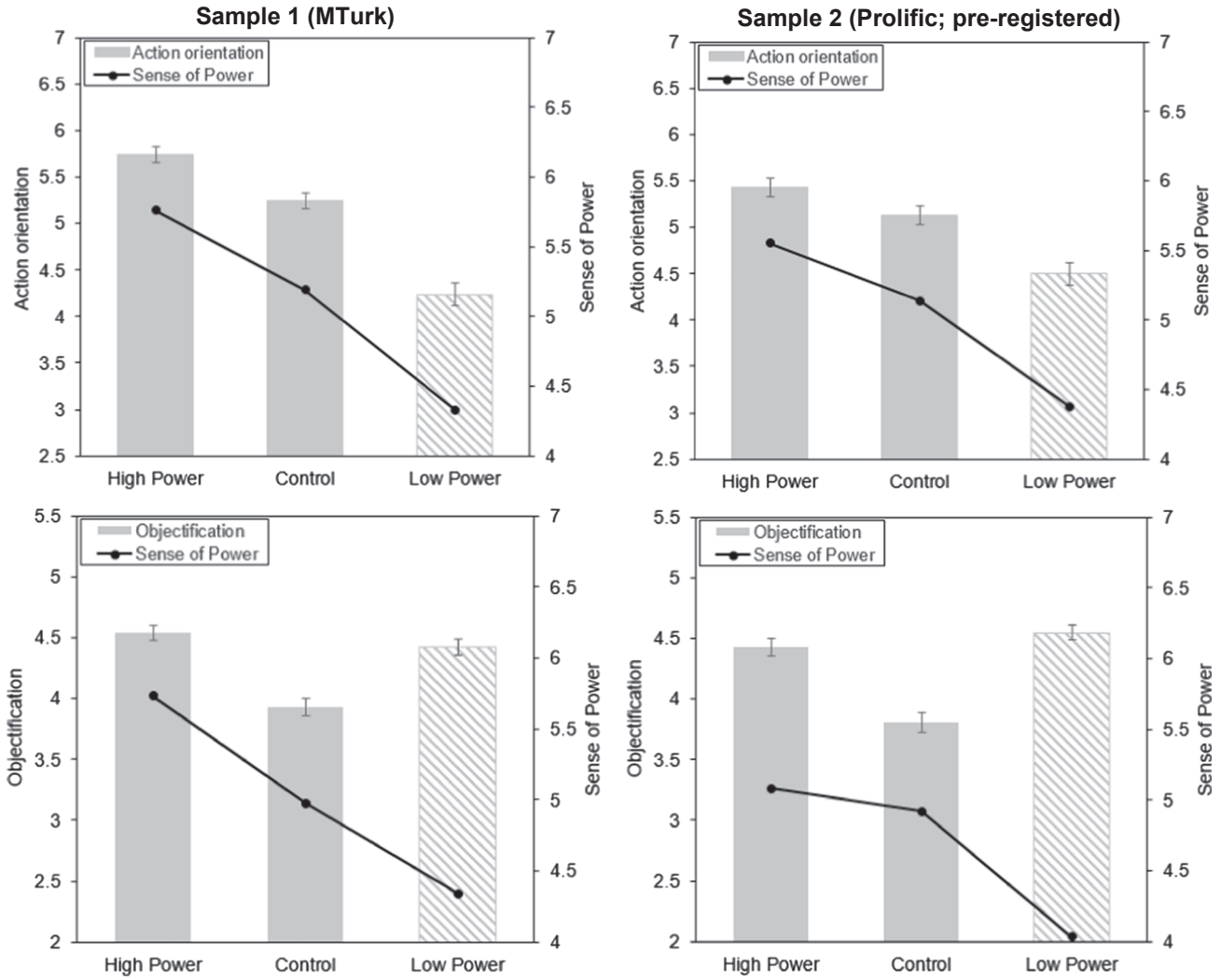

Fig. 4. Power led to a linear effect on action orientation (top panels) and a curvilinear effect on objectification (bottom panels). Error bars indicate ± 1 SEs.

$d = .58$; Sample 2: $t(1, 445) = 7.34$, $p < .001$, $d = .85$). The difference in objectification between participants in the low- and high-power conditions was not significant (Sample 1: $t(1, 447) = -1.16$, $p = .25$, $d = -.14$; Sample 2: $t(1, 445) = 1.17$, $p = .24$, $d = .15$), suggesting that high- and low-power participants indeed exhibited similar tendencies (see Fig. 4).[7]

3.4.3. Discussion

The current study is a first empirical demonstration of the idea that although low power sometimes leads to opposite effects relative to high power, at other times both high and low power lead to similar tendencies. In line with the idea that high- and low-power individuals differ in the amount of agency they enjoy, power led to a linear effect for action orientation (i.e., speaking first in a social setting). Conversely, we found that power had a curvilinear effect on an instrumental tendency (i.e., objectifying another social actor). These findings provide support for our theoretical model, which suggests that because instrumental goals are more salient in unequal-power relationships due to heightened self-interest in those relationships, and because objectification involves appraising others in terms of their instrumental value, both high- and low-power individuals are likely to objectify their relational counterpart more than individuals in situations of equal power. This implies that unequal-power relationships give rise to their own unique psychological experiences and behaviors, which can fundamentally differ from experiences and behaviors observed in equal-power relationships. It also supports the idea that low power is not necessarily a linear extension of high power and that theories building on such linearity assumptions may need refinement.

[7] We replicated the effect of power on objectification using a non-overlapping MTurk sample in which we did not measure action orientation ($n = 259$). Participants in the high power condition were more likely to objectify their work partner ($M = 4.49$, $SD = .86$) than participants in the control condition ($M = 3.86$, $SD = .88$), $t(1, 258) = 5.01$, $p < .001$, $d = .72$. Further, replicating our findings, participants in the low power condition were also more likely to objectify their work partner ($M = 4.47$, $SD = .70$) than participants in the control condition, $t(1, 258) = 4.87$, $p < .001$, $d = .76$. There was no difference in objectification between participants in the low- and high power conditions, $t(1, 258) = -.15$, $p = .88$, $d = -.03$.

4. Implications for future research

Our quantitative review of past social power research shows that the literature has been preoccupied with the effects of high power and has, consequentially, assumed that low-power effects follow linearly from high power. The present work challenges this assumption and, instead, proposes that low power should be thought of as a state that can have its own independent effects. To aid power scholars in developing and refining their hypotheses, we have conceptualized low power in

relation to high power by not only highlighting the differences between the two constructs, but also their similarities. Although there may be many ways to think about the effects of high and low power, our distinction between unequal- and equal-power relationships provides unique insights into the psychology of low power and the circumstances under which low power may not linearly follow from high power. Our experiments emphasize the benefits of systematically considering the consequences of low power and, in so doing, extends research on action orientation and objectification.

4.1. Systematically studying low power

If one accepts the notion that low- and high-power individuals share common experiences, we are faced with the challenge of adapting our theory development and testing to account for this possibility. To address the challenges associated with such curvilinear effects, related literatures are informative. For example, the status literature has long recognized the importance of thinking about hierarchical variables not merely in terms of "high" and "low," but rather in terms of a *continuum* that can take the form of a non-linear shape. For example, sociologists advanced the notion of middle-status conformity to reflect the idea that both high- and low-status actors conform less than those with moderate levels of status (Phillips & Zuckerman, 2001). More recently, Duguid and Goncalo (2015) observed similar patterns for creativity such that both high- and low-status individuals are more likely to advance creative solutions than those in the middle.

We believe a similar approach may be fruitful in advancing social power research. We would like to highlight two notable examples that have started to disentangle the effects of low from high power in more systematic ways and have thus taken a step in what we believe to be a fruitful direction. In their "Middle-Power Theory," Anicich and Hirsh (2017) proposed an update to the widely-cited approach-inhibition theory (Keltner et al., 2003) by discussing the psychological experience of middle power. According to this theory, individuals in middle-power positions – relative to those in high- and low-power positions – engage in frequent vertical code-switching (alternating interactions with high- and low-power partners) that can result in heightened role conflict and anxiety. Anicich and Hirsh (2017) recognized that power may lead to non-linear patterns and independently considered the consequences of three different levels of power (high, middle, and low power) to refine past theorizing that has merely relied on two levels of power, presumably representing polar opposites. In addition, some scholars have started using 3-cell study designs to resolve theoretical ambiguities that have emerged from the use of 2-cell designs (Schmid Mast et al., 2009). For example, inconsistencies in the effect of power on perspective-taking were speculated to be a consequence of the lack of a low-power condition (for a more detailed discussion see Galinsky, Magee, Inesi, & Gruenfeld, 2006; Schmid Mast et al., 2009). This issue was recently addressed in a study including a high-power, control, and low-power condition (Blader, Shirako, & Chen, 2016), which confirmed Galinsky et al.'s (2006) original finding that high-power states (relative to control and low-power states) decreased perspective-taking.

4.2. Need for more nuanced study designs

4.2.1. Testing the entire spectrum of power

To test more precise theories of power, more nuanced study designs are needed. Study designs often follow theories and so one implication for theory testing is to empirically account for the notion that the effects of power may be more complex. One way to effectively test whether the effects of power follow a linear pattern, a U-shaped pattern, or another pattern is to use manipulations of power that allow for a more fine-grained differentiation between high and low levels of power. For example, Handgraaf, Van Dijk, Vermunt, Wilke, and De Dreu (2008) manipulated power by varying the delta in an ultimatum game where the offer sender makes an initial offer that can then be accepted or rejected by the offer recipient. The delta is an exogenously determined discount factor ($0 \leq \delta \leq 1$) that is used to calculate the final payoff of the players involved in an ultimatum game. In case the proposal of the offer sender is rejected by the offer recipient, the offer is multiplied by the delta. The appealing feature of this manipulation is that it covers the entire spectrum from absolute power ($\delta = 1.00$) to high power (e.g. $\delta = .90$) to low power (e.g. $\delta = .10$) to no power ($\delta = 0$). There are other power manipulations that can achieve the same goal. For example, varying decision weights in groups as a percentage (Sachdev & Bourhis, 1985), varying the numeric value or quantity of negotiation alternatives (Schaerer, Loschelder, & Swaab, 2016; Schaerer, Swaab, & Galinsky, 2015), or changing the payoff structure in matrix games (Tjosvold & Sagaria, 1978) allow differentiation between smaller intervals of power.

Another direction for future research is to systematically consider the boundary areas of the power spectrum. For example, there is reason to believe that having low power versus no power can be associated with qualitatively different psychological experiences. Handgraaf et al. (2008) argued that "if even the smallest decrease in power means one of the parties becomes completely dependent on another, this may have strong effects on the way the situation is interpreted […]" (p.1146). Similar observations have been made in negotiations. Schaerer et al. (2015) found that although negotiators without any alternatives (no power) felt less powerful than those with weak alternatives (low power), those with no power surprisingly achieved better outcomes than those with some power and at times negotiated as aggressively as those with high power. Systematically examining differences of absolute power relative to high power and low power relative to no power may prove fruitful in better understanding the consequences of social power more broadly.

4.2.2. Mastering the tradeoff between design specificity and statistical validity

Although the present research implies that 3-cell designs allow for a more rigorous test of a causal relationship and the underlying causal force, researchers may still find ways to draw valid conclusions when using 2-cell designs. One obvious approach to increasing the level of confidence in whether high and/or low power drive an effect, is to complement studies with two cells with at least one study with a 3-cell design. Another approach is to compare subjective and objective outcome measures. For example, Duguid and Goncalo (2012) examined whether the experience of power influences individuals' perception of their own height. Because study participants' estimates of their own height could be objectively compared to participants' actual height, the study was not only able to conclude that height estimates were higher for high-power participants than for low-power participants, but also that it was only in the high-power condition where participants' estimates deviated from their objective height.

There are also other ways to deal with the lack of a 3-cell design, for example, by including process measures, testing boundary conditions, and successively addressing alternative explanations in a series of studies (Shadish et al., 2002). At the very least, scholars should disclose when their study designs do not allow for definitive conclusions about a certain aspect of power. For example, although one study compared high power to a control condition, the authors explicitly noted that "our theoretical focus is on the influence of powerfulness and moral identity, and so we manipulated a neutral control condition rather than low power or powerlessness in our experiments. It could prove interesting to develop and test theory related to how a perceived lack of power might interact with moral identity" (DeCelles, DeRue, Margolis, & Ceranic, 2012, p. 687). Failing to explicate such limitations may prevent other researchers from investigating low power or cause lay people to make premature judgments about the consequences of lacking power.

We also appreciate that due to the ever-increasing need for larger sample sizes researchers may need to be more focused and economical

when designing studies and that 2-cell study designs may be a consequence of that. In practice, decisions about the number of experimental conditions and number of observations per cell are often interrelated and at times can be a tradeoff. Increasing the number of cells may come at the cost of smaller cell sizes. Nevertheless, we believe that both dimensions are important to conduct more rigorous research; increasing cell size provides more confidence in *statistical* conclusions and increasing the number of cells strengthens *theoretical* conclusions. With the emergence of affordable and innovative ways to collect data, such as large online panels (Buhrmester, Kwang, & Gosling, 2011) and crowdsourced research (Schweinsberg et al., 2016; Silberzahn & Uhlmann, 2015), such tradeoffs may become less of a challenge in the future.

4.3. What is the baseline of power? How to select control conditions

We have proposed that to better understand the consequences of power, including low power into theorizing and study designs is a necessary step. Yet, the accuracy with which causal inferences can be drawn from studying either high *or* low power also depends on what they are compared to. Control conditions provide a meaningful baseline against which the effect of a treatment condition (e.g., high power, low power) can be compared to. Generally, control conditions are identical to treatment conditions except that the independent variable is absent (Shadish et al., 2002). The presence of a control condition is important (a) to assess whether there is an effect of the independent variable at all and (b) to interpret the directionality of a treatment effect (Bailey, 2008; Mullen & Monin, 2016).

Despite the advantages of including a control condition in an experimental design, only about a third (35.6%) of studies in our quantitative review included such a condition. This is striking given that there are many different types of control conditions readily available to researchers. In the following, we briefly review the advantages and disadvantages of the different types of control conditions and discuss factors that may make one type preferable over another.

4.3.1. A typology of control conditions

Control conditions used to study power can be broadly categorized into four classes: no treatment, power-unrelated treatment, relational control, and middle-power (see Table 2 for an overview). Each type of control condition has its own advantages and disadvantages, although some types seem generally preferable to others. In "*no treatment*" control conditions, participants are not exposed to any treatment. For example, Lammers et al. (2013) instructed participants to either write about an experience in which they had power over someone (high-power condition) or where someone had power over them (low-power condition). Participants in the control condition did not receive any instructions and directly proceeded to the task. Although this type of control condition accounts for participants' baseline levels of power, it does not control for other experimental characteristics that may vary between a power condition and a no-treatment condition, such as study duration, social interaction, or power salience.

In *power-unrelated* control conditions, participants usually complete a neutral task that is similar to the power manipulation. For instance, instead of being exposed to power-related words in a sentence-completion task, participants are confronted with power-unrelated words (Smith & Trope, 2006). Similarly, instead of being instructed to recall an episode of high or low power, control participants may be instructed to describe a power-unrelated event, such as a trip to the grocery store or what happened on the previous day (e.g., Galinsky et al., 2006; Overbeck & Droutman, 2013). Although this type of control condition accounts for experimental characteristics (e.g., amount of time spent on study, cognitive effort), it also shares many of the downsides of no-treatment control conditions.

Some of the shortcomings of no-treatment and power-unrelated control conditions can be mitigated by using more conservative control conditions. A *relational* control condition considers the mutual dependence between individuals that is inherent in many power manipulations. For instance, writing about someone who has more or less power almost always involves reflecting on a relationship with another person. Such cognitions may be controlled for by writing about someone who has an equal amount of power. For example, Inesi et al. (2012) either instructed participants to write about their subordinate (high-power condition) or a peer (control condition). Similarly, Kunstman, Fitzpatrick, and Smith (2018) led participants to believe their (fictitious) interaction partner controlled the distribution of rewards (high-power condition), that they themselves controlled the distribution of rewards (low-power condition), or that they would jointly determine reward allocation with their interaction partner (equal power). The advantage of such control conditions is that they not only control for differences in experimental characteristics, but also for interdependence and social interaction.

A final type of control condition that has only recently gained traction is one in which *middle power* is manipulated. Middle power involves a state in which an individual's power "is neither consistently higher nor lower than the power of others" (Anicich & Hirsh, 2017, p. 7). For example, to manipulate middle power Duguid and Goncalo (2015) instructed participants to recall a situation in which they were part of a group and their power relative to the other group members was "…neither at the top or bottom of the power hierarchy." Like relational controls, middle power considers experimental characteristics and other interdependencies activated by high- and low-power manipulations. Although we believe that using relational and middle-power control conditions generally creates a more conservative test of a power effect, selecting an appropriate control condition also depends on contextual factors.

4.3.2. Factors affecting control condition choice

Our discussion suggests that although there are considerable differences between the four types of control conditions, they all have certain advantages and disadvantages. Whether a particular control condition is feasible depends on a variety of factors such as the research question, manipulation type, and study context. When it comes to multifaceted constructs such as social power, *research questions* can vary widely and the focus of a study may dictate which control condition is best. For example, if the goal is to understand how a generalized feeling of power, or a "power mindset," (e.g., Anderson & Galinsky, 2006; Inesi, 2010) influences an outcome, using a relational or middle-power control condition may not be appropriate as they will not elicit a power-neutral mindset. Rather, a power-neutral or power-unrelated condition may be a better choice since power salience will be lower in such conditions. In contrast, if a study aims to examine the effects of power on, for example social distance, using a relational control condition as baseline may be more feasible (for details see Magee & Smith, 2013).

Certain power *manipulations* also do not naturally lend themselves to all types of control conditions. For example, power manipulations involving making a fist (e.g., Schubert & Koole, 2009) would make it challenging to implement a relational control condition. Using a power-unrelated control condition (i.e., a neutral hand gesture) or providing no instructions may be the only available options. In contrast, the popular recall procedure (Galinsky et al., 2003) asking participants to recall an episode of high or low power provides more options, such as omitting the recall procedure altogether (e.g., Galinsky et al., 2008), asking participants to recall a power-unrelated event (e.g., their last meal; Kraus et al., 2011), asking participants to recall an equal-power relationship (e.g., Inesi et al., 2012), or asking participants to recall an episode where they had a moderate amount of power (e.g., Duguid & Goncalo, 2015).

In deciding whether a control condition is feasible, researchers should also take the *context* in which a study is conducted into consideration. For example, although Galinsky and colleagues initially used a control prime asking participants to write about their previous day (Galinsky et al., 2003), they later replaced it with a prime asking participants to recall their last trip to the supermarket (e.g., Dubois, Rucker, & Galinsky, 2015)

Table 2
A typology of control conditions.

Type	Examples	Strengths and weaknesses	
		Controls for…	Does not control for…
No treatment	▪ Power manipulation omitted in control condition (Kipnis, 1972; Tost, Gino, & Larrick, 2013, Study 1)	▪ Baseline state	▪ Experimental characteristics (e.g., study duration, social interaction) ▪ Other constructs activated by power manipulation (e.g., inter-dependence, mood, status etc.) ▪ Power salience
Power-unrelated treatment	▪ Exposure to power-neutral words (Smith & Trope, 2006, Study 2; Wade-Benzoni, Hernandez, Medvec, & Messick, 2008, Study 3) ▪ Recalling one's previous day (Galinsky et al., 2006, Study 3)	▪ Experimental characteristics (e.g., study duration, social interaction)	▪ Baseline state ▪ Constructs manipulated in control condition (e.g., yesterday's basketball game) ▪ Other constructs activated by power manipulation (e.g., inter-dependence, mood, status etc.) ▪ Power salience
Relational control	▪ Recalling an equal-power relationship (Inesi et al., 2012, Study 2) ▪ Symmetric interdependence (Stevens & Fiske, 2009, Study 1; Kunstman et al., 2018, Study 1)	▪ Experimental characteristics (e.g., study duration, social interaction) ▪ Power salience (depending on operationalization)[a] ▪ Interdependence ▪ Social interaction	▪ Baseline state ▪ Other constructs activated by power manipulation (e.g., mood, status) ▪ Power salience (depending on operationalization)[a]
Middle power	▪ Recalling a middle-power situation (Duguid & Goncalo, 2015, Study 4) ▪ Vertical code switching (Anicich & Hirsh, 2017)	▪ Experimental characteristics (e.g., study duration, social interaction) ▪ Power salience ▪ Interdependence ▪ Social interaction	▪ Baseline state ▪ Other constructs activated by power manipulation (e.g., mood, status)

[a] Whether a relational control condition controls for power salience depends on its operationalization. For example, a control condition instructing participants to "recall an interaction with a friend [or peer]" does not control for power salience whereas instructing participants to "recall a relationship where both parties had equal power over each other" controls for power salience.

because the former can be subject to unwanted contextual influences (e.g., the weather the day before, anxiety produced by a final exam, or the loss of the local college basketball team on the previous day). In addition, characteristics of the participant pool may also influence which control condition is preferable. For instance, if a sample consists of individuals from a group that is naturally low in power (e.g., unemployed people, minorities), then a no-treatment control condition may reflect a low-power condition. In such a case, using a scenario-based manipulation of equal or middle power may be preferable.

4.3.3. Alleviating concerns over the ideal control condition

One way to alleviate concerns over selecting the ideal control condition may be to conduct *conceptual replications* using different power manipulations across a series of studies. The advantage of this approach is that each manipulation tends to come with its own "ideal" control condition that can account for certain alternative explanations. However, such an approach may not be effective if different confounds emerge in different studies. Further, conceptual replications may come at the expense of direct replications (Simons, 2014). Two more fruitful ways to address potential shortcomings of control conditions are control-by-design and statistical control.

Control-by-design involves adding design elements (e.g., pre-tests, additional control groups) that prevent confounding (Becker, 2005; Shadish et al., 2002). For example, to better disentangle the effects of power from potentially unwanted factors one could include multiple control conditions in the same study. In their research on the effects of power on impression formation, Stevens and Fiske (2000) compared the effects of power (i.e., asymmetric dependence) to both a symmetric dependence condition and a neutral control condition. The second option is *statistical control*, which involves measurement of third variables and including them as covariates during the analysis stage (Shadish et al., 2002). This is important as related constructs such as mood and self-esteem can potentially produce effects similar to those observed in the power literature, such as taking initiative, speaking up, and goal pursuit (Baumeister, Campbell, Krueger, & Vohs, 2003). To rule out that mood (instead of the hypothesized illusory control) was driving the effects of power on approach-related tendencies, Fast, Gruenfeld, Sivanathan, and Galinsky (2009) showed that their predictions remained robust when controlling for mood.

In sum, although there are a variety of options available to create a meaningful baseline for high and low power, we believe that relational and middle-power conditions generally provide a more conservative test of a power effect. Unfortunately, experimental and contextual characteristics can limit control condition choice. In these cases, control-by-design and statistical control can help alleviate concerns over other factors that may contribute to an effect.

4.4. Limitations & future directions

We would like to highlight several limitations of our work that give rise to fruitful avenues for future research. First, although we arrived at the conclusion that past power research has overemphasized high power relative to low power by triangulating different types of analyses, it is possible that some of these results may be partially driven by linguistic choices. For example, although a study might conclude that "powerfulness leads to cheating" the true intention may have been to conclude that "high-power individuals exhibited higher levels of cheating *relative* to low-power individuals." An attentive reader may be able to discern the subtle, but important, difference between these two statements. Nevertheless, we would err on the side of caution as even subtle linguistic idiosyncrasies in published research can have profound scientific and societal implications, such as exaggerated or incorrect interpretations by non-expert audiences, misguided public decision-making, and ineffective organizational interventions (Adams et al., 2017; Ecker, Lewandowsky, Chang, & Pillai, 2014; Rich & Zaragoza, 2016). Future research could test more systematically how experts and lay people differentially predict and interpret the effects of high and low power.

Second, one could argue that the emphasis on powerfulness in social

power research is less problematic than implied by the current research. After all, situations of low power are abundant and it may be reasonable to assume that they are the modal situation in life. If this were the case, then one could argue that most of the research outside the power literature investigates behavior under conditions of low power and that we in fact know a lot about its consequences. We agree that studying people high in power is not an issue in and of itself and we have highlighted several reasons for why doing so is important and worthwhile. Nevertheless, studying powerfulness may become problematic in the context of the wide-spread linearity assumptions that currently underlie the most widely-cited theories of social power. Our framework suggests that low power should not be treated as the opposite of high power by default and our study on power and objectification illustrated this point. In addition, although we argued that situations of low power are more widespread than situations of high power, we do not mean to imply that either of those two states are dominating in all situations. In fact, a recent study by Smith and Hofmann (2016) found that neither high nor low power is the modal situation in life. Of the 2502 everyday interactions observed in an experience-sampling study, only 23.7% were power-related (of which 42.2% were high-power-related and 57.8% were low-power-related) while the remaining 76.3% interactions did not involve any power differences. Thus, while we would encourage more research in this domain, we feel confident to conclude that (a) low power is important to understand and that (b) existing power research provides a limited picture of its consequences.

Third, we would like to highlight that we limited the scope of our quantitative review to experiments. We made this choice because the social power literature is dominated by experimental research (Schaerer et al., 2018; Sturm & Antonakis, 2015) and the present research is primarily concerned with *causal* inferences regarding the consequences of low power. Beyond experimental research, some studies have used an individual-differences approach and measured power as a trait (e.g., Anderson et al., 2012). Although continuous scales have the potential to give insight into the exact shape of the relationship between two variables (Grant & Schwartz, 2011), we are not aware of any correlational power studies that have explicitly tested or discussed the possibility of non-linear relationships. We encourage future research to do so. In addition, future research could test whether similar attribution patterns can be found in correlational research; given the results of our quantitative literature review, it is possible that correlations between power and other variables may also be attributed to high power.

Fourth, we noted earlier that we developed our theoretical model embedded in the context of organizational relationships, such as those between a supervisor and subordinate, between a buyer and a supplier, or between peers. We believe the notion of self-interest as a primary motive of entering and remaining in an unequal-power relationship (Coleman, 1994) is particularly meaningful in this context. However, there may also be other social relations where the motives for entering and staying in a relationship are not necessarily characterized by self-interest. For example, a child has little choice in changing the relationship with its parents and an army soldier may not have any discretion in freely forming a hierarchical relationship. Yet, one could argue that even in those cases, remaining in such relationships may also be because of self-interest. The child may refrain from running away due to easy access to food and shelter at home, and the soldier may abide by the commander to continue to receive an income, because of fear of being court-marshaled for insubordination, or to advance in rank. Nevertheless, familial and other non-organizational relationships may be governed by additional rules (e.g., Clark & Mills, 1979; Fiske, 1992) that could overshadow the psychological experiences our model predicts. We encourage future research to investigate more systematically how contextual differences affect the emergence of self-interest in asymmetric relationships and its consequences on thought, feelings, and behavior of the individuals in such relationships.

Finally, while the present research focused on social power, we believe that the basic theoretical and methodological implications also apply to other literatures. For example, diversity researchers recently questioned whether homogeneity is an appropriate comparison group when studying the effects of diversity. They documented that – similar to power – outcomes are often interpreted as the effect of diversity alone despite the fact that homogeneity can have its own independent effects (Apfelbaum, Phillips, & Richeson, 2014). In a similar vein, Mullen and Monin (2016) noted that the widespread use of 2-cell designs in moral licensing research have created challenges in building a cumulative literature. Similar issues may also arise in other fields where treatment conditions are interchangeably compared to other treatment *or* control conditions, such as regulatory focus (Higgins, 1998), emotions (Niedenthal & Brauer, 2012), and accountability (Lerner & Tetlock, 1999).

5. Conclusion

While there are good reasons to study the consequences of experiencing high power, our quantitative review suggests that we have a limited understanding of low power. We have laid out arguments to suggest that focusing on low-power individuals is a necessary step in understanding social power more deeply and have presented a framework that puts low power in relation to high power. We believe this framework can help scholars anticipate whether and when low power does or does not follow from high power, and we hope to stimulate a more systematic study of low-power individuals. Although high and low power *semantically* represent opposites of the same construct, the present research suggests that high- and low-power individuals may in fact share a similar psychology.

Appendix A. List of journals considered

Note: Within each discipline, journals are ranked according to the number of articles in our sample in a decreasing way (from more to fewer studies).

Psychology

- Journal of Experimental Social Psychology (number of studies in sample: 91)
- Journal of Personality and Social Psychology (84)
- Psychological Science (55)
- Personality and Social Psychology Bulletin (35)
- Social Psychological and Personality Science (16)
- European Journal of Social Psychology (14)
- British Journal of Social Psychology (8)

Organizational Behavior

- Organizational Behavior and Human Decision Processes (35)
- Academy of Management Journal (8)

- Administrative Science Quarterly (8)
- Journal of Applied Psychology (7)
- Organization Science (3)
- Journal of Organizational Behavior (1)
- Journal of Management (0)
- Management Science (0)
- Research in Organizational Behavior (0)

Marketing

- Journal of Consumer Research (31)
- Journal of Consumer Psychology (3)
- Journal of Marketing Research (0)

Appendix B. List of studies included in sample

Authors	Year	Journal	Study	Conditions		
				High power	Control	Low power
Anderson & Berdahl	2002	JPSP	1	•		•
Anderson & Berdahl	2002	JPSP	2	•		•
Anderson & Galinsky	2006	EJSP	2	•		•
Anderson & Galinsky	2006	EJSP	3	•	•	•
Anderson & Galinsky	2006	EJSP	4	•		•
Anderson & Thompson	2004	OBHDP	1	•		•
Anderson & Thompson	2004	OBHDP	2	•		•
Anicich, Fast, Halevy, & Galinsky	2016	OS	2a	•		•
Anicich, Fast, Halevy, & Galinsky	2016	OS	2b	•		•
Anicich, Fast, Halevy, & Galinsky	2016	OS	3	•		•
Berdahl & Martorana	2006	EJSP	1	•		•
Bian, Haque, & Smith	2012	BJSP	1	•		•
Bian, Haque, & Smith	2012	BJSP	2	•		•
Bian, Haque, & Smith	2012	BJSP	3	•		•
Blader & Chen	2012	JPSP	1	•	•	
Blader & Chen	2012	JPSP	2	•	•	
Blader & Chen	2012	JPSP	3	•	•	
Blader & Chen	2012	JPSP	4	•		•
Blader & Chen	2012	JPSP	5	•		•
Bohns & Wiltermuth	2012	JESP	1	•	•	•
Bohns & Wiltermuth	2012	JESP	2	•		•
Brescoll	2011	ASQ	2	•		•
Brinol, Petty, Valle, & Rucker	2007	JPSP	1	•		•
Brinol, Petty, Valle, & Rucker	2007	JPSP	2	•		•
Brinol, Petty, Valle, & Rucker	2007	JPSP	3	•		•
Brinol, Petty, Valle, & Rucker	2007	JPSP	4	•		•
Brinol, Petty, Valle, & Rucker	2007	JPSP	5	•		•
Brion & Anderson	2013	OBHDP	2	•	•	•
Burgmer & Englich	2013	SPPS	1	•	•	
Burgmer & Englich	2013	SPPS	2	•		•
Carney, Cuddy, & Yap	2010	PS	1	•		•
Caza, Tiedens, & Lee	2011	OBHDP	1	•		•
Caza, Tiedens, & Lee	2011	OBHDP	2	•		•
Chen, Lee-Chai, & Bargh	2002	JPSP	1	•	•	
Chen, Lee-Chai, & Bargh	2002	JPSP	2	•	•	•
Chen, Lee-Chai, & Bargh	2002	JPSP	3	•		•
Chen, Langer, & Mendoza-Denton	2009	JPSP	1	•		•
Chen, Langer, & Mendoza-Denton	2009	JPSP	2	•		•
Chen, Langer, & Mendoza-Denton	2009	JPSP	3	•		•
Chen, Langer, & Mendoza-Denton	2009	JPSP	4	•		•
Cho & Fast	2012	JESP	1	•		•
Copeland	1994	JPSP	1	•		•
Cuddy, Wilmuth, Yap, & Carney	2015	JAP	1	•		•
De Cremer & Van Dijk	2005	EJSP	1	•		•
De Dreu & Van Kleef	2004	JESP	1	•		•

De Dreu & Van Kleef	2004	JESP	3	•		•
de Lemus, Spears, & Moya	2012	PSPB	2	•		•
DeCelles, DeRue, Margolis, & Ceranic	2012	JAP	1	•	•	
DeCelles, DeRue, Margolis, & Ceranic	2012	JAP	2	•	•	
Depret & Fiske	1999	JESP	1	•		•
DeWall, Baumeister, Mead, & Vohs	2011	JPSP	1a	•	•	•
DeWall, Baumeister, Mead, & Vohs	2011	JPSP	1b	•	•	•
DeWall, Baumeister, Mead, & Vohs	2011	JPSP	2	•	•	•
DeWall, Baumeister, Mead, & Vohs	2011	JPSP	3	•	•	
DeWall, Baumeister, Mead, & Vohs	2011	JPSP	4	•	•	
DeWall, Baumeister, Mead, & Vohs	2011	JPSP	5	•	•	•
Dubois, Rucker, & Galinsky	2015	JPSP	5	•	•	•
Dubois, Rucker, & Galinsky	2015	JPSP	6	•		•
Dubois, Rucker, & Galinsky	2010	SPPS	1	•	•	•
Dubois, Rucker, & Galinsky	2010	SPPS	2	•		•
Dubois, Rucker, & Galinsky	2010	SPPS	3	•		•
Dubois, Rucker, & Galinsky	2010	SPPS	4	•		•
Duguid & Goncalo	2012	PS	1	•	•	•
Duguid & Goncalo	2012	PS	2	•		•
Duguid & Goncalo	2012	PS	3	•		•
Earle, Giuliano, & Archer	1983	PSPB	1	•		•
Eastwick, Wilkey, Finkel, et al.	2013	JESP	1	•		•
Fast & Chen	2009	PS	2	•	•	
Fast & Chen	2009	PS	3	•	•	
Fast, Gruenfeld, Sivanathan, & Galinsky	2009	PS	1	•	•	•
Fast, Gruenfeld, Sivanathan, & Galinsky	2009	PS	2	•		•
Fast, Gruenfeld, Sivanathan, & Galinsky	2009	PS	3	•	•	
Fast, Gruenfeld, Sivanathan, & Galinsky	2009	PS	4	•	•	
Fast, Halevy, & Galinsky	2012	JESP	1	•		•
Fast, Sivanathan, Mayer, & Galinsky	2012	OBHDP	1	•		•
Fast, Sivanathan, Mayer, & Galinsky	2012	OBHDP	2	•	•	•
Fast, Sivanathan, Mayer, & Galinsky	2012	OBHDP	3	•	•	•
Fast, Sivanathan, Mayer, & Galinsky	2012	OBHDP	5	•		•
Ferguson, Ormiston, & Moon	2010	JAP	1	•	•	•
Fisher, Grégoire, & Murray	2011	JCP	1	•		•
Fisher, Grégoire, & Murray	2011	JCP	2	•		•
Fisher, Grégoire, & Murray	2011	JCP	3	•		•
Fischer, Fischer, Englich, Aydin, & Frey	2011	JESP	1	•	•	
Fischer, Fischer, Englich, Aydin, & Frey	2011	JESP	2	•		•
Fischer, Fischer, Englich, Aydin, & Frey	2011	JESP	3	•	•	
Fischer, Fischer, Englich, Aydin, & Frey	2011	JESP	4	•	•	
Fragale	2006	OBHDP	1	•		•
Fragale	2006	OBHDP	2	•		•
Fragale, Overbeck, & Neale	2011	JESP	2	•		•
Galinsky, Gruenfeld, & Magee	2003	JPSP	1	•		•
Galinsky, Gruenfeld, & Magee	2003	JPSP	2	•		•
Galinsky, Gruenfeld, & Magee	2003	JPSP	3	•	•	•
Galinsky, Magee, Gruenfeld, et al.	2008	JPSP	1	•	•	
Galinsky, Magee, Gruenfeld, et al.	2008	JPSP	2	•		•
Galinsky, Magee, Gruenfeld, et al.	2008	JPSP	3	•	•	•
Galinsky, Magee, Gruenfeld, et al.	2008	JPSP	4	•	•	
Galinsky, Magee, Gruenfeld, et al.	2008	JPSP	5	•	•	•
Galinsky, Magee, Inesi, & Gruenfeld	2006	PS	1	•		•
Galinsky, Magee, Inesi, & Gruenfeld	2006	PS	2a	•		•
Galinsky, Magee, Inesi, & Gruenfeld	2006	PS	2b	•		•
Galinsky, Magee, Inesi, & Gruenfeld	2006	PS	3	•	•	
Galinsky, Magee, Rus, Rothman, & Todd	2014	SPPS	1	•		•
Galinsky, Magee, Rus, Rothman, & Todd	2014	SPPS	2	•		•
Galinsky, Magee, Rus, Rothman, & Todd	2014	SPPS	3	•		•
Galinsky, Wang, Whitson, et al.	2013	PS	1	•		•
Garbinsky, Klesse, & Aaker	2014	JCR	1	•	•	•
Garbinsky, Klesse, & Aaker	2014	JCR	2	•		•
Garbinsky, Klesse, & Aaker	2014	JCR	3	•		•
Garbinsky, Klesse, & Aaker	2014	JCR	4	•		•
Garbinsky, Klesse, & Aaker	2014	JCR	5	•		•
Georgesen & Harris	2006	EJSP	1	•		•

Giner-Sorolla & Maitner	2013	PSPB	1	•		•
Glasford & Pratto	2015	EJSP	1	•		•
Glasford & Pratto	2015	EJSP	2	•		•
Goldstein & Hays	2011	ASQ	1	•		•
Goldstein & Hays	2011	ASQ	2	•	•	•
Goldstein & Hays	2011	ASQ	3	•	•	•
Gordon & Chen	2013	PSPB	1	•		•
Gordon & Chen	2013	PSPB	4	•		•
Greer & van Kleef	2010	JAP	2	•		•
Gruenfeld, Inesi, Magee, & Galinsky	2008	JPSP	1a	•	•	
Gruenfeld, Inesi, Magee, & Galinsky	2008	JPSP	1b	•		•
Gruenfeld, Inesi, Magee, & Galinsky	2008	JPSP	2	•		•
Gruenfeld, Inesi, Magee, & Galinsky	2008	JPSP	3	•		•
Gruenfeld, Inesi, Magee, & Galinsky	2008	JPSP	4	•	•	
Gruenfeld, Inesi, Magee, & Galinsky	2008	JPSP	5	•	•	
Guinote	2008	JPSP	1	•		•
Guinote	2008	JPSP	2	•		•
Guinote	2008	JPSP	4	•		•
Guinote	2008	JPSP	5	•		•
Guinote	2008	JPSP	6	•		•
Guinote	2007a	JESP	1	•		•
Guinote	2007a	JESP	2	•		•
Guinote	2007a	JESP	3	•		•
Guinote	2007b	PSPB	1	•		•
Guinote	2007b	PSPB	2	•		•
Guinote	2007b	PSPB	3	•		•
Guinote	2007b	PSPB	4	•		•
Guinote	2007c	JESP	1	•		•
Guinote	2007c	JESP	2	•		•
Guinote, Weick, & Cai	2012	PS	1	•		•
Guinote, Weick, & Cai	2012	PS	2	•		•
Guinote, Weick, & Cai	2012	PS	3	•		•
Guinote, Willis, & Martellotta	2010	JESP	1	•		•
Guinote, Willis, & Martellotta	2010	JESP	2	•	•	•
Guinote, Willis, & Martellotta	2010	JESP	3	•		•
Gwinn, Judd, & Park	2013	JESP	1	•		•
Gwinn, Judd, & Park	2013	JESP	2	•		•
Hall, Rosip, LeBeau, Horgan, & Carter	2006	JESP	1	•	•	•
Hays & Goldstein	2015	JESP	2	•		•
Hays & Goldstein	2015	JESP	3	•		•
Hays & Goldstein	2015	JESP	4	•		•
Hays & Goldstein	2015	JESP	5	•		•
Howard, Gardner, & Thompson	2007	JPSP	1	•		•
Huang & Galinsky	2011	SPPS	3	•		•
Huang, Galinsky, Gruenfeld, & Guillory	2011	PS	1	•		•
Huang, Galinsky, Gruenfeld, & Guillory	2011	PS	2	•		•
Huang, Galinsky, Gruenfeld, & Guillory	2011	PS	3	•		•
Inesi	2010	OBHDP	1	•	•	
Inesi	2010	OBHDP	2	•	•	•
Inesi	2010	OBHDP	3	•		•
Inesi	2010	OBHDP	4	•	•	
Inesi, Botti, Dubois, Rucker, & Galinsky	2011	PS	1a	•		•
Inesi, Botti, Dubois, Rucker, & Galinsky	2011	PS	1b	•		•
Inesi, Botti, Dubois, Rucker, & Galinsky	2011	PS	3a	•		•
Inesi, Botti, Dubois, Rucker, & Galinsky	2011	PS	3b	•	•	
Inesi, Gruenfeld, & Galinsky	2012	JESP	1	•	•	
Inesi, Gruenfeld, & Galinsky	2012	JESP	2	•	•	
Inesi, Gruenfeld, & Galinsky	2012	JESP	3	•	•	
Inesi, Gruenfeld, & Galinsky	2012	JESP	5	•	•	
Inesi, Lee, & Rios	2014	JESP	1	•	•	
Inesi, Lee, & Rios	2014	JESP	2	•	•	
Inesi, Lee, & Rios	2014	JESP	3	•	•	
Inesi, Lee, & Rios	2014	JESP	4	•	•	
Inesi & Rios	2013	JESP	1	•	•	
Inesi & Rios	2013	JESP	2	•	•	
Inesi & Rios	2013	JESP	3	•	•	

Jiang, Zhan, & Rucker	2014	JCR	1a	•		•
Jiang, Zhan, & Rucker	2014	JCR	1b	•		•
Jiang, Zhan, & Rucker	2014	JCR	2	•		•
Jiang, Zhan, & Rucker	2014	JCR	3	•		•
Jiang, Zhan, & Rucker	2014	JCR	4	•		•
Jiang, Zhan, & Rucker	2014	JCR	5	•		•
Jin, He, & Zhang	2014	JCR	1	•		•
Jin, He, & Zhang	2014	JCR	3	•		•
Jin, He, & Zhang	2014	JCR	4	•	•	•
Johnson & Lammers	2012	JESP	1	•		•
Johnson & Lammers	2012	JESP	2	•		•
Johnson & Lammers	2012	JESP	3	•	•	•
Jordan, Sivanathan, & Galinsky	2011	ASQ	1	•		•
Jordan, Sivanathan, & Galinsky	2011	ASQ	2	•		•
Jordan, Sivanathan, & Galinsky	2011	ASQ	3	•		•
Jordan, Sivanathan, & Galinsky	2011	ASQ	5	•		•
Joshi & Fast	2013a	PSPB	1	•		•
Joshi & Fast	2013a	PSPB	2	•		•
Joshi & Fast	2013a	PSPB	3	•	•	•
Joshi & Fast	2013b	PS	1	•		•
Joshi & Fast	2013b	PS	2	•	•	
Joshi & Fast	2013b	PS	3	•	•	•
Karremans & Smith	2010	PSPB	2	•		•
Kifer, Heller, Perunovic, & Galinsky	2013	PS	2a	•		•
Kilduff & Galinsky	2013	JPSP	2	•	•	•
Kim, Smith, & Brigham	1998	PSPB	1	•		•
Kipnis	1972	JPSP	1	•	•	
Koning, Steinel, van Beest, & van Dijk	2011	OBHDP	1	•		•
Koning, Steinel, van Beest, & van Dijk	2011	OBHDP	2	•		•
Kopelman	2009	OBHDP	1	•		•
Kraus, Chen, & Keltner	2011	JESP	3	•	•	•
Kteily, Saguy, Sidanius, & Taylor	2013	JPSP	2	•		•
Kteily, Saguy, Sidanius, & Taylor	2013	JPSP	3	•		•
Kteily, Saguy, Sidanius, & Taylor	2013	JPSP	4	•		•
Kunstman & Maner	2011	JPSP	1	•	•	
Kunstman & Maner	2011	JPSP	2	•	•	
Kunstman & Maner	2011	JPSP	3	•	•	
Lammers, Dubois, Rucker, & Galinsky	2013	JESP	1	•		•
Lammers, Dubois, Rucker, & Galinsky	2013	JESP	2	•	•	•
Lammers, Galinsky, Gordijn, & Otten	2008	PS	1	•		•
Lammers, Galinsky, Gordijn, & Otten	2008	PS	2	•		•
Lammers, Galinsky, Gordijn, & Otten	2008	PS	3	•		•
Lammers, Galinsky, Gordijn, & Otten	2008	PS	4	•		•
Lammers, Galinsky, Gordijn, & Otten	2012	SPPS	1	•	•	•
Lammers, Galinsky, Gordijn, & Otten	2012	SPPS	2	•	•	•
Lammers, Galinsky, Gordijn, & Otten	2012	SPPS	3	•		•
Lammers, Galinsky, Gordijn, & Otten	2012	SPPS	4	•	•	•
Lammers, Galinsky, Gordijn, & Otten	2012	SPPS	5	•	•	•
Lammers, Gordijn, & Otten	2008	JESP	1	•		•
Lammers, Gordijn, & Otten	2008	JESP	2	•		•
Lammers, Gordijn, & Otten	2008	JESP	3	•	•	•
Lammers, Gordijn, & Otten	2008	JESP	4	•		•
Lammers & Stapel	2009	JPSP	1	•		•
Lammers & Stapel	2009	JPSP	2	•		•
Lammers & Stapel	2009	JPSP	3a	•		•
Lammers & Stapel	2009	JPSP	3b	•		•
Lammers & Stapel	2009	JPSP	4	•		•
Lammers & Stapel	2009	JPSP	5	•		•
Lammers, Stapel, & Galinsky	2010	PS	1	•		•
Lammers, Stapel, & Galinsky	2010	PS	2	•		•
Lammers, Stapel, & Galinsky	2010	PS	3	•		•
Lammers, Stapel, & Galinsky	2010	PS	4	•		•
Lammers, Stapel, & Galinsky	2010	PS	5	•		•
Lammers, Stoker, & Stapel	2009	PS	1	•	•	
Lisjak, Molden, & Lee	2012	JPSP	4	•	•	•
Magee, Galinsky, & Gruenfeld	2007	PSPB	1a	•		•

Magee, Galinsky, & Gruenfeld	2007	PSPB	1b	•		•
Magee, Galinsky, & Gruenfeld	2007	PSPB	2	•	•	
Magee, Galinsky, & Gruenfeld	2007	PSPB	3	•		•
Magee, Galinsky, & Gruenfeld	2007	PSPB	4	•		•
Maner, Gailliot, Butz, & Peruche	2007	PSPB	1	•	•	
Maner, Gailliot, Butz, & Peruche	2007	PSPB	2	•	•	
Maner, Gailliot, Menzel, & Kunstman	2012	PSPB	1	•	•	
Maner, Gailliot, Menzel, & Kunstman	2012	PSPB	2	•	•	
Mason, Zhang, & Dyer	2010	JESP	1	•	•	
Mason, Zhang, & Dyer	2010	JESP	2	•		•
Mason, Zhang, & Dyer	2010	JESP	3	•		•
Mead & Maner	2012	JPSP	1	•	•	
Mead & Maner	2012	JPSP	2	•	•	
Mead & Maner	2012	JPSP	3	•	•	
Miyamoto & Ji	2011	PSPB	1	•	•	•
Miyamoto & Ji	2011	PSPB	2	•		•
Moon & Chen	2014	JESP	1	•		•
Moon & Chen	2014	JESP	2	•		•
Moon & Chen	2014	JESP	3	•		•
Moon & Chen	2014	JESP	4	•		•
Moon & Chen	2014	JESP	5	•	•	•
Morand	2000	JOB	1	•		•
Mourali & Yang	2013	JCR	1	•		•
Mourali & Yang	2013	JCR	2	•	•	
Mourali & Yang	2013	JCR	3	•	•	
Mourali & Yang	2013	JCR	4	•	•	
Narayanan, Tai, & Kinias	2013	OBHDP	1	•	•	•
Narayanan, Tai, & Kinias	2013	OBHDP	2	•		•
Narayanan, Tai, & Kinias	2013	OBHDP	3	•		•
Narayanan, Tai, & Kinias	2013	OBHDP	4	•		•
Overbeck & Droutman	2013	PS	1	•		•
Overbeck & Droutman	2013	PS	2	•		•
Overbeck & Droutman	2013	PS	3	•	•	•
Overbeck, Neale, & Govan	2010	OBHDP	1	•		•
Overbeck & Park	2001	JPSP	1	•		•
Overbeck & Park	2001	JPSP	2	•		•
Overbeck & Park	2001	JPSP	3	•		•
Overbeck & Park	2006	OBHDP	2	•		•
Park, Streamer, Huang, & Galinsky	2013	JESP	1	•		•
Park, Streamer, Huang, & Galinsky	2013	JESP	2a	•		•
Park, Streamer, Huang, & Galinsky	2013	JESP	2b	•		•
Park, Streamer, Huang, & Galinsky	2013	JESP	3	•		•
Park, Streamer, Huang, & Galinsky	2013	JESP	4	•		•
Pitesa & Thau	2013a	AMJ	1	•	•	•
Pitesa & Thau	2013a	AMJ	2	•		•
Pitesa & Thau	2013a	AMJ	3	•		•
Pitesa & Thau	2013b	JAP	1	•	•	
Pitesa & Thau	2013b	JAP	3	•	•	
Poppe	2003	EJSP	1	•	•	•
Ranehill, Dreber, Johannesson, Leiberg, Sul, & Weber	2015	PS	1	•		•
Richeson & Ambady	2003	JESP	1	•		•
Rodriguez-Bailon, Moya, & Yzerbyt	2000	EJSP	1	•	•	•
Rucker, Dubois, & Galinsky	2011	JCR	1	•		•
Rucker, Dubois, & Galinsky	2011	JCR	2	•	•	•
Rucker, Dubois, & Galinsky	2011	JCR	3	•		•
Rucker, Dubois, & Galinsky	2011	JCR	4	•		•
Rucker, Dubois, & Galinsky	2011	JCR	5	•		•
Rucker & Galinsky	2009	JESP	2	•	•	•
Rucker & Galinsky	2009	JESP	3	•		•
Rucker & Galinsky	2009	JESP	4	•		•
Rucker & Galinsky	2009	JESP	5	•		•
Rucker & Galinsky	2008	JCR	1	•	•	•
Rucker & Galinsky	2008	JCR	2	•	•	•
Rucker & Galinsky	2008	JCR	3		•	•
Rucker, Hu, & Galinsky	2014	JCR	1a	•		•
Rucker, Hu, & Galinsky	2014	JCR	1b	•		•

Rucker, Hu, & Galinsky	2014	JCR	2a	•		•
Rucker, Hu, & Galinsky	2014	JCR	2b	•		•
Rucker, Hu, & Galinsky	2014	JCR	3	•		•
Rus, van Knippenberg, & Wisse	2010	JESP	1	•		•
Schaerer, Swaab, & Galinsky	2015	PS	1a	•		•
Schaerer, Swaab, & Galinsky	2015	PS	1b	•	•	•
Schaerer, Swaab, & Galinsky	2015	PS	3	•		•
Scheepers, de Wit, Ellemers, & Sassenberg	2012	JESP	1	•		•
Scheepers, de Wit, Ellemers, & Sassenberg	2012	JESP	2	•		•
Scheepers, Ellemers, & Sassenberg	2013	BJSP	1	•		•
Schmid Mast, Jonas, & Hall	2009	JPSP	1	•		•
Schmid Mast, Jonas, & Hall	2009	JPSP	2	•	•	•
Schmid Mast, Jonas, & Hall	2009	JPSP	3	•	•	•
Schmid & Schmid Mast	2013	EJSP	1	•	•	
Schmid & Schmid Mast	2013	EJSP	2	•	•	
Scholl & Sassenberg	2015	PSPB	1	•		•
Scholl & Sassenberg	2015	PSPB	2	•		•
Scholl & Sassenberg	2015	PSPB	3	•		•
Scholl & Sassenberg	2014	JESP	2	•		•
Scholl & Sassenberg	2014	JESP	3	•		•
Scholl & Sassenberg	2014	JESP	4	•	•	•
Schubert	2004	PSPB	1	•	•	
Schubert	2004	PSPB	2	•	•	
Schubert	2004	PSPB	3	•	•	
Schubert & Koole	2009	JESP	1	•	•	
Schubert & Koole	2009	JESP	2	•	•	
See, Morrison, Rothman, & Soll	2011	OBHDP	3	•	•	•
Slabu & Guinote	2010	JESP	1	•		•
Slabu & Guinote	2010	JESP	2	•		•
Sligte, de Dreu, & Nijstad	2011	JESP	1	•		•
Sligte, de Dreu, & Nijstad	2011	JESP	2	•		•
Sligte, de Dreu, & Nijstad	2011	JESP	3	•		•
Smith, Dijksterhuis, & Wigboldus	2008	PS	1	•		•
Smith, Dijksterhuis, & Wigboldus	2008	PS	2	•		•
Smith, Jostmann, Galinsky, & van Dijk	2008	PS	1	•		•
Smith, Jostmann, Galinsky, & van Dijk	2008	PS	2	•	•	•
Smith, Jostmann, Galinsky, & van Dijk	2008	PS	3	•	•	•
Smith, Jostmann, Galinsky, & van Dijk	2008	PS	4	•	•	•
Smith & Trope	2006	JPSP	1	•	•	•
Smith & Trope	2006	JPSP	2	•	•	•
Smith & Trope	2006	JPSP	3	•		•
Smith & Trope	2006	JPSP	4	•	•	•
Smith & Trope	2006	JPSP	5	•	•	•
Smith & Trope	2006	JPSP	6	•	•	•
Smith & Trope	2006	JPSP	7	•	•	•
Stillman, Baumeister, & DeWall	2007	PSPB	1		•	•
Stillman, Baumeister, & DeWall	2007	PSPB	2	•	•	•
Strelan, Weick, & Vasiljevic	2014	BJSP	1	•		•
Strelan, Weick, & Vasiljevic	2014	BJSP	2	•	•	
Strelan, Weick, & Vasiljevic	2014	BJSP	3	•		•
Strelan, Weick, & Vasiljevic	2014	BJSP	4	•	•	
Tiedens & Fragale	2003	JPSP	1	•	•	•
Tiedens & Fragale	2003	JPSP	2	•		•
Tost, Gino, & Larrick	2013	AMJ	1	•	•	
Tost, Gino, & Larrick	2013	AMJ	2	•	•	
Tost, Gino, & Larrick	2013	AMJ	3	•	•	
Tost, Gino, & Larrick	2012	OBHDP	1	•	•	•
Tost, Gino, & Larrick	2012	OBHDP	2	•		•
Tost, Gino, & Larrick	2012	OBHDP	3	•	•	•
Tjosvold	1985	OBHDP	1	•		•
van Dijk & De Cremer	2006	PSPB	1	•		•
van Dijk & De Cremer	2006	PSPB	2	•		•
Van Kleef, De Dreu, Pietroni, & Manstead	2006	EJSP	4	•		•
Van Kleef, De Dreu, Pietroni, & Manstead	2006	EJSP	5	•		•
Van Kleef, Oveis, Homan, van der Löwe, & Keltner	2015	SPPS	4	•		•
van Prooijen, Coffeng, & Vermeer	2014	JESP	1	•		•

van Prooijen, Coffeng, & Vermeer	2014	JESP	4	•		•
Wade-Benzoni, Hernandez, Medvec, & Messick	2008	JESP	3	•	•	
Weick & Guinote	2010	JESP	1	•	•	
Weick & Guinote	2010	JESP	2	•		•
Weick & Guinote	2010	JESP	3	•		•
Weick & Guinote	2008	JPSP	1a	•		•
Weick & Guinote	2008	JPSP	1b	•		•
Weick & Guinote	2008	JPSP	3	•		•
Whitson, Liljenquist, Galinsky et al.	2013	JESP	1	•		•
Whitson, Liljenquist, Galinsky et al.	2013	JESP	2	•		•
Willis, Guinote, & Rodriguez-Bailon	2010	JESP	2		•	•
Wiltermuth & Flynn	2013	AMJ	1	•	•	
Wiltermuth & Flynn	2013	AMJ	4	•		•
Waytz, Chou, Magee, & Galinsky	2015	OBHDP	2a	•		•
Waytz, Chou, Magee, & Galinsky	2015	OBHDP	2b	•		•
Waytz, Chou, Magee, & Galinsky	2015	OBHDP	2c	•		•
Waytz, Chou, Magee, & Galinsky	2015	OBHDP	3	•	•	•
Waytz, Chou, Magee, & Galinsky	2015	OBHDP	4	•	•	•
Waytz, Chou, Magee, & Galinsky	2015	OBHDP	5	•		•
Yap, Mason, & Ames	2013	JESP	1	•		•
Yap, Mason, & Ames	2013	JESP	2	•		•
Yap, Wazlawek, Lucas, Cuddy, & Carney	2013	PS	1	•		•
Yap, Wazlawek, Lucas, Cuddy, & Carney	2013	PS	2	•		•
Yap, Wazlawek, Lucas, Cuddy, & Carney	2013	PS	3	•		•

Appendix C. Supplementary material

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.obhdp.2018.08.004.

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