



Building cross-disciplinary bridges in leadership: Integrating top executive personality and leadership theory and research

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ABSTRACT

The top executive personality literature has grown significantly in recent years. We review this literature, consider its contributions to leadership research and practice, and discuss how future research on top executive personality should draw more heavily on the broader leadership literature. The paper first describes the top executive context and highlights the advantages and challenges of studying top executives. We then review the top executive personality literature in four areas that capture the bulk of the research: leadership of human resources, ethical leadership, strategic leadership and corporate governance, and firm performance. We examine how the top executive personality research in each area compares with other research on leaders' and their personalities that has been conducted on similar topics. The paper concludes with a future research agenda, which identifies other leader, team, and contextual considerations to advance our understanding of top executive personality and its influence. We also address methodological challenges related to measurement and endogeneity, because they are important for theory development and have received much attention in top executive personality research. In short, our paper examines how the literatures on top executives and leadership inform one another, and it helps lay a foundation for integrating these literatures more thoroughly.

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Interest in leaders' individual differences, and their impact on followers and organizations, has a long history (Barnard, 1938; Machiavelli, 1532; Sloan, 1937). The great man (or person) approach, for example, sought to identify leader characteristics that benefit followers, groups, and organizations (Borgatta, Bales, & Couch, 1954; Hoffman, Woehr, Maldagen-Youngjohn, & Lyons, 2011; Lord, Day, Zaccaro, Avolio, & Eagly, 2017). More recent leadership research has focused more attention specifically on leaders' personalities, including their influence on leaders' decisions, interactions with others, emergence as leaders, and effectiveness in those roles. It also identifies several unresolved debates relating to fundamental issues such as the measurement of personality, theoretical mechanisms that explain its effects, and generalizability of findings across contexts (Judge, Bono, Ilies, & Gerhardt, 2002; Sackett, Lievens, van Iddekinge, & Kuncel,

2017; Smith, Hill, Wallace, Recendes, & Judge, 2018). Thus, although we have learned much about leaders' personalities, there is still more to learn about their effects on organizational phenomena.

Concomitant with this surge, the literature on top executives' personalities also has grown significantly in recent years. Often grounded in upper echelons theory (Hambrick, 2007; Hambrick & Mason, 1984), this literature focuses on the leaders at the apex of organizations, mostly CEOs and top management team (TMT) members. These leaders affect more followers, receive more income, are more visible, and have more financial impact than other business leaders do. At the same time, the difficult selection process involved in choosing top executives and the nature of their jobs suggests that they may differ from other leaders in theoretically meaningful ways, including not only the relative prevalence or rarity of certain personality traits (e.g., narcissism vs. neuroticism) (Chatterjee & Hambrick, 2007; Ones & Dilchert, 2009), but also other attributes (e.g., cognitive ability and self-monitoring) thought to shape personality's impact (Barrick, Parks, & Mount, 2005; Hitt & Tyler, 1991). Thus, our purpose is to review the top executive personality literature, integrate it with the leadership literature, and provide an agenda for future research.

In light of related research that shows that (a) top executives' personalities affect their decisions and behaviors and (b) these decisions

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and behaviors are vitally important to firms (Colbert, Barrick, & Bradley, 2014; Quigley & Hambrick, 2015; Wang, Holmes Jr., Oh, & Zhu, 2016), top executive personality research helps inform our understanding of leadership and organizations. This paper considers several critical questions about top executive personality. How does top executive personality influence outcomes of interest in leadership research? What does top executive personality research reveal about the study and practice of leadership more generally? What new questions does top executive personality research raise about the influence of leaders' personalities in organizations? How can the study of leadership inform research about the influence of top executives' personalities? The leadership literature documents attributes of leaders, leadership teams, and leadership contexts that can inform the answers to research questions top executive personality scholars are starting to probe, including leadership emergence, leadership effectiveness, and the conditions that shape the manifestation, benefits, and drawbacks of certain personality traits among leaders. As we show, the leadership and top executive personality literatures can inform one another, and we aim to promote new dialogue between them.

This review advances leadership scholarship in three ways. First, we examine how top executive personality research advances the study of leadership, especially leaders' personalities. We begin by describing the top executive context, explaining how it can enrich leadership theory and practice, and discussing why top executive personality is challenging to study. We then review the top executive personality literature, organizing it into four research streams that account for most of the research in this area and that allow us to summarize its core insights: leadership of human resources, ethical leadership, strategic leadership and corporate governance, and firm performance. Our review synthesizes top executive personality research on each topic and identifies key takeaways that inform and raise new questions for leadership research and practice.

Second, we present a future research agenda to extend the top executive personality literature and link it more closely with the broader leadership literature. Although the top executive context can be used to test various leadership theories (Busenbark, Krause, Boivie, & Graffin, 2016), the research on top executives has yet to integrate many core theoretical insights about personality from the leadership literature, especially how other attributes of leaders (e.g., other individual differences), the leadership team (e.g., TMT), and the leadership context (e.g., industry) shape the influence of leaders' personalities. Drawing attention to these issues, and discussing opportunities to address them through future research, can help scholars attend to important theoretical gaps in our understanding of top executives, their influence on organizations and various stakeholders, and how their personalities shape their roles and effectiveness as leaders.

Third, we discuss two methodological concerns that have received attention in the top executive personality literature and that are important to leadership scholars interested in personality: the measurement of top executive personality and the use of endogeneity corrections. Scholars have measured top executive personality in many ways, including self-report surveys, third-party assessments (e.g., subordinates' ratings of top executives' personalities), and archival proxies (e.g., content analysis of annual reports). Likewise, scholars have corrected for endogeneity in multiple ways, including two-stage models with instrumental variables and various matching techniques. These different approaches to measurement and endogeneity not only have tradeoffs, but also raise questions about the validity, replicability, and generalizability of research findings based on various methods. By addressing these issues, we hope to strengthen the methodological foundation for future theory development on top executives and other leaders.

Our work builds on Neely Jr., Lovelace, Cowen, and Hiller's (2020) recent review of upper echelons theory in four ways. First, Neely et al. summarized prior critiques of upper echelons theory and assessed the progress in addressing those critiques during the past decade. Whereas their research covered a wide breadth of upper echelons research on many topics, we focus more deeply on top executive personality. Our

approach is an important extension of their work because personality is one of the most studied aspects of top executives, especially in recent years, and has its own challenges and future research potential. Second, Neely et al. called for scholars to integrate upper echelons scholarship with the leadership literature, which is the purpose of our work herein. Indeed, we explain how the top executive and leadership literatures inform one another, specifically with respect to the study of personality. Third, although our work and Neely et al. each focus mostly on theoretical and methodological issues, we also address the practical implications of the top executive personality literature. Fourth, Neely et al. address endogeneity, as do we. However, unlike Neely et al., we also discuss specific techniques for correcting for endogeneity and the respective advantages and disadvantages of different techniques.

We begin by discussing the top executive context, explaining how it represents a special and important case of leadership, and identifying the challenges of studying top executive personality. Tables 1 and 2 summarize the review's content and practical implications.

The top executive context

Upper echelons theory suggests that (a) top executives' individual characteristics shape their decisions and behaviors by influencing how they search for, perceive, and interpret information and (b) these decisions and behaviors have important consequences for firms and their stakeholders (Hambrick, 2007; Hambrick & Mason, 1984). Top executives are a special case of leadership in that they are at the apex of their firms and, thus, are responsible for leading entire functional areas (e.g., finance), product and service divisions, and firms (in the case of CEOs). This context creates both opportunities for theoretical advances and challenges for scholars.

First, as leaders, *top executives influence numerous stakeholders*—including employees, customers, suppliers, and investors—and *top executives are very important financially*. They are firms' highest paid employees and can create (or destroy) significant economic value (Agarwal & Holmes, 2019). Indeed, there is evidence that CEOs account for up to 36% of the variance in U.S. firms' financial performance (after accounting for firm, industry, and year effects) and that this percentage has grown over time (Crossland & Hambrick, 2007, 2011; Quigley & Hambrick, 2015). In this regard, top executives are embedded in different firms, industries, countries, and economic conditions, none of which are static (Crossland & Hambrick, 2011; Hitt, Beamish, Jackson, & Mathieu, 2007). The top executive context, in turn, is an interesting and appropriate setting for examining how and under what conditions leaders' personalities affect critical *firm-level* outcomes, often via their impact on many *other individuals* (potentially thousands) and *processes* inside and outside firms. Thus, top executives are both practically and theoretically important.

Second, *top executives face different jobs demands and tend to have more discretion than other leaders*. They have fewer superiors, more formal authority, more non-routine responsibilities that require judgment, and more influence over internal processes and structures (Hambrick & Finkelstein, 1987). Even CEOs who do not chair the board may experience little direct oversight from the board and other shareholders, because CEOs have authority over firms' daily operations and often board nomination processes (e.g., Finkelstein, 1992). This control is important because personalities tend to affect decisions and behavior more strongly when there are fewer constraints on discretion (Judge & Zapata, 2015; Mischel & Shoda, 1995). Nonetheless, top executives in different jobs, firms, industries, institutional environments, and economic conditions face different contexts, and these *contexts shape their level of discretion and the appropriateness of different decisions and behaviors*. As a result, top executives are an important group for which to examine contextual factors that are important to theory and practice but do not influence all leaders equally.

Third, *top executives are among the most visible leaders in society*. Due to this visibility, there is more publicly available data about them than

Table 1
Summary of extant research on top executive personality^a.

Extant research on top executive personality	
Theme	Topic
Leadership of Human Resources	Top executives' personalities affect subordinates' attitudes, behaviors, and effectiveness Top executives' personalities influence firms' hiring, retention, and compensation practices.
Ethical Leadership	Top executives' personalities shape their leadership styles. Top executives' personalities influence firms' compliance with legal standards. Top executives' personalities affect firms' corporate social responsibility (CSR).
Strategic Leadership and Corporate Governance	Top executives' personalities affect firm strategy by influencing their propensities to act self-servingly Top executives' personalities influence their firms' strategic actions. Top executives' personalities influence their firms' propensities for strategic change. Top executive personalities affect firm innovation Top executive personality affects firm strategy by influencing inter-organizational relations. Corporate governance shapes the impact of top executive personality on firm strategy. Certain top executive personality traits limit the effectiveness of corporate governance.
Firm Performance	Scholars have identified theoretical and empirical linkages between top executive personality and firm performance without modeling the indirect effects explicitly. Scholars have empirically modeled several individual-, team-, and firm-level factors that mediate the link between top executive personality and firm performance

^a We searched Academy of Management Discoveries, Academy of Management Journal, Academy of Management Learning and Education, Academy of Management Perspectives, Academy of Management Review, Administrative Science Quarterly, Business Ethics Quarterly, Entrepreneurship & Regional Development, Entrepreneurship Theory and Practice, Global Strategy Journal, Group & Organization Management, Human Resource Management, Human Resource Management Review, Industrial and Organizational Psychology, International Business Review, International Journal of Applied Psychology, Journal of Business Ethics, Journal of Business Venturing, Journal of International Business Studies, Journal of International Management, Journal of Managerial Psychology, Journal of Occupational and Organizational Psychology, Journal of Organizational Behavior, Journal of Management, Journal of Management Studies, Journal of Small Business Management, Journal of World Business, Management International Review, Management Science, Organization Science, Organization Studies, Personnel Psychology, Research in Organizational Behavior, Small Business Economics, Strategic Entrepreneurship Journal, Strategic Management Journal, Strategy Science, The Leadership Quarterly, The North American Journal of Economics and Finance, and World Development.

about most leaders. Especially in U.S. public firms, secondary sources contain abundant information about top executives (e.g., their pay, experience, and public statements) and their firms (e.g., governance, strategies, and performance). Data availability allows researchers to collect information from multiple sources, which can help overcome concerns about social desirability, common method bias, and other methodological challenges of survey research. This visibility also allows scholars to study additional variables that shape or reflect the impact of leaders' personality and, as described later, has enabled methodological advances in personality measurement and endogeneity corrections.

Fourth, *top executives differ from other leaders in theoretically and practically meaningful ways*. For instance, they often score higher, and

vary less, on cognitive ability (a high baseline of such ability may be required to attain these positions) (Hitt & Tyler, 1991). Though perhaps creating generalizability and range restriction concerns in some studies, these factors eliminate some alternative explanations for leaders' decisions, behavior, and performance (Hollenbeck, 2009). Further, some personality traits may be more (e.g., narcissism; Chatterjee & Hambrick, 2007) or less (e.g., neuroticism; Ones & Dilchert, 2009) prevalent in top executives than other leaders. Though more research is needed (as we explain later), this potential over- or underrepresentation of certain personality traits creates research opportunities. Scholars can study such traits in situations where (a) leaders' decisions and behaviors have significant financial effects and (b) leaders must cooperate

Table 2
Practical implications for the top executive personality.

Theme	Topic
Shareholders and other stakeholders need to pay attention to top executive personality	Leaders' personalities influence their decisions and behaviors in potentially important and complex ways (Judge et al., 2002; Oh et al., 2002; Smith et al., 2016). Top executives account for significant variance in firm performance (Crossland & Hambrick, 2007, 2011; Quigley & Hambrick, 2015). Top executives' effects firms' strategy, performance, and stakeholders (e.g., employees) often differ across contexts (e.g., environmental, firm, and TMT conditions).
Leadership of Human Resources	The mix of personality traits on the TMT is important. Although extraversion can improve individual TMT members abilities to lead their subordinates, for example, TMTs made up of too many extraverts may have difficulty cooperating and leading collaboratively. Firms might need to adjust promotion and selection decisions. Personality traits that help individuals ascend into top executive positions may differ from those that help them excel in those positions.
Ethical leadership	Dark personality traits (e.g., narcissism) can produce both prosocial (e.g., CSR) and antisocial behavior (e.g., fraud), which is important because CSR and ethics are increasingly important and visible to external stakeholders. Some personality traits help top executives undermine boards and other monitoring systems. Thus, more diligence and accountability are needed in corporate governance.
Strategic Leadership and Corporate Governance	Because the nature of the task influences which personality attributes are helpful vs. harmful, some personality traits are less beneficial for top executives than for other leaders. Top executive personality shapes the effects of incentive compensation (e.g., stock options might reduce risk taking among more conscientious top executives). Thus, boards should consider top executive personality when designing executive compensation contracts.
Firm Performance	Firm requirements may influence the desirability of certain personality traits among top executives. For instance, top executive agreeableness may be less desirable when firms need turnaround strategies, because it tends to reduce top executives' willingness to engage in strategic change and their ability to implement strategic change effectively. Though many argue that narcissism is common among top executives, hiring narcissistic top executives is risky. Narcissism causes extreme behavior, potentially resulting in either very good or very poor firm performance and greater performance volatility.

with, compete with, and benchmark against others (at their own firm and at other firms) that may have similar traits. At the same time, although personality is relatively stable in adulthood, major life events—such as being appointed to or fired from top executive positions—may influence top executives' subsequent cognitions, emotions, and behaviors in significant ways, perhaps altering how their personalities manifest or even change over the long term (Bleidorn, Hopwood, & Lucas, 2018; Tasselli, Kilduff, & Landis, 2018).

Despite these advantages, the top executive personality context also creates measurement and analytical challenges for leadership research. Top executives' job demands and time constraints often limit survey response rates (Cycyota & Harrison, 2006), especially for in-depth personality scales (Hambrick & Mason, 1984). In addition, top executives may have stronger self-monitoring, political, and impression management skills than most leaders (because such skills help individuals ascend into top executive positions), perhaps undermining the validity of some self-report personality measures (Barrick et al., 2005; Chatterjee & Hambrick, 2007). Moreover, there are fewer top executives overall and, in turn, fewer distinct samples available. As such, different studies often focus on the same limited set of top executives and firms, which creates redundancy in the empirical record and might reduce response rates from top executives who receive many survey or interview requests. Lastly, endogeneity is important in this context. If top executives' personality traits and other individual differences are not representative of the general population, for example, there is a potential for endogeneity due to self-selection. With these opportunities and challenges in mind, we turn to the review methodology.

Literature review methodology and scope

Two challenges of reviewing the top executive personality literature include (1) defining top executives (e.g., Carpenter, Geletkanycz, & Sanders, 2004) and (2) deciding which individual differences are personality traits (e.g., Tuncdogan, Acar, & Stam, 2017). Top executives are leaders at the apex of firms, including CEOs, TMT members, and other members of firms' upper echelons (i.e., dominant coalitions; Hambrick & Mason, 1984). Often, their job titles indicate leadership of functional areas (e.g., Chief Financial Officers) or divisions (e.g., business unit presidents) (Carpenter et al., 2004). Operationally, the TMT commonly includes the CEO and at least the next four most highly paid employees, because publicly traded firms (in the U.S.) must disclose information about these leaders (Daily, Dalton, & Cannella, 2003). To keep the literature search manageable and account for the fact that few studies specified how top executives were defined, we had to rely on the authors to self-report whether their study focused on top executives.¹ This approach aligns with other reviews that focused on different aspects of top executives (e.g., Bromiley & Rau, 2016; Carpenter et al., 2004; Wowak, Gomez-Mejia, & Steinbach, 2017).

In addition, we define personality traits as dispositional, enduring, and relatively stable individual differences that influence cognitions, emotions, decisions, and behaviors (Sackett et al., 2017). Many of the broad personality traits (e.g., neuroticism) have underlying dimensions, or facets, as well (e.g., anxiety and impulsivity are facets of neuroticism) (Costa & McCrae, 1992).

We used two decision criteria to identify constructs to include in the review. First, we included those that are part of larger personality frameworks, such as the HEXACO (which includes the Big 5) and Dark Triad.²

¹ We could not require the studies to use a certain definition of top executives because few studies included such a definition.

² The HEXACO framework resembles the Big 5, but it adds a factor for humility (e.g., modesty) (Ashton & Lee, 2007). It treats this latter variable as humility/honesty, but none of the top executive personality studies examined honesty. The Big 5 traits are extraversion (e.g., sociable), agreeableness (e.g., cooperative), conscientiousness (e.g., dependable), neuroticism (e.g., emotionally unstable), and openness (e.g., creative) (Costa & McCrae, 1992). The Dark Triad traits are narcissism (e.g., grandiose), Machiavellianism (e.g., manipulative), and psychopathy (e.g., callous) (Paulhus & Williams, 2002).

Second, we included the dimensions of positive-self-regard due to the "considerable theory and research" on these constructs in the top executive context (Finkelstein, Hambrick, & Cannella, 2009: 88). Drawing on Judge's et al.'s work (Judge, Erez, Bono, & Thoresen, 2003; Judge, Locke, & Durham, 1997; Judge, Locke, Durham, & Kluger, 1998), Finkelstein et al. (2009) defined positive self-regard as "a constellation of personality characteristics," including "core self-evaluation (CSE), narcissism, hubris, and overconfidence" (p. 77). CSE similarly has been described as "well-validated umbrella construct for studying the impact of executive personality" (Hiller & Hambrick, 2005: 297) and as "a broad personality trait" that includes low neuroticism and high internal locus of control (LOC), generalized self-efficacy, and self-esteem³ (Simsek, Heavey, & Veiga, 2010: 111). Thus, following Wang et al.'s (2016) meta-analysis of upper echelons theory, we included the HEXACO, Dark Triad, and positive self-regard traits, because these variables capture the bulk of the literature on top executive personality. Conversely, we excluded constructs, such as goal orientations ("motivational differences"; Pryor, Holmes, Webb, & Liguori, 2019: 1961), Myers-Briggs types ("cognitive style"; Hough & Ogilvie, 2005: 417), and political ideology ("a set of beliefs"; Gupta, Nadkarni, & Mariam, 2019: 857), which top executive personality scholars rarely treat as personality.

We then took three steps to identify articles to review. First, using the Web of Science (WOS), we searched 40 major journals that regularly publish leadership and management research (both micro and macro) (see Table 1) using versions of the following search terms: *personality* and either *chief executive officer*, *CEO*, *top management team*, *TMT*, *executive*, or *top executive*. Second, we eliminated articles that focused on variables other than the HEXACO, Dark Triad, and positive self-regard traits. We then used each of the selected personality traits as search terms. These two steps yielded 142 articles to consider. We then searched each of these articles to determine whether they focused on top executive personality.⁴ Eliminating papers that did not resulted in 99 articles to review. Table 3 identifies the personality traits examined in each article, and Table 4 summarizes the research about each personality trait included in the review.⁵

We organized the articles for review by sorting them into four themes, which reflect the different leadership topics that top executive personality scholars have explored. Each theme represents the impact of leaders on different aspects of their firms. These themes emerged during our initial screenings of the articles, and three of the authors coded each article independently and resolved disagreements via discussion. During the writing process, some themes were modified, and some articles were recoded. In the end, the authors reviewed and agreed on the final four themes and on which articles belonged to each: (1) leadership of human resources, (2) ethical leadership, (3) strategic leadership and corporate governance, and (4) firm performance.

The themes capture the different levels of analysis at which leadership frequently is studied: leadership of people (human resources) vs. leadership of firms (strategic leadership and corporate governance). They also tie into broader concerns about the purpose and implications of leadership: leadership as a normative/moralistic function (ethical leadership) vs. leadership as an instrumental function (firm performance). Thus, these four themes map the focus of top executive personality research and mirror the broad questions pursued in leadership research more generally.

³ None of the top executive personality studies examined generalized self-efficacy or self-esteem as personality traits.

⁴ WOS searches not only titles, abstracts, and keywords (which are supplied by authors), but also Key Words Plus (which WOS assigns based on the articles' references). In turn, WOS searches sometimes returned articles that were not about the focal topic. Some were about mutable characteristics (e.g., moods), for example, rather than relatively stable traits.

⁵ Table 3 omits Hambrick and Mason (1984) and Hambrick (2007), as they are not about specific personality traits. It also omits prior reviews, as they usually had much broader foci. We discuss prior reviews in the Appendix.

Table 3
Personality traits addressed in the individual studies^a.

Article	Themes ^b	HEXACO Big-5							Dark Triad (DT)				Positive Self-Regard CSE ^d			
		Hum ^c	Big-5 (all)	Op.	Con.	Ex.	Ag.	Ne. ^d	DT (all)	Mach.	Psy.	Narc.	Hubris	Over-Conf.	CSE (all)	LOC
Agnihotri and Bhattacharya (2019)	<u>SLCG</u>											X				
Ahsan (2017)	<u>SLCG</u> , <u>FP</u>											X				
Akstinaite et al. (2020)	<u>FR</u>												X			
Amernic and Craig (2010)	<u>EL</u>											X				
Amernic and Craig (2013)	<u>EL</u>								X				X			
Anglin et al. (2018)	<u>FR</u>											X				
Bauer et al. (2006)	<u>LHR</u>					X										
Bendig, Strese, Flatten, da Costa, and Brettel (2018)	<u>SLCG</u>														X	
Benischke et al. (2019)	<u>SLCG</u>			X	X	X		X								
Boddy (2017)	<u>LHR</u> , <u>FP</u>										X					
Bollaert et al. (2020)	<u>FR</u>											X				
Boone and De Brabander (1993)	<u>FP</u>															X
Boone and Hendriks (2009)	<u>FP</u>															X
Boone and Van Witteloostuijn (1996)	<u>FP</u>															X
Boone, De Brabander, and Van Witteloostuijn (1996)	<u>SLCG</u> , <u>FP</u>															X
Boone et al. (2005)	<u>LHR</u> , <u>FP</u>															X
Buchholz et al. (2020)	<u>EL</u>											X				
Buyl et al. (2019)	<u>SLCG</u>											X				
Chatterjee and Hambrick (2007)	<u>SLCG</u> , <u>FP</u>											X				
Chatterjee and Hambrick (2011)	<u>SLCG</u>											X				
Chatterjee and Pollock (2017)	<u>LHR</u> , <u>SLCG</u>											X				
Chen (2010)	<u>EL</u>											X				
Chen et al. (1998) ^e	<u>FR</u>															X
Chollet et al. (2014)	<u>SLCG</u>			X	X	X	X									
Choi, Chung, and Liu (2018)	<u>SLCG</u>													X		
Colbert et al. (2014)	<u>LHR</u> , <u>FP</u>		X													
Congleton (2014)	<u>EL</u>		X						X							
de Jong et al. (2013)	<u>LHR</u> , <u>FP</u>		X													
Dragoni et al. (2011)	<u>SLCG</u> , <u>FR</u>			X		X										
Elenkov, Judge, and Wright (2005)	<u>SLCG</u>		X													
Engelen et al. (2015)	<u>SLCG</u>													X		
Engelen et al. (2016)	<u>SLCG</u> , <u>FP</u>											X				
Galvin et al. (2015)	<u>SLCG</u>											X				
Gerstner et al. (2013)	<u>SLCG</u>											X				

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Table 3 (continued)

Article	Themes ^b	HEXACO Big-5							Dark Triad (DT)				Positive Self-Regard CSE ^d			
		Hum ^c	Big-5 (all)	Op.	Con.	Ex.	Ag.	Ne. ^d	DT (all)	Mach.	Psy.	Narc.	Hubris	Over-Conf.	CSE (all)	LOC
Giberson et al. (2005)	LHR		X													
Gupta and Misangyi (2018)	EL, SLCG											X				
Gupta et al. (2019)	EL					X						X				
Harrison et al. (2019)	SLCG, FR		X													
Harrison et al. (2020)	SLCG, FP				X	X		X								
Hayward and Hambrick (1997)	SLCG, FP											X				
Herrmann and Nadkarni (2014)	SLCG, FP		X													
Hiller & Hambrick (2005)	SLCG, FP													X		
Hwang et al. (2020)	SLCG; FR												X			
Ingersoll et al. (2019)	EL, FR											X				
Lewin and Stephens (1994)	SLCG, FR								X							X
Lin et al. (2020)	EL, SLCG										X					
Lin and Rababah (2014)	LHR, FP		X													
Liu et al. (2019)	SLCG											X				
Lovelace et al. (2018)	SLCG											X				
Malhotra et al. (2018)	SLCG, FP		X													
Marquez-Illescas, Zebedee, and Zhou (2019)	FR										X					
Miller et al. (1982)	SLCG, FR															X
Nadkarni and Herrmann (2010)	SLCG, FP		X													
Navis and Ozbek (2016)	SLCG, FP										X					
Navis and Ozbek (2017)	SLCG, FP										X					
Oesterle et al. (2016)	SLCG										X					
O'Reilly, Doerr, et al. (2014)	LHR										X					
O'Reilly, Caldwell, et al. (2014)	SLCG, FP		X													
O'Reilly et al. (2018)	EL										X					
Ou et al. (2014)	LHR	X														
Ou et al. (2017)	LHR	X														
Ou et al. (2018)	LHR, FP	X														
Palmer et al. (2020)	LHR, FP								X							
Park et al. (2018)	FP												X			
Patel and Cooper (2014)	FP, FR										X					
Peterson et al. (2003)	LHR, FR		X													
Peterson et al. (2012)	LHR, FP										X					
Petrenko et al. (2016)	EL										X					
Petrenko et al. (2019)	FP	X														

(continued on next page)

Table 3 (continued)

Article	Themes ^b	HEXACO Big-5						Dark Triad (DT)				Positive Self-Regard CSE ^d				
		Hum ^c	Big-5 (all)	Op.	Con.	Ex.	Ag.	Ne. ^d	DT (all)	Mach.	Psy.	Narc.	Hubris	Over-Conf.	CSE (all)	LOC
Poulis and Poulis (2016)	LHR, FP														X	
Raval (2018)	EL											X				
Reina et al. (2014)	LHR, FP											X				
Resick et al. (2009)	LHR, FP											X			X	
Rijsenbilt and Commandeur (2013)	EL											X				
Ritchie et al. (2004)	LHR, FR															X
Roth (1995)	SLCG, FP															X
She et al. (2020)	LHR, SLCG											X				
Simsek et al. (2010)	SLCG, FR														X	
Spangler et al. (2012)	FR					X		X				X				
Tang et al. (2015)	EL												X			
Tang et al. (2018)	EL											X				
Van Scotter and Roglio (2020)	EL											X				
Wales et al. (2013)	SLCG, FP		X									X				
Wang et al. (2016)	SLCG, FP	X										X				
Zhang et al. (2017)	SLCG	X										X				
Zhang et al. (2020)	EL												X			
Zhu and Chen (2015a)	SLCG											X				
Zhu and Chen (2015b)	SLCG											X				
Zor et al. (2019)	SLCG		X													

This table does not include Hambrick and Mason (1984) and Hambrick (2007), as they are not about specific personality traits. It also omits prior reviews, as they usually had much broader foci and/or did not focus on top executive personality. We discuss prior reviews in the Appendix. The underlined theme indicates where the article is discussed in our paper.

^a LHR = Leadership of Human Resources; EL = Ethical Leadership; SLCG = Strategic Leadership and Corporate Governance; FP = Firm Performance; FR = Future Research. The Themes list the major topics in each article: leadership of human resources, ethical leadership, strategic leadership and corporate governance, and firm performance. The underlined theme indicates where the article is discussed in our paper. To reduce redundancy, we discussed most articles only once. This issue is relevant mostly in the firm performance section because some articles examined outcomes not only as dependent variables, but also as mediators between top executive personality and firm performance. We included articles in the firm performance section only if they examined either the direct effect of top executive personality on firm performance or the indirect effect through a mediator.

^b In the HEXACO framework, this variable is treated as humility and honesty.

^c No study examined the other three dimensions of CSE: self-esteem, generalized self-efficacy, and emotional stability. The opposite of emotional stability, neuroticism, is part of the Big 5. Each study on this trait used it as part of the Big 5.

^d This article found no statistically significant main effects of internal LOC, but it did find that firm founders had higher internal LOC about specific situations (i.e., launching new firms) than did those who did not found firms.

Table 4
Summary of extant research on top executives' specific personality traits.

Frame-work	Personality trait	Key insights
HEXACO (Big 5 plus Humility / Honesty)	Humility ^a	Top executive humility creates beneficial outcomes for subordinates (e.g., commitment), TMTs (e.g., TMT integration), and firms (e.g., firm performance). Interestingly, it might coexist with narcissism.
	Openness	Top executive openness can be beneficial for leaders (e.g., strategic thinking), TMTs (e.g., greater empowerment), and firms (e.g., greater flexibility and better firm performance).
	Conscientiousness	Top executive conscientiousness has complex effects, including not only benefits for TMTs (e.g., greater empowerment) and firms (e.g., better strategy implementation), but also troubling outcomes, including less flexibility and risk taking, especially when performance incentives are high.
	Extraversion	Top executive extraversion shapes the ability to build social relationships with and influence others, which can create problems that stem from extraverts' tendency to dominate (e.g., poor subordinate commitment and manipulation of boards) and also benefits that stem from having more social influence over stakeholders (including acquisition targets and investors).
	Agreeableness	Top executive agreeableness creates some beneficial outcomes for TMTs (e.g., TMT cohesion) and firms (e.g., lower fraud), but it can also hurt firms by reducing strategic change and the ability to implement it effectively.
	Neuroticism	Top executive neuroticism has mostly negative effects on TMTs (e.g., lower TMT cohesion and greater TMT relational conflict) and firms (e.g., less strategic change and lower firm performance).
Dark Triad	Machiavellianism	Top executive Machiavellianism has received little attention. The limited research suggests that top executives with this trait may design firm structures to control and manipulate others and increase their influence as leaders, and they might be more prone to unethical behavior (including fraud).
	Psychopathy	Top executive psychopathy has received little attention. The limited research suggests that top executives with this trait might employ lower status TMT members (in an attempt to dominate them) and might be more prone to unethical leadership behavior (including fraud).
	Narcissism	Top executive narcissism is the most heavily studied personality trait in this literature. Its complex effects include negative outcomes for subordinates (e.g., less servant leadership), TMTs (e.g., less TMT behavioral integration), other stakeholders (e.g., manipulating board members), and firms (e.g., more unethical leadership), positive outcomes for firms (e.g., more CSR and greater ability to handle hostile environments), and more volatility for firms (e.g., more extreme risk, fluctuating strategies, and more extreme performance).
Positive Self - Regard	Hubris	Top executive hubris creates largely negative leadership outcomes (e.g., more unethical leadership and less CSR).
	Overconfidence	Top executive overconfidence has received little attention, perhaps because it is unclear if this variable actually is a personality trait. The limited research suggests that it may increase EO, especially if CEOs have more discretion.
	CSE	Top executive CSE has mostly positive outcomes for TMTs (e.g., more transformational leadership) and firms (e.g., more distinct strategies) but some potentially negative effects (e.g., more ambitious strategies can produce either large losses or large profits).
	Internal LOC	Top executive internal LOC has mostly beneficial leadership outcomes (e.g., more innovation and better performance), but TMT diversity in internal LOC might create relational conflict and reduce firm performance.

^a In HEXACO, this variable is treated as humility/honesty, but top executive personality research examined humility only.

Literature review and analysis

Leadership of human resources

There were 20 papers about top executives' leadership of the human resources within their firms (i.e., subordinates). These papers examined how top executives' personalities affect their management and development of followers. Understanding how top executives influence their subordinates is important, because these internal stakeholders conduct daily operations, implement (and perhaps modify) firm strategy, and influence top executives' effectiveness (e.g., Crook, Todd, Combs, Woehr, & Ketchen, 2011). Within this research stream, scholars have identified three ways in which top executives' personalities influence their leadership of human resources.

First, *top executives' personalities affect subordinates' attitudes, behaviors, and effectiveness*. Some research suggests that top executives' personalities influence their interactions with one another and that the effects of these interactions cascade down throughout firms to impact lower-level managers and other employees. For instance, Palmer, Holmes, and Perrewé (2020) argued that CEOs' Dark Triad traits (narcissism, Machiavellianism, and psychopathy) reduce their regard for others and increase their self-focus. In turn, these traits harm CEOs' relationships with TMT members over time, increase TMT members' stress and negative affect, reduce TMT cooperation, and often lead TMT members to engage in destructive leadership of their own subordinates. Similarly, She, Li, London, Yang, and Yang (2020) argued that narcissistic CEOs' have more confidence in their judgments, solicit less input from others, and discourage others' from offering such input. In support, She et al. found that CEO narcissism increased decision speed but reduced decision

comprehensiveness (i.e., consideration of alternatives), and these effects were mediated by lower TMT participation in decision making. Conversely, Ou et al. (2014) found that CEO humility fostered TMT empowerment (e.g., self-management), which fueled TMT integration (e.g., collaboration) and organizational climates that empowered mid-level managers and boosted their engagement, affective commitment, and job performance. Similarly, Ou, Seo, Choi, and Hom (2017) found that CEO humility increased middle managers' job satisfaction and reduced turnover among them. However, TMT fault-lines (i.e., divisive subgroups) offset these benefits of CEO humility, perhaps producing conflict, reducing coordination, and hurting employee morale. Along these lines, Peterson, Smith, Martorana, and Owens (2003) examined the effects of CEOs' Big 5 traits on their TMTs. Notably, Peterson et al. found that whereas CEO agreeableness and openness fueled TMT cohesion and flexibility, respectively, CEO neuroticism reduced both. Thus, top executive personality research identifies CEO personality traits that promote healthier vs. more dysfunctional TMT collaboration processes.

Second, *top executives' personalities influence firms' hiring, retention, and compensation practices*. In this way, the composition and remuneration of firms' workforces may reflect their top executives' personalities. For example, scholars have argued that because psychopathic (Boddy, 2017) and narcissistic (Chatterjee & Pollock, 2017) CEOs prefer to dominate their followers, their TMTs often contain younger, lower-status, and less-experienced individuals. Conversely, drawing on Schneider's (1987) ASA theory (firms attract, select, and retain employees with similar traits), Giberson, Resick, and Dickson (2005) found that CEOs and their workforces had similar levels of conscientiousness, agreeableness, and extraversion. Other studies examined how CEO personality affects the pay of other top executives. Whereas O'Reilly, Doerr, Caldwell, and

Chatman (2014) found that the pay gap between CEOs and TMTs was larger when CEOs were more narcissistic, Ou, Waldman, and Peterson (2018) found that this pay gap was smaller when CEOs displayed more humility. Thus, top executives' dark (e.g., narcissism) and bright (e.g., humility) personality traits may affect human resource management in important ways.

Third, *top executives' personalities shape their leadership styles*. Resick, Whitman, Weingarden, and Hiller (2009) argued that CEOs higher in CSE are more confident and inspiring, for example, but narcissistic CEOs have more trouble relating to others and recognizing others' contributions. In support, they found that CEOs higher in CSE engaged in more vision casting and other manifestations of transformational leadership, and alternatively, CEOs higher in narcissism displayed less contingent reward leadership (e.g., use of incentives). Relatedly, Chatterjee and Pollock (2017) argued that narcissistic CEOs reward loyalty more than merit, and Peterson, Galvin, and Lange (2012) found that narcissistic CEOs identified less with their firms and displayed less servant leadership (e.g., prioritizing others). Thus, this research suggests that top executives' leadership styles at least partly reflect their individual personalities.

Contributions of top executive personality research on leadership of human resources

Our review suggests that top executives' personalities affect their leadership of firms' human resources, including other TMT members. As described above, top executive personality scholars were among the first to find important theoretical linkages among leader personality, leadership style, and key outcomes such as subordinate empowerment and pay. Whereas dark personality traits often result in more destructive and less effective leadership, bright personality traits often have the opposite effects. The top executive personality research on the effects of dark and positive personality traits, in turn, often mirrors the effects of destructive (Schyns & Schilling, 2013) and positive (Kelloway, Weigand, McKee, & Das, 2013) forms of leadership on important follower outcomes, such as commitment, job satisfaction, and performance.

Top executive personality research also raises questions about leadership and leaders' personalities. Prior leadership research suggests that personality explains as little as 1% of the variance in leadership styles and leader behaviors (Bono & Judge, 2004). However, top executive personality research suggests that this percentage can be much higher, depending on the context. Although Peterson et al. (2012) found that CEO personality explained only about 3% of the variance in leadership styles, Resick et al. (2009) found that this percentage was more than 20%. Whereas Peterson et al. (2012) examined small firms (less than \$5 million in annual revenues), Resick et al. (2009) examined larger firms (average annual revenues in excess of \$300 million). Though CEOs in smaller firms can impact followers more directly (Peterson, Walumbwa, Byron, & Myrowitz, 2009), CEOs in larger firms might have fewer resource constraints. Thus, top executives' personalities might have stronger effects in contexts that give them more discretion (Hambrick & Abrahamson, 1995).

Because the top executive context is a special case of leadership, top executives also represent an interesting and important opportunity to extend the research on leaders' personalities, leadership emergence, and leadership effectiveness. For example, extraversion might help individuals ascend into leadership positions and might be especially prevalent in top executives (Bass, 1998; Hogan & Holland, 2003; Ones & Dilchert, 2009). However, there is mixed evidence about whether extraversion enriches top executives' leadership effectiveness. Peterson et al. (2003) found that CEO extraversion had few effects on their leadership of TMTs, and Colbert et al. (2014) found that TMT extraversion related negatively to subordinates' commitment. Other research cautions that extraverts are prone to engage in more affect-based relational conflict (Bono, Boles, Judge, & Lauver, 2002) and counterproductive work

behaviors (Schmidt, Ogunfowora, & Bourdage, 2012) and might contribute to lower team performance (Bell, 2007) when they collaborate with other extraverts. Extraverts also can be less effective at managing task conflict (Cullen-Lester, Leroy, Gerbasi, & Nishii, 2016) and managing more proactive employees (Grant, Gino, & Hofmann, 2011), two conditions which are common in top executives' jobs (given the uncertainty and initiative needed at top levels of the firm) (Hambrick, Finkelstein, & Mooney, 2005; Porter & Nohria, 2018). Thus, from a practical standpoint, TMTs composed primarily of extraverts might have difficulty leading collaboratively. More generally, the personality "patterns needed to predict ... executive success do not necessarily correspond to mean profile patterns found among executives," which suggests that the personality traits that help top executives attain leadership positions might differ from the traits that promote success in such positions (Ones & Dilchert, 2009: 168). In this way, the top executive context has provided fresh insights about possible differences between the personality traits that foster leader emergence vs. leader effectiveness. This issue can inform not only extant theory about top executives and leadership, but also the practice of selecting and evaluating CEOs and other TMT members.

Therefore, the top executive personality literature informs our understanding of leaders' personalities and their consequences for firm employees. Turning to another important topic in leadership research, we now examine how top executive personality shapes ethical leadership.

Ethical leadership

We identified 17 papers on ethical leadership. The increasing visibility of top executives, and the growing calls for them to act responsibly and ethically (McGahan, 2018; Neely Jr. et al., 2020; Sosik, Gentry, & Chun, 2012), underscore the importance of this research. Perhaps reflecting a general distrust of executives, most of this literature examined the Dark Triad traits. For instance, Congleton (2014) argued that Dark Triad traits reduce individuals' concern for others and, thus, firms might act less ethically when their top executives display such traits. More generally, the literature suggests that top executives' personalities affect two broad aspects of ethical leadership.

First, *top executives' personalities influence firms' compliance with legal standards*. For instance, Amernic and Craig (2013) found that CEO communications at News Corp displayed indicators of CEO hubris or narcissism prior to the firm's illegal phone hacking scandal. Similarly, O'Reilly, Doerr, and Chatman (2018) found that narcissistic CEOs were more likely to launch products that infringed on others' intellectual property and were less likely to settle lawsuits when sued for such violations. Thus, narcissistic CEOs might have less regard for the consequences of illegal behaviors. Along these lines, Zhang, Ren, Chen, Li, and Yin (2020: 465) found that CEO hubris increased the "frequency and severity of firm's pollution discharges above the regulatory standard", especially in firms that faced weaker competition and had stronger political ties.

Some studies on illegal behavior focused on earnings management and accounting fraud specifically. Narcissistic CEOs often have an unhealthy obsession with portraying themselves favorably, which can increase their temptation to manipulate earnings (Amernic & Craig, 2010; Raval, 2018). In support, there is evidence that firms with narcissistic CEOs produce less accurate earnings forecasts and tend to engage in more earnings management⁶ (Lin, Lin, & Fang, 2020), earnings restatements (Buchholz, Lopatta, & Maas, 2020), and accounting fraud (Rijsenbilt & Commandeur, 2013). These effects might be stronger when CEOs have incentives to misreport, can escape detection, face few penalties (Chen, 2010), and are male (Ingersoll, Glass, Cook, &

⁶ Most research focuses on earnings management to inflate earnings, but CEOs also can adjust earnings downwards, often to lower future expectations. Earnings management is accomplished in several ways, such as cash flow manipulation (Lin et al., 2020).

Olsen, 2019). By contrast, Van Scotter and Roglio (2020) found that CEO agreeableness reduced fraudulent practices. Thus, top executive personality can have important legal consequences and might affect the accuracy of reported earnings and accounting data.

Second, *top executives' personalities affect firms' corporate social responsibility (CSR)*. Examples of CSR include commitment to prosocial causes, such as diversity and care for the environment. Petrenko, Aime, Ridge, and Hill (2016) argued that narcissistic CEOs' grandiosity encourages them to pursue CSR for the media attention it can bring. Consistent with this argument, CEO narcissism increased firms' CSR, especially when the firms' previous CSR had a track record of garnering media attention. Relatedly, Tang, Mack, and Chen (2018) argued that narcissistic CEOs use CSR to distinguish themselves from other CEOs. In support, they found that firms with narcissistic CEOs engaged in more CSR, especially when peer firms engaged in less CSR. Conversely, arguing that hubristic CEOs care less about impressing others, Tang et al. (2018) found that firms with hubristic CEOs engaged in less CSR, especially when peer firms did likewise. Tang, Qian, Chen, and Shen (2015) similarly found that CEO hubris was negatively related to CSR, but less so when their firms faced more resource constraints, uncertainty, and competition. These findings suggest that narcissism and hubris might be separate constructs and, future, that more hostile environments may encourage (even hubristic) CEOs to behave more responsibly to maintain the support of key stakeholders. Lastly, Gupta et al. (2019) argued that narcissistic and extraverted CEOs have more discretion, because they can convince important stakeholders that their preferences are appropriate. They found that the CSR in firms with narcissistic and extraverted CEOs aligned more with the CEOs' supposed preferences (based on their political ideology). Together, this research suggests that top executives' personalities influence ethical leadership by affecting not only corporate misconduct, but also more desirable behaviors like CSR.

Contributions of top executive personality research on ethical leadership

Top executive personality research identifies personality traits that influence ethical leadership. Illegal behavior is more common in firms led by top executives with dark traits that increase self-focus and a sense of superiority. These findings parallel other leadership literature, which frequently has linked leaders' narcissism to unethical behavior in other contexts (Blickle, Schlegel, Fassbender, & Klein, 2006; Kish-Gephart, Harrison, & Treviño, 2010; Perri, 2011). The findings about top executives are important, considering their broader impact and visibility.

In addition, some top executive personality research is counterintuitive and raises new questions about leader personality. Although narcissists' selfishness can lead to social problems (Campbell, Bush, Brunell, & Shelton, 2005), the top executive personality literature suggests that CEO narcissism also can have social benefits in the form of increased CSR. Because CSR can create financial and reputational benefits (Siegel, 2009), narcissistic top executives might pursue CSR out of self-interest and for the attention accompanying it. These findings enrich understanding of leaders' personalities by identifying potential positive byproducts of this dark personality trait. Taken together, the potential positive and negative effects of narcissism on ethical leadership help inform the growing literature on firms' responsibilities and contributions to the broader society.

Interestingly, there is very little top executive personality research on other personality traits, especially bright traits, that foster ethical leadership. In this regard, top executive personality scholars should draw on other leadership research that has examined this issue. For instance, research on lower-level supervisors suggests that CSE reduces the appeal of unethical behavior by increasing self-respect, confidence, and self-discipline (Greenbaum, Mawritz, & Eissa, 2012). Thus, CSE might foster more ethical leadership. Conversely, speculating that

more conscientious leaders have a strong need to appear competent even when they are not, Blickle et al. (2006) found that white-collar crime was more common among conscientious managers. The potential for dark personality traits to foster ethical leadership in some situations, and for certain bright personality traits to produce less ethical leadership, suggests that the relationship between leaders' personalities and their ethical behaviors might be more complex than previously thought.

Lastly, top executive personality research extends our understanding of external constraints on leaders' behavior. For instance, although narcissistic leaders probably need more monitoring (because they tend to dismiss others), such leaders also seem more adept at disregarding, manipulating, or otherwise weakening the influence of professional monitors, such as accountants and regulators. Thus, the external constraints on leaders' behavior sometimes are affected endogenously by the leaders who are subject to those constraints. These insights can shed light on leader misconduct and the corporate scandals they cause. They also might have implications for corporate governance research and practice, as explored further in the following section.

Strategic leadership and corporate governance

We identified 44 articles that focused on strategic leadership and corporate governance. Strategic leadership refers to the management of entire firms, including decisions about major investments (e.g., internationalization), structure, and strategic change and innovation (Bonardi, Hitt, Vera, & Withers, 2018; Finkelstein et al., 2009). Corporate governance refers to the practices used (often by shareholders) to affect strategic leaders' decisions and their impact on stakeholders.

First, *top executives' personalities affect firm strategy by influencing their propensities to act self-servingly*. Narcissistic CEOs often believe their own identity is critical to the firm, may be unable to differentiate the firm's interests from their own, and may choose firm strategies that are more self-serving. For instance, they are more likely to choose firm strategies that increase their personal prestige, even when those strategies are not financially lucrative (Galvin, Lange, & Ashforth, 2015) and they are more likely to prioritize their own interests over those of shareholders (Lovelace, Bundy, Hambrick, & Pollock, 2018). As a result, narcissistic top executives probably are more prone to act opportunistically by seeking their self-interests with little regard for others.

Following from the above, *top executives' personalities influence their firms' strategic actions*. Strategic actions are firm behaviors that usually are complex, expensive, risky, and difficult-to-reverse (Wang et al., 2016). Top executives influence strategic actions through the choices they make about which actions are appropriate and desirable and through their ability to influence others (Samimi, Cortes, Anderson, & Herrmann, 2020). For instance, Hiller and Hambrick et al. (2005) argued that CSE increases CEOs' drive, confidence, and decisiveness and, in turn, their preference for larger and more ambitious strategic actions. Similarly, firms with narcissistic CEOs tend to pursue more and larger acquisitions (Chatterjee & Hambrick, 2007), greater internationalization (Agnihotri & Bhattacharya, 2019; Oesterle, Elosge, & Elosge, 2016), and perhaps other highly visible actions that attract attention. Along these lines, Chatterjee and Hambrick (2011) argued that narcissistic CEOs are less cognizant of objective performance cues, but are very responsive to media praise, when assessing their firms' capabilities and making strategic choices. They found that firm performance (e.g., return on assets; ROA) and media praise (e.g., awards) increased the riskiness of the firms' strategic actions (e.g., size of acquisition premiums), but CEO narcissism weakened the performance effect and strengthened the media praise effect. Because of their self-focus, narcissistic CEOs also might have more influence over strategic actions when they have more power, celebrity status, and discretion (Agnihotri & Bhattacharya, 2019). Through a meta-analysis of related work, Wang et al. (2016) found that CEO positive self-regard, some of its indicators (e.g., CSE), and some Big 5 traits (e.g., low neuroticism) increased the

frequency, expense, and riskiness of firms' strategic actions. Together, this research suggests that top executives' personalities influence their personal preferences, the strategic actions that are attractive to them, and the strategic actions that their firms pursue.

Perhaps for similar reasons, *top executives' personalities influence their firms' propensities for strategic change*. Though often necessary, strategic change can be challenging. Nonetheless, arguing the strategic change draws attention to the CEO, Chatterjee and Hambrick (2007) found evidence that firm strategy changes more frequently and extremely in firms with narcissistic CEOs. Likewise, Gerstner, König, Enders, and Hambrick (2013) found that pharmaceutical firms with narcissistic CEOs invested more in biotechnology when the news media focused more on biotechnology. Conversely, narcissistic CEOs might prefer to avoid markets that generate little attention (e.g., Ahsan, 2017). Navis and Ozbek (2016, 2017) similarly argued that firms with narcissistic CEOs tend to change strategy and enter markets where they can receive attention. However, they also argued that the narcissism hinders the learning that is needed in new markets (Liu, Li, Hao, & Zhang, 2019) and leads to subsequent exits from such markets. Further, whereas Lewin and Stephens (1994) argued that strategic change is more common in firms with CEOs who are high on internal LOC (perhaps because such CEOs believe they can redesign firm strategy to control their environments), Choi, Chung, and Liu, Fisher, and Chen (2018) found that overconfident CEOs are more rigid and less willing to initiate change, especially if they have a history of prior success. Lastly, Herrmann and Nadkarni (2014) and Nadkarni and Herrmann (2010) argued that the Big 5 traits influence strategic change by affecting CEOs' perceived or actual ability to manage stakeholders and uncertainty. Whereas CEO extraversion and openness fostered strategic change, CEO conscientiousness, agreeableness, and neuroticism reduced it (however, see Elenkov, Judge, & Wright, 2005). Thus, top executives' personalities appear to affect their willingness or (perceived) ability to handle the challenges of strategic change.

At the intersection of research on strategic actions and strategic change, scholars also have found that *top executive personalities affect firm innovation*. Arguing that internal LOC increases leaders' confidence that they can handle the uncertainty of innovation, Miller, Kets de Vries, and Toulouse (1982) found that firms employ more new products, services, and technologies when their top executives are high on internal LOC. Related research suggests that CEO CSE (Simsek et al., 2010) and overconfidence (Engelen, Neumann, & Schwens, 2015) increase firms' use of innovative, proactive, and risky strategies (i.e., entrepreneurial orientation; EO), especially in industries where CEOs need more discretion due to rapid and unpredictable technological change. It may be that such CEOs are more confident that they have knowledge to initiate such strategies (Bendig, Strese, Flatten, da Costa, & Brettel, 2018). Lastly, Zhang, Ou, Tsui, and Wang (2017) argued that CEO narcissism and humility can co-exist (e.g., CEOs display different traits in different settings) and that the combination of these traits helps leaders inspire and organize followers more effectively. In support, these scholars found that firms were more innovative when their CEOs scored high on both narcissism and humility.

In addition, scholars have found *top executive personality affects firm strategy by influencing inter-organizational relations*. Chollet, Géraudel, and Mothe (2014) argued that new customers are less willing to do business with firms that have less conscientious CEOs, which can hinder these firms' entry into new markets. In turn, CEO social capital (e.g., strong ties) was more important for business referrals (which support new market entry) for less conscientious CEOs. Relatedly, Malhotra, Reus, Zhu, and Roelofsens (2018) argued that board appointments at other firms help CEOs build relationships with peers and identify acquisition targets. They found that CEOs' extraversion helped them secure such appointments, which increased the frequency and size of their own firms' acquisitions. In addition, Gupta and Misangyi (2018) found that firms were more likely to imitate the strategic actions of other firms in their respective industries, but this effect was weaker when those other firms had more narcissistic CEOs. This study suggests

that CEOs may lack confidence in the strategic decisions made by other CEOs who are narcissistic.

As the findings above suggest, the consequences of top executives' personalities frequently are not in their firms' best interests. Examples include engaging in more expensive acquisitions, unwillingness to enact strategic change when it is needed, and lower innovation. In turn, according to agency theory, corporate governance is designed to influence strategic leaders' decision making.

Consistent with this view, *corporate governance shapes the impact of top executive personality on firm strategy*. Hayward and Hambrick (1997), for example, found that the positive effect of CEO hubris on acquisition premiums was weaker when boards were more independent (e.g., CEOs did not chair them). Similarly, Malhotra et al. (2018) found that the positive effects of CEO extraversion on firms' acquisitions (see above) were weaker when board policies made it easier to remove the CEO. Further, Buyl, Boone, and Wade (2019) found that CEO narcissism increased the riskiness of bank policies (e.g., loans offered), but stronger board monitoring weakened this effect. Therefore, some of the research suggests that boards can be effective in managing the influence of executive personality and thereby in shaping CEO behavior.

Other research suggests that *certain top executive personality traits limit the effectiveness of corporate governance*. For instance, whereas boards often provide incentive compensation to discourage top executive risk aversion and improve strategy, Benischke, Martin, and Glaser (2019) found that stock options reduced risk taking among conscientious CEOs. Thus, the effectiveness of incentive compensation might depend on CEOs' personalities. Further, Chatterjee and Pollock (2017) argued that narcissistic CEOs ingratiate with board members to minimize their opposition to the CEOs' intended strategies. Likewise, Zhu and Chen (2015a) found that powerful, narcissistic CEOs leveraged their power to assemble more permissive boards (e.g., composed of members who have experience with narcissistic CEOs). Along these lines, Zhu and Chen (2015b) found that narcissistic CEOs chose strategies (e.g., internationalization) with which they had experience, but they avoided strategies with which their board members had experience, especially when the CEOs were more powerful (e.g., chaired the board) or obtained their experience at higher status firms. In this way, CEOs might be able to minimize the board's influence and exert their dominance.

Contributions of top executive personality research on strategic leadership and corporate governance

The literature reviewed in this section suggests that firm strategy often reflects the influence of top executives' personalities and that corporate governance can affect the extent of this influence. Top executives' personality traits shape their pursuit of firm strategies that reflect their own interests and can increase their confidence or ability to initiate more complex strategies. Although boards can restrict top executives in some respects, certain personality traits also help top executives limit the board's involvement and/or effectiveness. More generally, top executives' personalities appear to influence their discretion to enact the strategies that they prefer.

Some of this research is a straightforward extension of research on leaders' personalities conducted in other contexts. Mirroring the findings reviewed above, for example, scholars have found that leaders' CSE increases their confidence, their focus on the possible benefits of their decisions (instead of the possible downsides), and other attributes that increase leaders' degree of influence (Ferris et al., 2011; Zhang & Parker, 2019). Likewise, research has shown that rules and powerful others can reduce personality's impact (Mischel, 2004), but some personality traits (e.g., low neuroticism) help leaders minimize resistance from others (Oreg & Sverdluk, 2014).

Top executive personality research on strategic leadership and corporate governance also raises new questions for leadership research and practice. The impact of personality depends on the nature of the tasks individuals are performing (Zaccaro, Green, Dubrow, & Kolze,

Table 5
Future research on top executive personality.

Theme	Topic
Closer Examination of the Individual	We need to know more about the leaders who become top executives. There are opportunities to examine facets of top executives' personality traits. There are opportunities to examine the nonlinear effects of top executive personality. There are opportunities to examine individual-level variables—including other traits, states, minority status, cognitions, and information processing—that shape the impact of top executive personality.
Top Management Teams	We need to understand the impact of personality differences within TMTs. We need to understand other operationalizations of TMT personality, including the mean, maximum, or minimum levels (or distributions) of personality traits on the team There are opportunities to study person-team personality fit in TMTs.
Methods: Measurement	If possible, use multiple measures of each top executive personality trait and present validity evidence. Employ practices that increase survey response rates. Employ practices that increase the accuracy of raters' judgments of personality when using other-report surveys. Minimize concerns about reverse causality and confounds. Report comprehensive descriptive statistics. Advances in big data and the use of neuroscience offer new opportunities to measure top executive personality
Methods: Endogeneity	We need to understand reverse causality. Use sample rebalancing methods to address omitted variables that result in non-random assignment across groups. Two-stage models with instrumental variables can be used to address selection issues, but there are opportunities to improve the use of these models in top executive personality research. Employ experimental methods with random assignment.
The Influence of Context	We need to understand the role of personality in different leadership and top executive positions. There are opportunities to examine how firm conditions shape the effects of top executive personality. Scholars should examine how external environments—including industry, country, institutional, cultural, and economic contexts—shape the effects of top executive personality.

2018). For this reason, some personality traits can be less beneficial for top executives than for other leaders. Conscientiousness often increases leaders' dutifulness and reliability (Fleming, Heintzelman, & Bartholow, 2016; McCabe, 2014) and can increase leader effectiveness in most contexts (Judge et al., 2002). However, top executive conscientiousness has few or even negative effects on some types of strategic actions and strategic change, especially when the top executives face more uncertainty (Herrmann & Nadkarni, 2014) or have financial incentives that increase the pressure to perform (Benischke et al., 2019). More generally, conscientious leaders often prefer order and predictability, which can increase their aversion to change (LePine, Colquitt, & Erez, 2000). This aversion can be problematic in today's economy, which often demands risk taking, innovation, and flexibility (Hitt, Arregle, & Holmes (2021); Hitt, Haynes, & Serpa, 2010). This possibility underscores the importance of the top executive context for advancing understanding of leadership and leaders' personalities. Further, although incentives are the largest and typically the most expensive portion of executive compensation (Devers, Cannella Jr., Reilly, & Yoder, 2007), some forms of incentive pay might be ineffective or counterproductive for top executives with certain personality traits, including conscientiousness. In this regard, top executive personality research might improve the practice of corporate governance by helping boards design more effective compensation packages that account for the personalities of top executives (Wowak et al., 2017).

Similarly, top executive personality research poses questions about the effects of leader narcissism. Research on retail managers and student leaders suggests that narcissistic leaders hold inflated views of their own performance, and they become less popular and are viewed as less effective leaders over time (Campbell, Hoffman, Campbell, & Marchisio, 2011; Leckelt, Küfner, Nestler, & Back, 2015; Nevicka, van Vianen, De Hoogh, & Voorn, 2018). These findings raise critical questions about how narcissists ascend to top executive positions, maintain amicable relations with boards and other stakeholders, and remain in these positions. One possibility (unexamined in prior work) is that they change jobs, firms, industries, and locations more often.

Overall, it sometimes is difficult to determine when top executives are pursuing their own interests vs. shareholders' interests. Regardless, top executives' personality appears to shape strategic leadership and corporate governance in important ways. The financial implications of these decisions require more research, however, as discussed in the following section.

Firm performance

We identified 33 papers that examined top executive personality and firm performance.⁷ An analysis of these studies suggests that they examined this linkage in one of three ways.

Leaders' personalities affect firm performance through several intervening mechanisms, such as follower commitment and firm strategy (Fischer, Dietz, & Antonakis, 2017). Often, scholars have identified theoretical and empirical linkages between top executive personality and firm performance without modeling the indirect effects explicitly. Arguing that hubristic CEOs are overconfident, resist input, and make poor strategic decisions, for instance, Park, Kim, Chang, Lee, and Sung (2018) found a negative relationship between CEO hubris and firm performance. Examining the Big 5, Harrison, Thurgood, Boivie, and Pfarrer (2020) argued that investors believe that conscientious CEOs are more deliberate, neurotic CEO are more unpredictable, and extraverted CEOs tend to overestimate their own abilities. Consistent with their arguments, they found that CEO conscientiousness strengthened the positive effect of firms' stock price volatility on investor returns, but CEO neuroticism and extraversion weakened this positive effect.

Scholars have taken a similar approach to study the performance implications of CSE and its components. For example, Poulis and Poulis (2016) argued that CEOs' CSE inspires confidence and elicits TMT commitment to firms' current strategies, but these factors could hurt firm performance in complex environments that require flexibility. In addition, arguing that CEO internal LOC enables learning and other benefits, scholars have found positive relationships between CEO internal LOC and firm performance (Boone & de Brabander, 1993; Boone, de Brabander, & van Witteloostuijn, 1996; Boone & Van Witteloostuijn, 1996) and growth (Roth, 1995). Conversely, Boone and Hendriks (2009) found that differences in TMT members' internal LOC related negatively to firm performance, perhaps by fostering destructive relational conflict. Thus, these studies explained the theoretical and

⁷ Importantly, some studies linked top executives' personalities to particular outcomes and, then, linked those outcomes to firm performance without examining either the direct effects of top executives' personalities on firm performance or mediation (whereby top executives' personalities influence firm performance through some intervening variable). We do not review such papers in the section on firm performance. Rather, we review them in the section on the outcomes that they examine directly.

empirical linkages between top executive personality and firm performance, but they did not test for mediation explicitly.

Taking a similar approach, some of the firm performance studies have shed light on the complicated nature of narcissism. Arguing that narcissists' decisions and behaviors are volatile and extreme, [Chatterjee and Hambrick \(2007\)](#) found that firms with narcissistic CEOs tended to have either very good or very poor performance (e.g., ROA), not average performance, and often experienced more extreme performance variation annually. Building on this work, [Patel and Cooper \(2014\)](#) argued that narcissistic CEOs pay little attention to possible losses that could result from their decisions. In support, firms with narcissistic CEOs performed worse at the onset of the 2007–2008 Financial Crisis. Perhaps because these same qualities helped firms handle the Crisis, firms with narcissistic CEOs also performed better as the Crisis subsided. Further, [Engelen, Neumann, and Schmidt \(2016\)](#) argued that narcissistic CEOs' lack of empathy creates a poor work environment, but this narcissism also can help the CEOs handle challenging industry conditions. Though lack of empathy hurts relationships with employees, it also enables decisiveness by minimizing the effects of emotions on CEOs' decisions ([König, Graf-Vlachy, Bundy, & Little, 2020](#)). Consistent with these arguments, Engelen et al. found that although CEO narcissism generally reduced the positive impact of EO on investor returns, CEO narcissism had the opposite effect for firms in more dynamic and concentrated industries. Thus, mirroring its complexity at the individual level, CEO narcissism influences firm performance in diverse ways.

Second, *scholars have empirically modeled several individual-, team-, and firm-level factors that mediate the link between top executive personality and firm performance.* At the individual level, [Colbert et al. \(2014\)](#) found that CEO transformational leadership mediated the positive effects of CEO emotional stability (i.e., low neuroticism) and openness on firm performance (e.g., ROA). Because top executive personality affects their cognitions, emotions, decisions, and behaviors, and considering the vast leadership literature that examines these effects, it is striking that very few top executive personality studies examined individual-level mediators.

Top executive personality also affects firm performance via team-level mediators, typically TMT processes. For instance, [Ou et al. \(2018\)](#) found that CEO humility increased ROA, partly by promoting TMT behavioral integration. Similarly, [de Jong, Song, and Song \(2013\)](#) found that founders' (typically CEOs') openness increased firm performance by fostering TMT task conflict and reducing TMT relational conflict. Although conscientiousness and agreeableness had similar effects through TMT task conflict, conscientiousness and neuroticism reduced firm performance because they enabled TMT relational conflict. Further, [Boone, Olffen, and Witteloostuijn \(2005\)](#) found that TMTs with higher mean internal LOC gather more complete information before making decisions, which increased firm performance. Lastly, [Reina, Zhang, and Peterson \(2014\)](#) argued that the effects of CEO personality on TMT processes and firm performance depend on CEOs' degree of identification with their firms. When they identified strongly (weakly), TMT behavioral integration mediated the positive (negative) effect of CEO narcissism on ROA. Thus, top executives' personalities appear to affect firm performance via their effects on TMT processes.

Studies also focused on firm-level mediators. [Petrenko, Aime, Recendes, and Chandler \(2019\)](#) found that firms' future earnings projections are lower in firms with humble CEOs. In turn, the firms were able to meet or exceed those projections, thereby producing superior stock returns. Most of the work on firm-level mediators, however, has examined strategic change and innovation. [O'Reilly, Caldwell, Chatman, and Doerr \(2014\)](#) found that CEO openness led to more adaptable firm cultures, which led to firm growth. Similarly, [Nadkarni and Herrmann \(2010\)](#) and [Herrmann and Nadkarni \(2014\)](#) suggested that the Big 5 traits affect firm performance through their effects on firms' strategic flexibility. They found that CEO extraversion and openness generally enabled such flexibility and, thus, increased firm performance. Conversely, CEO conscientiousness and neuroticism generally had negative effects

on flexibility and firm performance. Lastly, [Wales, Patel, and Lumpkin \(2013\)](#) found that CEO narcissism increased the firm's EO, which increased the annual variability in firm sales, further supporting the view that narcissists are more volatile. More generally, CEOs' personalities appear to affect their willingness and ability to adapt as needed, and this adaptability or the lack thereof affects firm performance.

Contributions of top executive personality research on firm performance

The studies reviewed in this section support a common message. Top executives' personalities can influence firm performance in important ways, often by shaping collaboration processes on TMTs and throughout the firm, relationships with investors, and strategic decisions. Some of these findings align with other research on leaders' personalities. For instance, similar to some of the top executive personality studies, [Judge and Hurst \(2008\)](#) found that personality traits associated with more positive self-regard tend to promote more career success in general.

The studies in this section also advance our understanding of leaders' personalities. Whereas most leadership research has focused on leaders and their effects on followers ([Uhl-Bien, Riggio, Lowe, & Carsten, 2014](#)), top executive personality research demonstrates how leaders also affect entire firms and their external stakeholders, especially shareholders. The top executive context also contributes to theory about leaders' personalities. Although conscientiousness and agreeableness improve performance in many leadership contexts, including among students, professionals, and some managers ([Barrick, Mount, & Judge, 2001](#)), the top executive context might negate or reverse some of these benefits. CEO conscientiousness, for example, has mixed effects on TMT processes and, thus, might have negligible or negative effects on firm performance overall. Similarly, agreeableness can reduce top executives' ability to implement strategic change to improve firm performance. From a practical standpoint, these findings indicate a need to consider how top executives' and other leaders' personalities fit with their firms' contexts, such as current TMT characteristics and whether strategic change is needed to promote a turnaround.

Top executive personality research has refined our understanding of narcissism in similar ways. Whereas some research on student leaders suggests that narcissism "is a potentially positive trait, when expressed in moderation" ([Grijalva, Harms, Newman, Gaddis, & Fraley 2015: 18](#)), others suggest that it has a "largely unconstructive impact on social behavior" ([Campbell, Bonacci, Shelton, Exline, & Bushman, 2004: 29](#)). Adding to the debate, top executive personality research suggests that narcissism fosters extreme variations in leaders' behavior (e.g., strategies that lack consistency), often producing either very good or very poor firm performance and greater performance volatility overall. Understanding the conditions under which narcissism is beneficial vs. harmful, in turn, could inform the research and practice of leader selection and retention.

Most future contributions probably will be derived from studies that incorporate additional variables to explain why and when top executive personality matters. It appears to influence firm performance by interacting with and affecting other individual-, team-, and firm-level variables, and these effects probably vary across contexts as well. Explaining the processes that identify how micro-level variables shape higher-order outcomes can enrich our understanding of leadership by linking the micro and macro sub-disciplines of management more tightly together ([Barney & Felin, 2013; Palmer et al., 2020](#)). With these thoughts in mind, we turn to future research.

Future research on top executive personality

The following future research agenda cuts across the four topics examined above, identifies opportunities for top executive personality scholars to draw on leadership research from other contexts, and addresses methodological concerns. [Table 5](#) summarizes this future research agenda.

Closer examination of the individual leader

Top executive personality research has focused mostly on how broad personality traits affect subordinates and firms. There are many opportunities to take this research in new directions.

First, *we need to know more about the leaders who become top executives*. The leadership literature has identified personality traits that help individuals achieve leadership positions (Judge et al., 2002), but few studies have examined the personality traits that help leaders become top executives, and these studies often have produced mixed results.⁸ The means and distributions of certain personality traits might vary between top executives and other leaders. There also could be differences between CEOs and other TMT members (Booth, Murray, Overduin, Matthews, & Furnham, 2016). These issues are important because, as illustrated above, the personality traits that foster leadership effectiveness might differ for top executives vs. other leaders.

Understanding the personality traits that are common among top executives could inform choices about which personality traits to study. Around half of the articles in Table 3 focused on narcissism and hubris. The heavy focus on these two constructs reflects an assumption that top executives tend to be more narcissistic and hubristic than other leaders (Chatterjee & Hambrick, 2007; Hayward & Hambrick, 1997), but few systematic studies have examined this assumption. Further, if there is less variance in personality traits across top executives (i.e., if they tend to have similar personalities), range restriction could reduce statistical power (Lord, De Vader, & Alliger, 1986). Thus, we need empirical studies, including meta-analyses, to identify which personality traits are typical for top executives. It also could be important to identify if and how these traits vary across firms (e.g., startups vs. established firms), industries, and countries. More generally, although the top executive personality research has revealed much about the effects of narcissism and hubris, it may be helpful to supplement the heavy focus on these two constructs with additional research on other personality traits, notably the Big 5, which have received more attention in the general leadership literature than in the top executive personality literature.

Second, *there are opportunities to examine facets of top executives' personality traits*. Different facets of the same broad personality trait can affect decisions and behavior in contrasting ways (Chae, Park, & Choi, 2019). The facets of conscientiousness, for example, include achievement striving (fosters action and persistence) and deliberation (fosters analysis and delays) (Costa & McCrae, 1998). CEO achievement striving could produce competitive aggressiveness and better firm performance (e.g., Ferrier, 2001), but CEO deliberativeness could produce slower and more cautious behavior, perhaps having neutral or negative effects on firm performance (e.g., Miller & Chen, 1994). If the effects of the different facets offset one another, studying the broader personality traits could produce null effects. Thus, studying personality facets could enable new theoretical and practical insights and explain relevant outcomes with more precision.

Third, *there are opportunities to examine nonlinear effects of top executive personality*. Research on other leaders suggests that there might be optimal levels of certain personality traits. Scores that are too high or too low could have different and even harmful effects (Hogan & Hogan, 2001; Landay, Harms, & Cr   , 2019). Nonlinear effects might exist because different personality facets manifest at different levels of the broader traits (Grijalva et al., 2015). For instance, extreme conscientiousness can produce obsessive compulsiveness (Kaiser, LeBreton, & Hogan, 2015; Le et al., 2011), which can lead to micromanaging and indecision. Likewise, extreme narcissism can produce destructive grandiosity and a disregard for others (Grijalva et al., 2015). In this way, bright traits are not always helpful, and dark traits are not always harmful (Pierce & Aguinis, 2013; Smith et al., 2018). To illustrate, CEOs who are too

disagreeable might have poor relations with stakeholders, but CEOs who are too agreeable might struggle to negotiate with stakeholders effectively (see Nadkarni & Herrmann, 2010). Further, top executives who are very high in openness might be more imaginative and excel at strategic leadership (which requires creativity) but might be less focused on day-to-day operational leadership (which is more routine-oriented).

Fourth, *there are opportunities to examine other individual-level variables that shape the impact of top executive personality*. Leaders' personalities mold and interact with leaders' other traits, states, and cognitions (Fischer et al., 2017), producing within-person variation in the effects of some personality traits at different times (Zaccaro et al., 2018). Examining personality without considering other leader attributes makes it difficult to isolate the effects of specific personality traits and has led to inconsistent findings (Samimi et al., 2020). In turn, some leadership scholars take a holistic approach to studying personality by examining interactions between personality traits or between personality traits and other individual differences (Foti & Hauenstein, 2007). Leaders' personalities also affect their ability to leverage their own human capital (Ployhart & Moliterno, 2011). Whereas openness and extraversion help top executives obtain work experiences that enrich the value of their human capital (Dragoni et al., 2014; Dragoni, Oh, Vankatwyk, & Tesluk, 2011), neuroticism or narcissism undermine leaders' relationships with followers, decrease their ability or willingness to learn, and could reduce the value of their human capital over time (Campbell et al., 2011; Judge & Zapata, 2015).

Similarly, although minority status has received little attention in top executive personality research, it could shape the impact of leaders' personalities in important ways. Observers often expect certain leaders—such as members of the LGBTQ community, racial minorities, and women—to display certain personality traits, which in turn affects how observers react to the traits the leaders actually display (Anglin, Wolfe, Short, McKenny, & Pidduck, 2018; Pillemer, Graham, & Burke, 2014). On the one hand, for example, female CEOs might be more successful when they have a more positive self-regard, given the obstacles they must overcome to become CEOs (Wang, Holmes Jr., Devine, & Bishoff, 2018). On the other hand, positive self-regard might be more helpful for male CEOs, because gender stereotypes discourage agentic behavior in females (Ingersoll et al., 2019). Disentangling such puzzles can extend our theoretical understanding of stereotypes, the challenges they create for certain groups, and leaders more generally.

Relatedly, scholars should examine interrelationships among top executives' personalities and malleable states, such as attitudes, moods, and emotions. Such states can explain decisions, behavior, and performance at least as well as personality does (Chen, Greene, & Crick, 1998; George, 1991). Examples of malleable states include leaders' affect, stress level, fatigue, and other factors that change over the course of a day or a few days (Kelemen, Matthews, & Breevaart, 2020). These states affect coping and self-regulation, which can produce intra- and inter-individual variations in the influence of leaders' personalities over time (Kaiser et al., 2015; Spain, Harms, & Wood, 2016). Similarly, life events can lead to temporary and rather immediate changes in variables like overconfidence (Hwang, Kim, & Kim, 2020), which raises questions about whether such variables are actual personality traits, though they often are treated as such in conceptualizations of positive self-regard (Finkelstein et al., 2009). Perhaps some of these variables have both state-like and trait-like properties, which suggests that they might consist of multiple constructs, rather than a single construct. Due to their transient and ephemeral nature, studying state-like constructs, and differentiating them from enduring personality traits, may require close contact between scholars and the top executives under examination.⁹

Lastly, we need to understand the intervening cognitions and information processing that explain the effects of top executive personality.

⁸ Harms, Roberts, and Wood (2007) found that no Big 5 traits predicted whether individuals became top executives, but Ones and Dilchert (2009) found that top executives scored higher on both extraversion and agreeableness.

⁹ This type of research is challenging but not impossible. Mitchell et al. (2011), for example, conducted in-person experiments on CEOs using conjoint analysis. Also, Porter and Nohria (2018) collected daily diary information from CEOs.

Personality affects goal setting and evaluations of different choice options (Ahsan, 2017; Gellatly, 1996; Wowak et al., 2017). Narcissists' preference for grandiosity might lead to more aggressive goals, for example, but their need for self-enhancement might lead to easier-to-achieve goals (Bollaert, Leboeuf, & Schwienbacher, 2020; Campbell et al., 2011). Their efforts to achieve such goals, in turn, may affect firm risk-taking and performance (Hoskisson, Chirico, Zyung, & Gambeta, 2017; Shinkle, 2012). Along these lines, studying top executive personality also could reveal boundary conditions for decision-making theories that ignore individual differences. For instance, although prospect theory ignores individual differences in loss aversion (i.e. losses affect decisions more than similarly sized gains do) (Holmes, Bromiley, Devers, Holcomb, & McGuire, 2011),¹⁰ prior research suggests that anxiety (a facet of neuroticism) and idealism (a facet of openness) increase and decrease individuals' focus on losses, respectively (McCrae & Costa, 1992; Sloman, 2008). Likewise, top executives high on internal LOC (Ritchie, Anthony, & Rubens, 2004) and conscientiousness (Peterson et al., 2003) solicit and analyze more information from others before making decisions, which could reduce their susceptibility to several heuristics and biases identified in prior research (e.g., Tversky & Kahneman, 1974). A better understanding of such cognitions and information processes could open some of the black boxes in upper echelons theory (Neely Jr. et al., 2020) and provide fresh theoretical and practical insights on leaders' decision making.¹¹

Top management teams

Most top executive personality research has focused on CEO personality, sometimes by examining its effects on TMTs. However, few studies in this review measured TMT members' personalities, and even fewer differentiated CEOs' and TMT members' personalities. Importantly, many decisions involve input from TMTs under the leadership of CEOs (Hambrick, 2007), and TMT members' personalities might shape the influence of CEO personality.

First, we need to understand the impact of personality differences within TMTs. Research on TMT heterogeneity in demographic traits and experiences has produced mostly mixed results (Hambrick, Humphrey, & Gupta, 2015), but personality differences capture TMT dissimilarities more directly (Pitcher & Smith, 2001). Personality differences in teams can hinder shared leadership, cooperation, and problem solving (Nassif, 2019). These effects also might depend on a number of important moderators, including interdependence (i.e., how much TMT members interact; Hambrick et al., 2015), pay disparity (Carpenter & Sanders, 2002), task requirements (Pitcher & Smith, 2001), time spent together (Bell, 2007), and power differences (Nahavandi & Malekzadeh, 1993) that affect team functioning¹² (LePine, Buckman, Crawford, & Methot, 2011).

Second, we need to understand other operationalizations of TMT personality, including the mean, maximum, or minimum levels (or distributions) of personality traits on the team. Most team-level research focuses on the mean levels of certain traits on the team. Different conceptualizations might be helpful, depending on the tasks TMTs are performing: (1) when tasks require equal contributions from all team members (i.e., additive tasks), examining mean personality levels on the team might be appropriate; (2) when input from the most competent person is sufficient to accomplish tasks (i.e., disjunctive tasks), examining the maximum levels of certain personality traits on the team might be appropriate; and (3) when one weak member can undermine task accomplishment (i.e., conjunctive tasks), examining minimum levels might be appropriate (Barrick, Stewart, Neubert, & Mount,

1998; LePine et al., 2011; Steiner, 1972). To illustrate, because openness fosters the desire to learn, experiment, and challenge the status quo (Zor, Linder, & Enderich, 2019), the maximum level of openness on TMTs might explain the success of innovation and brainstorming tasks that focus on selecting only the most creative ideas.

Third, and relatedly, there are opportunities to study person-team personality fit in TMTs. Certain personality traits are complementary, meaning they are more beneficial when a mix of team members score high and low on the traits. Others are supplementary, meaning they are more beneficial when all team members score high on the traits (Prewett, Walvoord, Stilson, Rossi, & Brannick, 2009). Still others can be harmful when multiple team members score high. For example, research suggests that teams perform worse when they have too many extraverts, perhaps because extraverts are more likely to try to dominate team discussions (Barry & Stewart, 1997). Conversely, research suggests that conscientiousness is more beneficial when all team members are conscientious, perhaps because such teams experience less free riding and greater commitment (Humphrey, Hollenbeck, Meyer, & Ilgen, 2007). And, because followers' own personalities affect their reactions to leaders, CEO personality might affect the appropriate mix of personalities on the TMT. For instance, Bauer, Erdogan, Liden, and Wayne (2006) found that poor leader-member exchange (i.e., low-quality relationships; LMX) between top executives and their followers increased followers' turnover and reduced their job performance, especially when the followers were introverts and lacked a natural proclivity for relationship building. Similarly, often called the CEO disease (Deutsch, 1991; McGregor, 2015), top executives frequently have more difficulty receiving critical or constructive feedback and ideas from lower-level employees. It may be that CEO personality plays a role in this phenomenon. Whereas more narcissistic CEOs are more likely to disregard or discourage input from others, for example, more humble CEOs are more likely to value others' ideas and solicit input (Ruiz-Palomino, Hernández-Perlines, Jiménez-Estévez, & Gutiérrez-Broncano, 2019). Similarly, it could be interesting to examine how TMT members' personality traits, such as extraversion or agreeableness, shape their willingness to provide input to CEOs, especially if CEOs display personality traits that tend to discourage or encourage such input.

A critical but often overlooked consideration in personality research on teams, however, is that the expected correlation between individuals' personalities is not zero. Due to social desirability and the concentration of scores near the mean, the expected correlation between the personalities of randomly selected individuals is as high as 0.40 (Rogers, Wood, & Furr, 2018). If certain personality traits help leaders obtain top executive positions, this number might be higher for them. Failure to account for this non-random variation, in turn, could bias empirical tests.

Methodology

Studying top executive personality also creates other methodological challenges, including measurement and endogeneity, that are relevant to leadership research more generally. Addressing these challenges can improve the validity and replicability of empirical tests.

Measurement

Top executive personality is difficult to measure, there are many ways to measure it, and each has tradeoffs. Our goal here is to explain these issues, rather than to critique or to endorse specific measures or measurement techniques.

Scholars have used both primary and secondary data to measure top executive personality. Primary data sources include self-report or other-report questionnaires. Collecting such data with validated personality scales¹³ (e.g., NEO for the Big 5; Costa & McCrae, 1992) can help scholars compare their findings with other leadership research that used similar

¹⁰ Prospect theory uses estimates of average loss aversion in the population to predict choice (Tversky & Kahneman, 1992).

¹¹ Shepherd (2011) outlined methods for testing the impact of individual differences on decision making.

¹² TMT heterogeneity and personality also may interact to affect team outcomes (Fisher, Bell, Dierdorff, & Belohlav, 2012).

¹³ Validity might be greater when the phrase "at work" is added to questions to specify the context (Shaffer & Postlethwaite, 2012).

scales. However, self-report surveys of top executives often have low response rates (Cycyota & Harrison, 2006), especially in multi-stage studies.¹⁴ They also can enable social desirability bias, if top executives try to project favorable images when answering the questions (Chatterjee & Hambrick, 2007).

Other-report surveys, whereby co-workers or third-party observers rate top executives' personalities (e.g., using video clips), bypass some of these response rate and social desirability concerns (Hill, Petrenko, Ridge, & Aime, 2019). Meta-analyses suggest that such measures often have higher validity than self-report surveys do (Oh, Wang, & Mount, 2011; Ones, Dilchert, Viswesvaran, & Judge, 2007). However, these measures also have challenges. Implicit leadership theory suggests that observers hold preconceptions about the traits that certain leaders should possess, perhaps biasing raters' scores (Eden & Leviatan, 1975; Rush, Thomas, & Lord, 1977; Uhl-Bien et al., 2014), especially these preconceptions also depend on leaders' gender and other confounding factors (Hood & Young, 1993; Pillemer et al., 2014; Rule & Tskhay, 2014). Further, Funder and Colvin (1988) argued that the observers often provide inaccurate or non-converging ratings, depending on how well they know, and how much they interact with, the individuals they are rating. Raters' trust in the confidentiality of the process also is a concern, especially when rating powerful leaders, such as CEOs. Top executives also might be skilled self-monitors, due to their visibility, the role of impression management for obtaining top executive positions, and their significant financial incentives to portray themselves favorably. Thus, they may be able to control the traits they display in certain situations (Snyder, 1974), potentially undermining some benefits of other-report surveys¹⁵ in this leadership context (Funder, 1995). Nonetheless, other-report surveys remain a promising alternative to some of the potential problems of self-report surveys.

In response to these challenges, scholars have developed measures using secondary data. For instance, Cragun, Olsen, and Wright (2020) reported that scholars have measured narcissism using secondary data about top executives' speech patterns (i.e., use of first-person singular pronouns) (Bollaert et al., 2020), firms (e.g., extent to which press releases focus on the CEO) (Chatterjee & Hambrick, 2007), and private lives (e.g., extravagant houses, etc.) (Spangler, Gupta, Kim, & Nazarian, 2012). Likewise, scholars have developed measures of the Big 5 (Harrison, Thurgood, Boivie, & Pffarrer, 2019) and hubris (Aksinaite, Robinson, & Sadler-Smith, 2020) using CEOs' public statements.¹⁶ These measures can overcome some of the potential problems of surveys, but they also have challenges. Often, some of the same indicators (e.g., pay disparity) are used to measure different constructs—such as narcissism and hubris—which blurs construct boundaries. Some proxies also conflate top executive personality with its effects. For example, complex strategies (e.g., acquisitions and product diversification) lead to pay disparity due to the wider variety of roles and environments across different parts of the firm (Carpenter & Sanders, 2002), but pay disparity often is used to measure CEO personality and, in turn, to predict firm strategy. Measures based on top executives' spoken language, letters to shareholders, and other public communications remain subject to concerns about self-monitoring.

Moving forward, we have six suggestions for top executive personality measurement. First, *if possible, use multiple measures of each top executive personality trait and present validity evidence*. The availability of different measures can be helpful, especially if some are used to validate others (Boyd, Gove, & Hitt, 2005). Measures based on primary data can

be validated with secondary data, for example, and *vice/versa* (Chatterjee & Hambrick, 2007; Harrison et al., 2019).

Second, *employ practices that increase survey response rates* (e.g., Cycyota & Harrison, 2006). For example, Simsek et al. (2010) used short surveys, solicited endorsements from stakeholders (e.g., local universities), promised summaries of the findings, and achieved response rates of 14% and 26% in surveys sent to CEOs and TMT members, respectively. Using similar practices, Pryor et al. (2019) achieved a 10% response rate in a three-stage study of CEOs (and a 19% response rate in stage one). Thus, surveying top executives is challenging but doable.

Third, *employ practices that increase the accuracy of raters' judgments when using other-report surveys*. For instance, Funder (1995) argued that the accuracy of raters' judgments is greater when raters are trained and when the focal personality traits are highly salient and apparent.

Fourth, *minimize concerns about reverse causality and confounds*. As noted above, some of the secondary measures of top executive personality might result from, not cause, firm strategy. Similarly, different personality traits are not orthogonal, and they can affect leadership outcomes in different ways, which increases the potential for omitted variable biases (Zaccaro et al., 2018). For example, Judge and Bono (2000) found that openness increased transformational leadership, but not when other Big 5 traits also were included in the model. Likewise, whereas the Dark Triad traits are moderately correlated, none of the CEO narcissism studies controlled for the distinct but related constructs of Machiavellianism or psychopathy (Jones & Paulhus, 2014). Thus, when examining the effects of specific personality traits, scholars should control for related traits.

Fifth, *report comprehensive descriptive statistics*. Scale ranges, maximums, and minimums were not reported in the top executive personality studies that used secondary data. These statistics are needed to compare top executives' personality traits to the general population and to samples in other studies, to identify possible curvilinear effects of some traits, and to assess whether some traits affect behavior or performance differently depending on certain aspects of the context.

Lastly, *advances in big data and the use of neuroscience offer new opportunities to measure top executive personality*. Scholars have used the growing availability of data about top executives to develop novel secondary measures of personality traits (Harrison et al., 2019; Spangler et al., 2012). Likewise, scholars have begun identifying the neurological signatures of certain personality traits and examining how neuroscience can inform leadership research (Bagozzi et al., 2013; Tuncdogan et al., 2017; Waldman, Balthazard, & Peterson, 2011). The challenges of collecting these data notwithstanding (Neely Jr. et al., 2020), they offer the opportunity to develop more objective measures of personality that are less subject to some of the challenges noted above.

Endogeneity

Endogeneity occurs when predictors correlate with error terms, often due to measurement error, reverse causality, and omitted variables (Antonakis, Bendahan, Jacquart, & Lalive, 2010; Martin, Hughes, Epitropaki, & Thomas, 2020; Semadeni, Withers, & Certo, 2014). Endogeneity undermines the validity of empirical results (e.g., by violating the assumptions of the analytical tools used), thereby hindering theory development. Because we discussed measurement above, this section focuses on reverse causality and omitted variables. Although top executive personality scholars increasingly attend to endogeneity, they address it inconsistently and sometimes ineffectively. Thus, we offer the following suggestions for addressing endogeneity.

We need to understand more about reverse causality. Although leaders' personalities can be exogenous because they are relatively stable (Antonakis, Day, & Schyns, 2012), they can be endogenous if they influence who is selected into leadership positions. For example, firms that value innovation might hire top executives with certain personality traits, such as openness. If the firms continue to innovate at the same rate after hiring such executives, some of the observed "effects" of personality might be spurious (Miller et al., 1982). Lagged designs and

¹⁴ There are debates about how severely social desirability affects the validity of self-report surveys (Ones, Viswesvaran, & Reiss, 1996; Williams, Rogers, Sharf, & Ross, 2019). We believe it is important to consider in the top executive context because of the incentives top executives may have to portray themselves favorably and because of the importance and visibility of their positions.

¹⁵ Barrick et al. (2005) showed that self-monitoring weakened the effects of some Big 5 traits on job performance.

¹⁶ Marquez-Illescas et al. (2019) recently found that narcissism also influenced the language CEOs use in public statements, suggesting that analyzing such statements might be an additional way to measure narcissism in the future.

repeated measures often address this issue insufficiently, due to firm momentum and inertia (Miller & Chen, 1994) and the relative stability of adults' personalities (Hampson & Goldberg, 2006). Thus, we need to understand firm and environmental factors that prompt the hiring of top executives with certain personality traits. Whether top executives affect firm strategy, or reflect it, is central to debates about the roles of top executive, firm, and environmental factors for firm outcomes.

Relatedly, scholars should use *sample rebalancing methods to address omitted variables that result in non-random assignment across groups*. Matching techniques identify observations that are comparable on variables other than a treatment variable, thus helping to rule out alternative explanations (Stuart, 2010). For instance, to study CEO narcissism's impact on firm performance, Patel and Cooper (2014) used a matching algorithm to identify firms that were similar on variables (e.g., firm size and industry) other than whether they had narcissistic CEOs. Related approaches include inverse weighting techniques, which involve (a) predicting the likelihoods that firms select CEOs with the focal attributes and (b) weighting firms with higher likelihoods less heavily in the primary models (e.g., Rocha & van Praag, 2020; Shi, Connelly, Mackey, & Gupta, 2019). These methods rely on fewer assumptions than many two-stage models do (as explained below), which facilitates their application and validity. However, they use categorical variables to identify treatment effects, which may reduce their desirability when treatment variables are continuous.

Other sources of omitted variables include selection biases, which exist when sampled and non-sampled observations differ in unobserved ways that shape the distributions of, or the observed relationships between, the predictors and dependent variables (Certo, Busenbark, Woo, & Semadeni, 2016). For example, top executives' social media postings might be an alternative way to measure their personalities, but social media usage might be correlated not only with certain personality traits (thus affecting the distributions), but also with age, industry, and other factors that also predict leadership outcomes. The availability of public interviews and speeches used by third parties to rate personality traits presents similar selection concerns (Hill, White, & Wallance, 2014). Personalities also affect leaders' self-selection into certain contexts (e.g., jobs, firms, and industries) that can cue the expression of certain personality traits and foster choices that stem from those traits (Zaccaro et al., 2018). Because top executives often make choices that they expect will yield desirable performance, several unobserved factors may explain both their choices and the performance consequences of such choices. Likewise, if CEOs with certain personality traits are known to increase firm performance, then firms that do not hire such CEOs might differ from firms that do. Failing to account for this unobserved heterogeneity can lead to spurious conclusions (Bliese, Schepker, Essman, & Ployhart, 2020; Hamilton & Nickerson, 2003; Shaver, 1998).

Two-stage models with instrumental variables can be used to address these selection issues. These techniques regress the endogenous variables on instrumental variables in stage one and use information from those regressions to remove the endogenous variance in stage two. There are two effective ways to implement this procedure (Semadeni et al., 2014; Wooldridge, 2010). The first is a *two-stage least squares model* in which the predicted values from stage one replace the endogenous variables in stage two. The second is a *control function* where stage two includes the original predictors but uses the residuals from stage one as control variables.

There are at least *three ways to improve the use of two-stage models and instrumental variables* in top executive personality research. First, the instruments must be valid, meaning that they should be related to the endogenous predictors but not the dependent variables. Otherwise, they cannot account for the endogeneity (Bettis, Gambardella, Helfat, & Mitchell, 2014; Semadeni et al., 2014). Second, scholars should use the stage one residuals, not the predicted values, in stage two. Because the residuals capture the endogenous variance, using the predicted values for this purpose does not correct for the endogeneity (Wooldridge, 2010). Third, two-stage models often produce non-normally distributed

standard errors, which can bias conclusions about the statistical significance of regression coefficients. Bootstrapping both stages simultaneously and/or estimating both stages as systems of equations (e.g., Heckman procedures) help address this issue (Petrin & Train, 2010).

Considering the challenges of endogeneity, *scholars increasingly employ experimental methods with random assignment* to help mitigate endogeneity problems (Eva, Robin, Sendjaya, van Dierendonck, & Liden, 2019). Laboratory, policy capturing, and conjoint experiments can be used to confirm findings from field studies or to test relationships that are hard to isolate in the field (Hitt & Tyler, 1991; Mitchell, Shepherd, & Sharfman, 2011). The random assignment can help mitigate alternative explanations. For similar reasons, natural experiments based on random events can be helpful too (e.g., Combs & Skill, 2003; Quigley, Crossland, & Campbell, 2017). Of course, experiments also have challenges. If the sampled top executives are not representative of the population (e.g., due to low response rates and response bias), generalizability is a concern.

Importance of context

Lastly, we need more research on the leadership context, especially "situational opportunities and constraints" (Johns, 2006: 386; Meyer, Dalal, & Hermida, 2010). For instance, few top executive personality studies use broader contextual attributes, such as conditions in the leadership environment, as moderators. Theories that explain the influence of context on decisions and behavior, and how the effects of context vary across personality traits, could shed new light on job, firm, and environmental factors that shape the impact of top executives' personalities. In particular, research on situation strength suggests that personality predicts behavior better in weaker situations that provide more discretion (Mischel & Shoda, 1995), and trait activation theory suggests that personality traits explain behavior better in situations that provide trait relevant cues (e.g., neuroticism is more problematic in stressful situations) (Tett & Burnett, 2003).

First, *we need to understand the role of personality in different leadership and top executive positions*. Judge and Zapata (2015) found that the Big 5 traits had stronger effects on job performance when job requirements were more relevant to the traits. For instance, agreeableness increased (decreased) performance in jobs that required social skills (competition). Similarly, openness might be more valuable in top executive positions that require creativity and innovation (e.g., Chief Technology Officers) than in those that demand regulatory compliance (e.g., Chief Financial Officers). Vocational research on personality traits that help leaders excel in jobs with different task requirements could provide practical guidance about the personality traits needed in different top executive positions. Job attributes also might shape the manifestation of personality traits via social influence processes. For example, extraverted CEOs' might become more extraverted over time, due to their visibility and interactions with diverse stakeholders. Likewise, if dominance (a facet of extraversion) helps leaders become CEOs, they might become even more dominant over time due to the power and prestige of this position (Caspi, Roberts & Shiner, 2005).

Second, *there are opportunities to examine how firm conditions shape the effects of top executive personality*. Top executives affect the structures, cultures, strategies, and performance of their firms, especially in startups (Kets de Vries & Miller, 1986; Peterson et al., 2009), but they also operate within and adapt to organizational norms, politics, and other factors over time. This reciprocal influence between top executives and their firms is theoretically and practically important. Further, hiring and promotion processes might not select top executives with the personality traits that firms need in certain situations. For instance, firms that are failing may prefer passive top executives to weather crises (Ryan, Haslam, Hersby, & Bongiorno, 2011),¹⁷ but successful turnaround strategies may require personality traits, such as high openness, that foster strategic change (Nadkarni & Herrmann, 2010). Although

¹⁷ The focus of Ryan et al.'s (2011) study was CEO gender, rather than personality. We reference the paper here, however, to illustrate that boards sometimes hire top executives with the characteristics thought to be beneficial in specific circumstances.

poorly performing firms can replace their CEOs with leaders who have different personalities, successors' personalities often resemble those of the departing CEOs (Harrison et al., 2020), especially when those CEOs were powerful (Pitcher, Chreim, & Kisfalvi, 2000). Thus, firm contexts might influence the personality traits that firms need in their top executives, as well as the attraction, selection, and retention of such executives.

Third, *scholars should examine how external environments influence the effects of top executive personality*. A few studies have focused on *industry conditions* that affect discretion, but the advantages and disadvantages of certain top executive personality traits also might vary across industries. To illustrate, openness may be more valuable when industries demand more innovation.

In addition, although we found few multi-country studies on top executive personality, the advantages and disadvantages of certain personality traits might vary across *country, institutional, and cultural contexts*. These contexts shape top executives' discretion (Crossland & Hambrick, 2007, 2011; Holmes, Miller, Hitt, & Salmador, 2013) and might influence how stakeholders interpret or respond to certain personality traits. Extraversion, openness, agreeableness, and other traits that help top executives understand situations and influence people might be more important in countries where relationships with other business leaders and government officials are vitally important, as is the case in many emerging economies (Nee, 1992). Stakeholders from different cultural traditions also might interpret and respond to certain leader personality traits differently (Harms, Han, & Chen, 2012; Wang, Waldman, & Zhang, 2012). Narcissistic CEOs might do more harm in collectivist countries (due to their self-focus), for example, and their "sense of entitlement could blind them to the need to adapt to cultural norms" (Grijalva & Harms, 2014: 119).

Lastly, *economic conditions* need more attention. Research reviewed earlier suggests that crises can unearth the unexpected benefits of some personality traits, such as narcissism. By creating economic hardship, they also could augment the benefits of traits like CSE. More generally, future research in this area might enable new applications of contingency theory, which recently has been applied in selection and turnover research (Kim & Ployhart, 2018).

Conclusion

Finkelstein et al. (2009: 1) argued that "to understand why organizations do the things they do, or perform the way they do, we need to comprehend deeply the people at the top [because they] can dramatically affect organizational outcomes." Similarly, leadership is one of the most studied phenomena in the organization sciences

(Lord et al., 2017), and much of this research has focused on leaders' individual differences (Zaccaro et al., 2018). Despite a surge in research on top executive personalities in recent years, our understanding of how their personalities influence their leadership of organizations, as well as the consequences of such leadership, remains incomplete.

In response, we reviewed the top executive personality literature, assessed its contributions to leadership research, and developed a future research agenda. Several conclusions emerged. First, the top executive context is an important setting in which to study leadership and personality. Top executive personality research has shed new light on several notable leadership topics, including leaders' effects on followers, ethical leadership, strategic leadership, corporate governance, and firm performance. This research sometimes aligns with, and sometimes raises new questions about, our understanding of leadership and leaders' personalities more generally.

At the same time, there are several unanswered questions about top executive personality. To address these questions, it is critical for top executive personality researchers to draw more heavily on the broader leadership literature, which provides more fine-grained insights about individual differences, personalities in teams, and context than is found in the top executive personality literature. Top executive personality scholars also have developed or employed a variety of measurement approaches and endogeneity corrections, many of which have important tradeoffs that warrant more attention in future research on top executives and other leaders.

By explaining how top executive personality research enriches and is informed by leadership research, this article provides a foundation for the integration of these two literatures. This integration can advance our understanding of what it means to lead organizations.

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Appendix A. The uniqueness of this review

Author(s)	Year	How our work is different and adds value	Percent of our articles covered ^a
Bromiley & Rau ^b	2016	Rarely mentioned or addressed specific personality traits. Reviewed only 14 of the studies we review. Cited only six papers from micro journals.	14.14%
Busenbark et al.	2016	Personality was a small piece in a big framework they propose. Cited three Big 5 studies and five narcissism studies. Cited only one study from a micro journal.	13.13%
Cannella & Monroe ^b	1997	Reviewed early studies on need for achievement, locus of control, and neuroticism. Did not capture the recent growth of top executive personality research (e.g., remarked that top executive personality research has "failed to capitalize on" (p. 223) the Big 5).	2.02%
Carpenter et al.	2004	Focused on demographic traits. Reviewed only two personality studies.	3.03%
Cragun et al. ^b	2020	Our review focuses more extensively on personality as a broad construct, while theirs is a narrow summary and meta-analysis of research on CEO narcissism.	29.29%
DeChurch et al. ^b	2010	Rarely covered top executive personality articles. Covered only five studies in our review.	5.05%
Finkelstein et al.	2009	Introduced several personality traits and called for future research; helped foster much of the research that we review. Focused on positive self-regard and its dimensions.	12.12%

Author(s)	Year	How our work is different and adds value	Percent of our articles covered ^a
Georgakakis et al. ^b	2020	We focus on many more personality traits (e.g., Big 5). They focus on CEO–TMT interface and acknowledge that personality is one of many characteristics that may impact these interactions.	9.09%
Hoskisson et al.	2017	Touched tangentially on personality (focus is antecedents to risk-taking and contrasting agency theory with other theories). Cited only one Big 5 study and only four narcissism studies.	11.11%
LeBreton et al.	2018	Cited only one article about personality from micro journals. Devoted only two paragraphs to CEOs. Only focused on CEO narcissism.	3.03%
Liu et al.	2018	Does not consider personality in depth, because it focuses on many CEO attributes. Discussed only a few personality traits (mostly CSE). Ignored major personality frameworks (e.g., Big 5).	29.29%
Ma et al. ^b	2020	Focused on CEOs only, thus omitting other top executives. They have one paragraph which mentions that CEO personality may influence the propensity to engage in advice seeking.	2.02%
Neely et al.	2020	They focus on what the Upper Echelons literature in general has accomplished and what still is a challenge, so the focus is not personality. Their section on personality relates mostly to measurement improvements, rather than conceptual contributions.	18.18%
Samimi et al. ^b	2020	They treat personality as one of many individual-level factors that can impact strategic leadership. They devoted two paragraphs to dispositions and discuss personality in this section.	18.18%
Smith et al. ^b	2018	Did not focus on top executives. Devoted only two pages to top executives (mostly CEOs). Omitted traits that are not obviously bright or dark (e.g., CSE).	18.18%
Wang et al.	2012	Cited only five studies that we review. Concluded that “most research on leaders’ personalities across cultures has focused on middle managers” (p. 574).	5.05%
Wowak et al.	2017	Touched tangentially on personality (focused on incentives and motivations that shape executive behavior). Cited only three Big 5 studies on three narcissism studies.	16.16%

^a The average overlap was 12.30%. Importantly, 37.37% of the articles in our review were not covered in any of these other reviews.

^b These articles are part of the 99 found during the literature search (see Review Methodology). We included the articles without this symbol because we knew about them or were directed to them.

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