

AN INVESTIGATION INTO TRANSFORMATIONAL LEADERSHIP BEHAVIORS
AND SIGNALING THEORY

by

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ABSTRACT

GEORGE BARTON STOCK JR. An investigation into transformational leadership behaviors and signaling theory. (Under the direction of DR. GEORGE C. BANKS)

Transformational leadership is arguably one of the most popular forms of leadership. However, despite the abundance of conducted studies on it, knowledge of specific transformational leadership behaviors is hindered by the conflation of follower perceptions and leader behaviors. Traditionally, these two elements are measured simultaneously, impeding causal inferences regarding the antecedents and consequences of such leader behavior. Thus, I first present a review of transformational leadership and propose the integration of signaling theory to ameliorate a number of issues in the transformational leadership literature. Second, I conducted two studies. In Study 1, I utilized a topic modeling approach to analyze open-ended responses ($n = 109$), and identified six transformational leader behaviors. In Study 2, I conducted a randomized, pre-registered, experiment and found that the presence of these signaling behaviors causes follower to evaluate the leader as more transformational ($n = 416$; Cohen's $d = .50$). Finally, I discuss the theoretical and practical implications as well as the opportunities for future research.

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TABLE OF CONTENTS

LIST OF TABLES	vii
LIST OF FIGURES	viii
CHAPTER 1: INTRODUCTION	1
1.1 Transformational Leadership	4
1.2 Overview of Campbell et al.'s Model of Job Performance	4
1.3 Transformational Leadership Model: An Adaption of Campbell et al.'s Model	6
1.4 Transformational Leadership Measurement Issues	13
1.5 Signaling Theory	16
CHAPTER 2: STUDY 1	18
2.1 Introduction	18
CHAPTER 3: STUDY 1 METHODS	19
3.1 Open Science	19
3.2 Participants	19
3.3 Procedure and Design	19
3.4 Analysis	20
CHAPTER 4: STUDY 1 RESULTS AND DISCUSSION	22
CHAPTER 5: STUDY 2	27
4.1 Introduction	27
CHAPTER 6: STUDY 2 METHODS	28
6.1 Pre-registration and Open Science	28
6.2 Participants	28
6.3 Procedure and Design	28
CHAPTER 7: STUDY 2 RESULTS AND DISCUSSION	31
7.1 Quantitative Findings	31
7.2 Exploratory Analysis	32
CHAPTER 8: GENERAL DISCUSSION	34
8.1 Theoretical Implications	34
8.2 Practical Implications	36
8.3 Limitations and Future Directions	38
8.4 Conclusion	40
REFERENCES	41

APPENDIX A: STUDY 1 FULL QUESTIONNAIRE	58
APPENDIX B: STUDY 2 FULL QUESTIONNAIRE	65
APPENDIX C: STANDARD SPEECH	73
APPENDIX D: TRANSFORMATIONAL SPEECH	75

LIST OF TABLES

TABLE 1: Transformational Leader Behaviors

TABLE 2: Results of Hypothesis Testing for H1

LIST OF FIGURES

FIGURE 1: Transformational Leadership Adaptation of Campbell et al.'s Model of Job Performance

CHAPTER 1: INTRODUCTION

Evidence from the financial industry suggests the bottom 10% of leaders cost their branch \$1.2 million, the middle 80% of leaders generate \$2.4 million in profit, and the top 10% of leaders contribute \$4.5 million in profit for their branch (Zenger & Folkman, 2009). Identifying exactly what it is that the top 10% of leaders are doing to be so effective would be of tremendous benefit for organizations and societies alike. Transformational leader behaviors may be a key factor in the success of top leaders, as they seek to both develop and empower their followers while paying attention to their individual needs (Bass & Riggio, 2006). Consequently, this style of leadership is believed to achieve superior results compared to others (Banks et al., 2018; Wang et al., 2011; Judge & Piccolo, 2004), and has become one of the most dominant leadership paradigms in the fields of management and applied psychology (Dinh et al., 2014). Yet surprisingly, transformational leadership theory contains limited research on specific observable behaviors (Antonakis et al., 2003; Bass, 1997), forming limitations for theory development and practical applications.

Thus far, most research on leader behavior has relied on questionnaire data completed by peers or followers (Hunter et al., 2007). Studies on transformational leadership have been no exception. Problematically, these measures rarely ask for concrete behavioral acts, instead attempting to capture broader concepts (Van Quaquebeke & Felps, 2018). Such an approach complicates theory due to the lack of concept clarity (Podsakoff et al. 2016), and also prohibits the development of training procedures. Relatedly, questionnaires are often plagued by endogeneity bias, when the exogenous variable correlates with the error term of the endogenous variable due to

omitted variables (Antonakis et al., 2010). Lastly, questionnaires fall short in capturing the organizational dynamics of the focal construct (Alvesson, 2020). However, researchers mostly ignore these “inconvenient truths” (Fischer et al., 2020). Hence, there is a need for alternative methods of assessing and measuring transformational leadership to better understand what drives both followers’ evaluations and important work outcomes.

Identifying specific behaviors might serve as the best path forward for the assessment and measurement of transformational leader behaviors. Research that has been able to delineate specific leader behaviors (e.g., charismatic leader tactics and ethical leader behaviors; Antonakis et al., 2016; Banks et al., preprint) has allowed for stronger causal inferences to be drawn between follower evaluations, leader attributes, and important outcome variables (Antonakis et al., 2011). Importantly, the identification of specific behaviors allows for easier implementation of experimental designs to determine the casual relationships between important variables of interest (Podsakoff & Podsakoff, 2019). Comparable transformational leader behaviors have not yet been identified, stunting the growth of experimental designs in this domain of leadership research. Thus, a major gap in transformational leadership research is the identification of specific behaviors.

In order to address this gap, a theoretical approach that is able to distinguish specific behaviors from observer evaluations is necessary. Signaling theory may offer an alternative framework for measuring transformational leadership behaviors as it seeks to understand important verbal and nonverbal communication that leaders present in order to convey a message to followers (Connelly et al., 2011; Spence, 2002). Additionally, the

integration of transformational leadership and signaling theory may contribute to the advancement of practice through a greater understanding of the impact that leader signaling behaviors have on follower's perceptions of the leader as well as important outcome variables (e.g., leader emergence, performance, well-being).

Thus, the purpose of the current work is to integrate transformational leadership and signaling theory, and to develop and experimentally test a taxonomy of transformational leadership behavior (a form of signaling from leaders to followers). The execution of this involved two studies. Study 1 utilized a topic modeling approach to analyze open-ended survey response text (n = 109), and identified six transformational leader behaviors. These transformational leader behaviors were then manipulated through a randomized, pre-registered experiment in Study 2 (n = 416) to demonstrate followers evaluating these behaviors as transformational (i.e., developmental and empowering). Finally, I conclude with a discussion of the implications for theory and practice regarding the integration of signaling theory, and the leader behaviors that emerge.

1.1 Transformational Leadership

Transformational leadership has a long history in the organizational sciences that dates back over forty years (Burns, 1978). Impressively, this line of research is responsible for over fifteen meta-analyses and hundreds, if not thousands, of studies. However, despite its apparent progress, the findings and theory are complicated by the consistent conflation of leader behaviors and followers' evaluation of the leader (van Knippenberg & Sitkin, 2013). Such conflation introduces a host of measurement problems (Fischer et al., 2020), and elicits confusion at the core of transformational leadership theory. Consequently, a proper review of transformational leadership would involve not only that which is involved in a typical review, but also a breakdown of the leadership process model to illuminate the gaps where causal linkages stemming from leader behaviors would ideally reside. Fortunately, the Campbell Model of Job Performance (Campbell et al., 1993) contains characteristics sufficient for what is needed to accomplish this task. In the next two sections, I will briefly describe the components of Campbell et al.'s model for clarity, and then adapt it to the context of transformational leadership. Lastly, in my reviews of the components of the transformational leadership model, I will provide brief critiques that highlight the critical gaps that need to be addressed.

1.2 Overview of Campbell et al.'s Model of Job Performance

The Campbell model consists of four main components: the antecedents of job performance, the determinants of job performance, job performance, and job effectiveness (see Figure 1). I will begin this overview starting in the center of the model with the focal component, job performance.

Job Performance. Campbell et al. (1993) defined job performance as the actions and behaviors that an individual engages in that are relevant and directed toward the organization's goals. From this, they identified eight dimensions of job performance, such as, written and oral communication, supervision and leadership, demonstrating effort, and job-specific task proficiency. These dimensions were identified to capture the multitude of behaviors related to job performance across all jobs.

Job Effectiveness. Campbell et al. importantly distinguished job performance from job effectiveness, defined as the "evaluation of the results of performance" (1993). Thus, performance captures the actions and behaviors related to the job, while effectiveness captures evaluations of those behaviors as good or bad, effective or ineffective. This distinction separates behaviors and evaluations of the behaviors while acknowledging the relationship between them. Taking this distinction further, the behaviors and actions related to performance involve that which individuals have direct control over, while effectiveness of the performance involves that which is determined by external evaluators.

Determinants of Job Performance. Looking at the precursors of job performance on the left side of the model, Campbell et al. argued that job performance is a direct function of three determinants of performance: declarative knowledge, procedural knowledge and skill, and motivation. Declarative knowledge captures the knowledge pertaining to facts, basic principles, and related information. Procedural knowledge and skill are the knowledge of how to do something and the skills required to implement that knowledge. Lastly, motivation is the choice to perform an action and the amount of effort one uses to do so. Thus, they conclude that those with higher levels of

declarative and procedural knowledge and skill as well as high levels of motivation will engage in job performance behaviors that are likely to be evaluated as effective.

Job Performance Antecedents. The final component of the model needing explanation is the antecedents of performance. Campbell et al. understand these antecedents to be stable individual differences such as intelligence, personality, and vocational interests. Further, these antecedent constructs influence job performance, as well as effectiveness, indirectly as a result of the relationships between antecedents, determinants, and performance.

1.3 Transformational Leadership Model: An Adaption of Campbell et al.'s Model

Adapting the Campbell model to transformational leadership will yield four similar components: antecedents of transformational leadership, determinants of transformational leadership, transformational leadership behaviors, and transformational leadership effectiveness (i.e., evaluations of behaviors). As stated previously, this process model allows for the disentangling between transformational leader behaviors and the evaluations of external evaluators. While the relationship between these two components is the primary purpose of using this model, I will expand upon the entire model for completeness.

Transformational Leadership Behaviors. Similar to the beginning of my explanation for the components of the Campbell model of job performance, I will start with the focal component. Transformational leadership has received a plethora of definitions from scholars since its inception. While most of these definitions are problematic due to lack of concept clarity (van Knippenberg & Sitkin, 2013), I will utilize Bass and Riggio's (2006) conceptualization to provide guiding boundaries as I

move through this model. Bass and Riggio referred to a transformational leader as one who empowers followers and pays attention to their individual needs and personal development, while also helping to develop the leadership potential of the followers. Importantly, this definition focuses on two central dimensions of transformational leadership, development and empowerment (Antonakis et al., 2016). Additionally, this definition does not require the focal concept to be defined by its outcome (e.g., transformational leadership is leadership that transforms followers or organizations), which is often the case with definitions of transformational leadership (Alvesson & Einola, 2019; van Knippenberg & Sitkin, 2013). Instead, this definition allows for specific behaviors to define the concept; that is, leader behaviors that develop and empower followers.

An essential element of the Campbell model is a taxonomy highlighting eight job performance-related behaviors and activities. This taxonomy was developed by Campbell and colleagues to organize the multidimensional nature of job performance. While specific behaviors and activities of transformational leaders have not been identified, the majority of transformational leadership literature claims there to be four inherent attributes. The first being *idealized influence* which captures the degree an individual engages in behaviors that encourage followers to identify with the leader (Judge & Piccolo, 2004). Second is *inspirational motivation* which involves stimulating enthusiasm as well as building followers' confidence in their ability to successfully perform assignments and attain group objectives (Yukl & Van Fleet, 1982). The third attribute is *intellectual stimulation* which entails raising problem awareness and problem solving, and altering the way followers view their beliefs and values (Bass, 1985). Lastly,

individualized consideration is the provision of socio-emotional support concerned with developing and empowering followers (Bass, 1985).

Problematically, attributes alone fall short of being able to identify a transformational leader. One reason for this being that these attributes are often cognitively abstracted in the questionnaires used to measure transformational leadership (Fischer et al., 2020). In doing so, capturing broader and more ambiguous concepts rather than concrete behaviors (Van Quaquebeke & Felps, 2018). Relatedly, in their meta-analytic review, Banks et al. (2017) found conceptual overlap between two of the four transformational attributes, idealized influence and inspirational motivation, with charismatic leadership as recently defined by Antonakis et al., (2016). Such conceptual overlap is a significant and theoretically detrimental pitfall of using attributes as their conceptual ambiguity leads to a lack of construct clarity. Lastly, Antonakis and colleagues explained that an attribute must either be an outcome or modeled as a mediatory process to predict another outcome. In either case, the attribute is dependent upon a specific behavior that predicts the outcome or initiates the mediatory process. Thus, specific behaviors need to be identified in order to understand what constitutes transformational leadership, and what distinguishes this style of leadership behavior from others.

Transformational Leadership Effectiveness. Continuing with the adaption of the Campbell model, effectiveness is defined as an evaluation of the results of a transformational leader. With at least six meta-analyses having been conducted regarding the results of these leaders (e.g., Lowe et al., 1996; Ng, 2017; Wang et al., 2011), the literature as it stands now suggests these leaders contribute to a host of positive

outcomes. While the plethora of positive outcomes is wincingly similar to Alvesson's (2020) "link the good style to the good outcome" ingredient in his recipe for "'successful' leadership theory," a brief overview of key findings is still warranted.

Meta-analytic evidence suggests followers that report having a transformational leader tends also report strong contextual performance within their workplace (Wang et al., 2011). Three key elements of contextual performance identified by Borman and Motowidlo (1993) are: organizational citizenship behavior (behavior that is not explicitly recognized by a formal reward system and promotes effective function of the organization; Organ, 1988), prosocial organizational behavior (behavior performed with the intention of promoting the welfare of the individual, group, or organization; Brief & Motowidlo, 1986), and organizational spontaneity (e.g., helping co-workers, protecting the organization, making constructive suggestions, developing oneself, spreading goodwill; George & Brief, 1992). Gouldner's (1960) norm of reciprocity theory would suggest that following a leader's efforts to develop and empower a follower, the follower might reciprocate with organizational citizenship behavior, prosocial organizational behavior, and organizational spontaneity. Thus, while studies with more objective measures of all of these concepts are necessary to determine the true size of the relationship, contextual performance may be an important result of transformational leader behaviors.

Additionally, meta-analytic evidence also suggests strong relationships between transformational leader behaviors and both employee commitment and engagement (Ng, 2017). Working from the two key elements of transformational leadership, developmental and empowering, commitment and engagement would likely be related to these

transformational leader behaviors as they might make working for the organization more enjoyable and challenging. From this, teams and organizations might experience greater success as committed and engaged employees typically do well in their jobs (Meyer et al., 1989).

Overall, research as it relates to the effectiveness of transformational leader behavior suggests an ability to increase performance through variables such as commitment and engagement by developing and empowering followers. Thus, while current meta-analytic evidence is plagued by endogeneity bias (Banks et al., 2018), rendering effect sizes to be spurious, there remains potentially substantial positive effects from transformational leader behaviors for organizations as suggested by decades of previous research.

Determinants of Transformational Leadership Performance. With the majority of transformational leadership research focused on outcomes, the current state of the literature does not heavily account for the determinants of transformational leadership. That is, the declarative knowledge, procedural knowledge and skill, and motivation that contribute to a leader engaging in transformational leader behaviors.

With declarative knowledge capturing the knowledge pertaining to facts, basic principles, and related information, a relevant research variable would be whether one has received transformational leadership training. Preliminary evidence suggests the success of transformational leadership training across a multitude of industries and positions of leadership (e.g., Barling et al., 1996; Dvir et al., 2002; Kelloway & Barling, 2000; Mason et al., 2014). However, such evidence is again plagued by issues mentioned previously (e.g., rater bias, endogeneity bias) as well as conflation between measures of charisma

and transformational leadership. Consequently, evidence for the efficacy, or lack thereof, of transformational leadership training can be improved greatly by identifying specific and observable behaviors that are detached from rater biases and other leadership constructs.

Procedural knowledge and skill are the knowledge of how to do something and the skills required to implement that knowledge. In the context of leadership, such knowledge and skill might be best reflected by emotional intelligence and political skill. In regard to transformational leader behaviors, meta-analytic evidence suggests a moderate relationship with emotional intelligence (Harms & Credé, 2010). However, Harms and Crede noted that the results may have been conflated by methodological confounds such as common method bias and socially desirable responding. Emotional intelligence being defined as the set of verbal and non-verbal abilities that enable an individual to process, express and evaluate their own as well as others' emotions in order to successfully cope with environmental demands and pressures (Van Rooy & Viswesvaran, 2004). Relatedly, political skill, defined as the ability to understand and influence other people in the workplace in a way that enhances one's personal and/or organizational objectives (Ahearn et al., 2004), was found to have a moderate sized relationship with transformational leadership behavior (Ewen et al., 2013). Emotional intelligence and political skills are likely important determinants for transformational leader behaviors as they are crucial for identifying and catering to follower's beliefs and values (i.e., intellectual stimulation) as well as understanding the follower's needs (i.e., individualized consideration).

Antecedents of Transformational Leadership. Research investigating antecedents of transformational leadership is sparse. However, the understanding of such relationships is quite valuable as it is argued that antecedents have important implications for the selection, training, and development of leaders (Bono & Judge, 2004).

Antecedents of transformational leadership explored thus far include primarily leader personality as well as upbringing. Two meta-analysis have investigated personality with one finding evidence of a weak relationship (Bono & Judge, 2004) and the other finding some evidence for a modest relationship between personality and specific dimensions of transformational leadership (e.g., individualized consideration; Deinert et al., 2015). More specifically, the evidence supported a relationship between individualized consideration and openness to experience and agreeableness. However, Bono and Judge noted in their review, “As we are aware of no field studies that used behavioral (as opposed to perceptual) measures of transformational leadership, it is hard to know what effect using more rigorous measures might have had on the results” (Bono & Judge, 2004, pg. 907). Thus, our understanding of antecedents of transformational leadership is also likely to benefit from a more behavior-based conceptualization. Lastly, commonly shared life experiences have been introduced to the literature as antecedents of transformational leaders. Namely, growing up with in a positive family as well as school environments that contributes to a strong self-concept and moral-standards (Oliver et al., 2011).

Transformational leadership model conclusion. After having distinguished the components of the transformational leadership using the Campbell et al. model, a stage has been set to address the issues noted throughout this manuscript. The primary issues

being 1) poor definitions of transformational leadership, 2) the way in which transformational leadership has been measured, and 3) a lack of specific transformational leader behaviors. Before introducing a potential solution that will help alleviate these problems, I will expand upon these issues to make clear the problems that need a solution.

1.4 Transformational Leadership Measurement Issues

Throughout the previous review, I made a few references to the shortcomings of the research. In the following section, I will expand upon these short comings, explain how these are problems for both theory and practice, and introduce signaling theory as a potential solution.

Definitions of transformational leadership. As mentioned previously, transformational leadership has received a host of definitions throughout its conceptual existence. However, almost all them define transformational leadership in terms of its effects, a tautological definition fallacy. That is, definitions of leadership including terms of achievement of such effects is problematic because such leadership is by definition effective (i.e., if it is not effective, by definition is not transformational; van Knippenberg & Sitkin, 2013). Charismatic leadership was diagnosed with similar definitional issues which has since been resolved by Antonakis et al. (2016). Importantly, their resolution involved a behavior-based approach which effectively separates leader behaviors from their effects. In order for transformational leadership to move forward, such a solution will also be required for its definitional issues.

Another significant issue with these definitions is they currently do not include appropriate boundaries for the dimensions of transformational leadership. That is, the

dimensions have not been contrasted from other leadership styles and dimensions (Podsakoff et al., 2016). This has been an issue primarily with the dimensions related to charismatic leadership (van Knippenberg & Sitkin, 2013). Recent developments in charismatic leadership theory have included a definition separating it from transformational leadership and other leadership styles (Antonakis et al., 2016). However, transformational leadership has not experienced similar advancements. While a reconceptualization of transformational leadership is certainly in order, a full definition development process is beyond the scope of this manuscript. Instead, Study 1 and Study 2 will first identify transformational leader behaviors and then experimentally test whether these behaviors are evaluated as such. Ultimately, this inductive approach will help to inform the necessary reconceptualization of transformational leadership.

Measurement Issues. Podsakoff et al. (2016) noted that a lack of conceptual clarity causes numerous problems at both the conceptual level and the operational level. Following from the critique in the above section and similar messages from other scholars (Alvesson, 2020; van Knippenberg & Sitkin, 2013), the lack of conceptually clarity for transformational leadership creates a fundamental problem for any measures of the concept. The Multifactor Leadership Questionnaire (MLQ 5X-Short, Avolio & Bass, 1995) is the most commonly used measurement tool and captures the essence of the current transformational leadership framework through a 45-item questionnaire. However, while this measurement tool, and similar devices (e.g., Leadership Behavioral Scale, Podsakoff et al., 1990), have certainly advanced the quantity of studies exploring transformational leadership, the numerous critiques have suggested that they have had minimal, and at times adverse, consequences for the quality of the concept. Given the

numerous critiques previously mentioned, one might question why these measurement tools are still widely used to measure transformational leadership. To which, David Day responded:

“questionnaires remain a popular (if misguided) approach to studying leadership. If you design and publish a brief, easy-to-administer survey questionnaire, there is little doubt that researchers will use it. But, we should not lose sight of the fact that a map is not the territory, and simply labeling a questionnaire as a measure of ‘leadership [or transformational leadership] measure’ does not mean that it actually measures leadership [or transformational leadership]” (2014, p. 862).

In addition to the broader issues regarding questionnaires noted by Day, the MLQ is comprised of questions that can be heavily influenced by the evaluator’s biases.

Research has suggested that evaluators’ reports of transformational leaders are strongly correlated with leadership satisfaction and perceived leadership effectiveness (Brown & Keeping, 2005; Judge & Piccolo, 2004). Thus, the literature as it stands is unable to rule out rater biases, or non-objective evaluations (e.g., a highly satisfied follower evaluation) as an alternative explanation regarding the cause of a leader being rated as transformational.

Transformational leadership behaviors would be better evaluated using experimentally manipulated or objective measures (Fischer et al. 2020). Such leadership research was demonstrated before the conceptual existence of transformational leadership (e.g., Bales, 1950; Lewin et al., 1939; Preston & Heintz, 1949). However, few studies regarding transformational leadership have utilized such designs, resulting in decades of research without any evidence that transformational leaders actually transform followers or organizations (Antonakis, 2012, p. 2). The deviation from such robust study designs has surely contributed to the overabundance of questionable correlational findings. The use of objective measures has been used intermittently throughout research in

organizational science (e.g., Podsakoff & MacKenzie, 1994). And, while Bommer et al. (1995) critiqued this approach as tapping only a narrow aspect of a concept, specific and observable behaviors can be easily incorporated into randomized experiments, the failsafe way to generate causal evidence (Antonakis et al., 2010). Such causal evidence will ultimately develop theory and, most importantly, provide evidence-based leadership training for practice.

1.5 Signaling Theory

The best solution to the problems noted throughout this manuscript seems to be the adoption of an approach utilized in the recent reconceptualization of other leadership styles (Antonakis et al., 2016; Banks et al., in press), the integration of signaling theory with transformational leadership. Signaling theory originated in the natural sciences (Dawkins, 1976), and is fundamentally concerned with reducing information asymmetry between two parties (Bergh et al., 2019; Spence, 2002). Signals are the devices utilized to reduce this information asymmetry, defined as things individuals do that are visible and in part designed to communicate (Spence, 1973, 2002).

In regard to leadership, signaling encompasses all the possible cues actively or passively demonstrated (i.e., behaviors) that provide the basis for followers' inferences about the leader (Reh et al., 2017). That is, a leader, or potential leaders, can demonstrate their credibility through behaviors and the communication of their values (Grabo et al., 2017). Relatedly, these signals can serve to fill gaps in the follower's understanding of the leader's capability, aiding in the decision-making process of selecting who will be the next leader and who will remain the leader (Bastardo & Van Vugt, 2019). Lastly, particularly important for the strength and saliency of these signals are the associated

costs (e.g., production costs, developmental costs, and maintenance costs; Searcy & Nowicki, 2005).

CHAPTER 2: STUDY 1

2.1 Introduction

The identification of transformational leadership behaviors should allow for a great deal of advancement in both research and practice. Research thus far has investigated the relationship between followers' evaluations of transformational leaders and various outcome variables. However, these evaluations, as well as most measures of related antecedent and outcome variables, are tainted by the perceptions of those completing the evaluation (van Knippenberg & Sitkin, 2013). Consequently, much of the findings from these studies are distorted (Hoyt, 2000), muddying our understanding of transformational leadership. The identification of behaviors that cause these followers' evaluations will take a step in understanding the linkage between follower evaluations of transformational leadership and important outcome variables for individuals and firms alike. Such connections have been explored for charismatic and ethical leadership (Banks, et al., preprint; Jacquart, Fenley, & Antonakis, 2016), and theory and practice may greatly benefit from similar explorations of transformational leader behaviors. This study seeks to advance transformational leadership by identifying a taxonomy of transformational leadership behaviors to be then be explored in subsequent studies.

Research Question 1: What specific and observable behaviors signal transformational leadership to a follower?

CHAPTER 3: STUDY 1 METHODS

3.1 Open Science

The data and analytic code for this study will be made available on the Open Science Framework (<https://osf.io/ydkvu>). Additionally, a completed form of the transparency checklist (Aczel et al., 2020) will be available.

3.2 Participants

Participants were recruited through SONA systems from a pool of undergraduate psychology students at the university which the author attends. Psychology students at this university are required to participate in a number of research studies to fulfill a credit requirement for their program. In total, 109 students participated in this study to identify a taxonomy of transformational leader behaviors. An estimation of 100 participants was pre-determined to be sufficient to provide theoretical saturation. Theoretical saturation is the point at which new data generates little, if any, new content or value to the emergent analysis (Glasser & Strauss, 1967). Lastly, a college student sample was intentionally chosen for this study due to the experiment involving a student commencement speech that will be addressed to college student participants in Study 2 (see Study 2 methods section).

3.3 Procedure and Design

Data collection involved providing participants with five open-ended questions that encompassed the concept of transformational leadership (see Appendix A). Upon agreeing to participate in the study, the students were directed to a Qualtrics survey where they responded to the open-ended questions with specific examples of their

experiences with leaders. The open-ended questions were adapted survey items from two of the four subscales of the MLQ. The two subscales selected for this study were constructed to measure the individualized consideration and intellectual stimulation subdimensions of transformational leadership. For instance, ‘The person I am rating spent time teaching and coaching’ (MLQ, Avolio & Bass, 1995) was adapted for this study to “How has your leader developed you through teaching and coaching?” The purpose of adapting the MLQ items was to use these rather generalized leader behavior questions to encourage responses with more specific transformational leader behaviors. Consequently, the respondents would be providing both the leader behaviors as well as examples of these behaviors.

3.4 Analysis

To address Research Question 1, a topic modeling analysis was conducted by examining a range of topics that emerged from the students’ responses. A topic modeling analysis approach was selected for its nature that combines both the efficiency of computer automation as well as the human-input that aids in unpacking the meaning of the text (Banks, et al., 2018; Kobayashi et al., 2018; Oswald et al., 2020). Before conducting the topic modeling analysis, I conducted a short thematic analysis, coding twenty percent of the responses, to familiarize myself with the data (Braun & Clarke, 2006) as well as to begin identifying potential themes (i.e., transformational leader behaviors). The topic modeling analysis utilized latent Dirichlet allocation (LDA; Blei et al., 2010) to identify and measure hidden (latent) topics within the data. Before conducting this analysis, I performed standard pre-processing steps such as tokenization, stemming, and the removal of stop words (e.g., also, will, can, every, leader). LDA is a

well-known algorithm for topic modeling that provides analysts with the ability to use a pre-programmed set of rules to reduce the dimensions of a corpus (set of textual documents) (Mohr & Bogdanov, 2013). The key assumption in LDA is that the words that make up a document are samples from a mixture model, where the mixture components are random variables that represent topics (Hannigan et al., 2019).

A Bayesian hierarchical mixture model was applied which draws upon co-occurrence among words in order to determine emerging topics (for review see Banks et al., 2018). I began the topic modeling process without an a priori number of topics, because the purpose of topic modeling is not to correctly estimate the quantity of topics. Instead, the purpose is to identify the highest quality lens through which one can see the data most clearly (DiMaggio et al., 2013). The topics that emerged were examined using the constant comparative method (Glaser & Strauss, 1967), drawing from transformational leadership literature to identify topics that made conceptual sense while maintaining parsimony (Strauss & Corbin, 1990). The goal of this process was to confirm that the topics emerging from the analysis are both robust and can be connected to the literature. The output of this process can be found in the first three behaviors in Table 1 which consists of labels for the topics and either supporting exemplars from data or evidence from the literature.

CHAPTER 4: STUDY 1 RESULTS AND DISCUSSION

Student responses afforded three specific transformational leader behaviors. These behaviors were all corroborated by the literature related to the individualized consideration and intellectual stimulation dimensions of transformational leadership. Three behaviors identified from the open-ended response data were: teaching life lessons, introducing followers to developmental opportunities, and providing different perspectives to view a problem. Additionally, through a deductive approach, drawing from transformational leadership literature (e.g., the MLQ), three additional behaviors were deductively identified: seeking different perspectives, questioning critical assumptions, and speaking words of affirmation. The following sections will expand upon each behavior.

Teaching Life Lessons. Teaching life lessons can be an effective means of providing an alternative vantage point of challenge or situation (i.e., intellectual stimulation) as well as communicating information in a way that resonates with the follower's strengths (i.e., individualized consideration). This behavior may involve the use of a story or anecdote, a tactic shared by charismatic leaders (Antonakis et al., 2011); however, teaching life lessons spans broader as it involves any teaching by the leader that can be applied to other areas of life. That is, teaching a life lesson does not require a story or anecdote. Importantly, this behavior informs followers that the leader has an interest in the development of their followers, and has the resources (i.e., life experiences) to do so.

Often times, the life lesson drew upon one area of the follower's life (e.g., sports), which could then be transferred, and the lesson could then be transferred to other areas of life. For instance:

I always kept this in mind because it doesn't just apply to playing sports but can apply to your job in a team setting or even in a family setting.

Not only was he a leader for the sport but also a leader to teaching me important life skills like self-discipline, responsibility, the importance of showing up.

As my math professor said before, 'If you can teach someone how to solve one question, it means that you truly understand that objective.'

In the first two examples, participants acknowledged that a lesson their leader taught them in one activity or area of life was applicable to numerous, if not all, areas of life. With the first example stating this directly, the second offers specific life lessons their leader taught them. The third example illustrates a lesson which, while the respondent did not specifically state having applied this to other areas of their life, can be applied to other areas of one's life.

Introduce Follower to developmental Opportunities. A second transformational leader behavior that emerged from this study was encouraging followers to engage in challenging and developmental experiences. This behavior is conceptually related to individualized consideration, the socio-emotional support given to followers that is concerned with development and empowerment (Bass, 1985). However, this behavior adds to Bass' conceptualization of individualized consideration by providing a specific behavior that signals to followers the leader's interest in the follower's development and empowerment. Specifically, that the leader is willing to invest time and energy to make sure the follower is acquiring meaningful experiences. Examples from the students responses included leaders encouraging followers to step out of their comfort zone or intentionally placing them in a specific situations to grow.

She encouraged me to push out of my comfort zone and try new things.

...helped me overcome my fears of being in front of people and helped me become the drum major of my high school. He encouraged me to get out of my comfort

zone and push myself to try out for drum major and his constant praise and encouragement really helped me succeed in being a leader for my fellow classmates.

He was always putting me in leadership positions.

Present Different Perspectives. The final leader behavior identified from the student responses was that of providing differing perspectives to view a situation or problem. This behavior is highlighted in most conceptualizations of intellectual stimulation (Avolio & Bass, 1995). In particular, that it creates “problem awareness and problem solving, of thought and imagination, and of beliefs and values” (Bass, 1985, p. 99). Consequently, signaling that the leader has the resources to help followers think in a way that is different than the norm, and offers meaningful contributions to conversations. Student responses both directly identified this behavior as well as provided specific examples of a leader performing this behavior.

Leaders often seem to inspire or challenge me by pointing out different ways I could evaluate a situation or issue.

Well my leader had asked me a challenging question and was like ‘If you put that off til later how is that going to relieve your stress because now you gotta worry about doing it later?’

They told me how to be in others’ shoes to see their point of view, even if my point of view was not wrong. Just to look at a situation or problems at a different angle. which has helped me mature and become a more understanding person...

Seek Different Perspectives. Related to the leader behavior of presenting different perspectives is the act of a leader seeking different perspectives. This transformational leader behavior was deductively determined from the literature and theorized to stimulate innovation and creativity by soliciting solutions from followers (Avolio & Bass, 1995). In doing so, empowering followers to think on their own as well as come up with new and creative ideas (Dvir et al., 2002). Seeking different perspectives

is not only a behavior that signals to followers that the leader is interested in the followers development and empowerment, but also a behavior that shows followers *how* the leader maintains their own personal development. This is to say that seeking different perspectives seems to be a particularly effective transformational leader signal as it portrays an interest in the follower's development as well as exemplifies a behavior that is essential to the leader's continued development.

Questioning Critical Assumptions. The leader behavior of questioning critical assumptions was also a behavior that other scholars have identified (Avolio & Bass, 1995; Podsakoff et al., 1990). This behavior is conceptualized to stimulate followers intellect by questioning elements of an idea or problem that previously had gone unquestioned. In doing so, signaling to followers that the leader is willing and able to critically assess aspects of work or life that have previously gone unquestioned. From this, the follower can learn how to question such assumptions as well as the consequences of such behavior.

Words of Affirmation. The last leader behavior that will be introduced in this study is that of providing words of affirmation. Specifically, that of affirming a follower's strengths, thus, contributing to their self-understanding and development which ultimately contributes to their empowerment (Thomas & Velthouse, 1990). Additionally, a strengths-based approach to follower development has been found to be a particularly effective leadership strategy that yields benefits at both the individual level as well as group and organizational levels (Clifton & Harter, 2003). Consequently, by providing words of affirmation, a leader signals that they have identified a strength of the follower's and is interested in developing this strength in some capacity. That is, at

minimum, the leader is interested in increasing the follower's level of self-efficacy, and is potentially willing to provide more individualized support to advance the follower's development.

CHAPTER 5: STUDY 2

4.1 Introduction

The taxonomy of behaviors developed in Study 1 consist of six leader behaviors that signal information about a leader to the follower, reducing information asymmetry. Study 2 searchers for preliminary evidence that these leader behaviors signal to followers an ability to lead in a way that is transformational (i.e., developmental and empowering). Importantly, identifying signals that cause followers to evaluate the leader differently is an initial step in the leader influence process (Fischer et al. 2020). After establishing this, only then can the causal connections between leader behaviors and follower behavioral outcomes be made. The consequences of having leaders that engage in this style of leadership could be of tremendous benefit to all levels of society, particularly organizations. While the plethora of studies conducted previously suggest this to be the case (Wang et al., 2011), Bono and Judge (2004) argued that more robust measures (i.e., measures including specific behaviors) may have an effect on results. Importantly, the results of Study 2 *cannot* provide evidence that certain leaders transform followers or their organizations. However, the evidence can make theoretical and practical advancements by using a randomized experimental design, the “gold standard” for testing causality (Antonakis et al., 2010), to test whether the behaviors identified in Study 1 cause followers to rate a leader as more transformational.

Hypothesis 1: Signals of transformational leadership cause followers to evaluate a leader as more transformational.

CHAPTER 6: STUDY 2 METHODS

6.1 Pre-registration and Open Science

Study 2 was preregistered on the Open Science Framework (OSF) after Institutional Review Board (IRB) but prior to data collection. The preregistration, study materials (e.g., speeches, scale items), data, and analytic code, can be found here:

https://osf.io/ydkvu/?view_only=e7725551e6ad4464943a6fd64ab2f8eb.

6.2 Participants

Participants were undergraduate and graduate students contacted through a university research Listserv. Using *g*power* (Faul et al., 2009), an a priori power analysis indicated that at least 352 participants were needed (Cohen's $d = .30$, $\alpha = .05$, and Power = .80; two-tailed). In total, 416 students participated in the study with no participants being removed from the dataset. Within 2 hours the survey was closed to prevent over recruitment. Lastly, the first 100 participants were compensated with a \$5 Amazon Gift Card, and each participant was entered in a drawing to receive one of two \$50 Amazon Gift Cards.

6.3 Procedure and Design

This between-subjects study involved two student commencement speeches that were presented as if the commencement address was held virtually. While in the past this scenario may have seemed unrealistic, the conditions of the 2020 pandemic have made the potential for virtual commencement addresses to be quite realistic. The speeches were both delivered by the same actress, a white female aged 25, that maintained the same appearance for both speeches.

In order to ensure that the experimental condition, in this case transformational leadership, was not being compared against a weak or bad condition (Podsakoff & Podsakoff, 2019), the standard speech was written first and used as a template for the transformational speech. That is, the standard speech was quite good. The standard speech (see Appendix C) was made up for 24 sentences and zero transformational leader behaviors while the speech written to be transformational (see Appendix D) consisted of 21 sentences and 19 transformational leader behaviors. The speeches were similar in length (529 words for the transformational condition, 507 words for the standard condition). Lastly, the speeches were recorded using a webcam with the university's logo as the background.

Participants were randomly assigned to either the transformational condition or the standard condition via the randomization function in Qualtrics. After watching their assigned video, participants were asked to rate the speaker using 8-items from two of the four dimensions of the Multifactor Leadership Questionnaire (5X-Short; Avolio & Bass, 1995). Banks et al. (2017) demonstrated that the other two dimensions, idealized influence and inspirational motivation, map onto Antonakis et al.'s (2016) definition of charismatic leadership. While a primary concern of scale shortening is that after having done so the scale no longer provides key aspects of the construct, threatening content validity (Clark & Watson, 1995; Haynes et al., 1995), in this case, shortening the scale avoids coverage of aspects unrelated to the focal construct.

After omitting the two unrelated dimensions, the remaining two consist of four items that assess intellectual stimulation (e.g., "Re-examined critical assumptions to question whether they were appropriate") and four items concerned with individualized

consideration (e.g., “Helped me to develop my strengths”). The items were slightly adapted to better fit the context, with the most significant changes being “of a group” to “of the audience” and “how to complete assignments” to “how to overcome challenges” (see Appendix B for exact wording). Based on recommendations from a large group of psychometricians, changes that are considered minor do not warrant additional validity evidence to support the changes (Heggstad et al., 2019). The MLQ uses a 5-point Likert-type frequency scale from 0 = *not at all* to 4 = *frequently, if not always*. Lastly, the reliability estimate of the scale in this study was $\omega = .85$ (note that ω is determined to be a more appropriate measure than α Cortina et al., 2020; McNeish, 2018). An evaluation of reliability estimates for each group yields a value of $\omega = .86$ for the control group and $\omega = .82$ for the experimental group.

While the use of the MLQ was critiqued previously in this manuscript, it was still incorporated in this study for two reasons. First, an experimental design limits the introduction of numerous biases that might influence the participant’s responses on the MLQ (e.g., being highly satisfied in their relationship with a leader), a primary critique of the MLQ. Second, by eliminating the subdimensions that measure charisma (individualized consideration and idealized influence), the use of the MLQ no longer conflates transformational leadership and charismatic leadership (Banks et al., 2017). Instead, it measures only intellectual stimulation and individualized consideration, the subdimensions that best capture transformational leadership as it is currently conceptualized (i.e., leaders who develop and empower followers; Antonakis et al., 2016; Bass, 1997).

CHAPTER 7: STUDY 2 RESULTS AND DISCUSSION

7.1 Quantitative Findings

An independent-samples t-test was conducted to compare the evaluations of the standard speech and the transformational speech. The results indicate that there was a significant difference in the evaluations of the standard speech group and transformational speech group, ($t(414) = 5.05, p < 0.001, \text{Cohen's } d = .50$). That is, the average evaluation score in the standard speech group ($n = 212, M = 1.97, SD = 1.22$), was significantly different from the transformational speech group ($n = 204, M = 2.38, SD = 1.13$). Using Cohen's traditional standards for standardized mean differences, a Cohen's d of .50 would be interpreted as a medium effect size. However, recent meta-analytic evidence from Bosco et al. (2015) suggested that in many cases Cohen's standards should be lowered. Specifically, that the boundaries for a medium effect size for relations involving behaviors are approximately $|r| = .10$ and $.24$, with large effects size being roughly greater than $|r| > .25$ (see Table 2 in Bosco et al., 2015). Thus, with a Cohen's d of .50 yielding an effect size of $|r| = .24$, the evidence from this study suggests a medium to large effect size.

The results of this study suggest that there are behaviors that signal to followers the leader's capability to transform the follower (i.e., develop and empower). Theoretically, this means that these signals serve as a reduction of information asymmetry between the follower and the leader (Bergh et al., 2019). Stated more simply, transformational leader behaviors serve as valuable pieces of information that are likely to be interpreted by followers as indicators that the leader is capable of developing and

empowering the follower (i.e., transform). This is not to say that I have provided any evidence for these behaviors to actually transform followers. Instead, these signaling behaviors serve as, at minimum, observable triggers in the social influence process inherent in leadership (Fischer et al., 2017).

While the results of this study did not provide any proof that there are leaders who can actually transform followers or organizations (Antonakis, 2012), there remain important takeaways from this study for transformational leadership and signaling theory. This study provided evidence that in a matter of three minutes, a leader can speak words that cause the follower to evaluate them as more transformational. Consequently, there is potential for these behaviors over time to have an even greater impact on a follower's evaluation of the leader as well as important outcome variables.

7.2 Exploratory Analysis

Lastly, in an attempt to gain further understanding of the information being sent through these leader signaling behaviors, I conducted supplemental analyses on the data from this study. Namely, I explored the descriptive statistics as well as an item total correlation analysis with the purpose of identifying which items had the highest mean and correlated strongest with the overall transformational score. Such findings could suggest what signals were most salient to participants as well as what behaviors were most likely to predict a follower to evaluate the leader as transformational, regardless of which condition they were in. Interestingly, items IS_2 ("Sought differing perspectives when solving problems.") and IS_4 ("Suggested new ways of looking at how to overcome challenges.") had the highest mean score for both the control group (IS_2, $M = 2.23$; IS_4, $M = 2.31$) and the experimental group (IS_2, $M = 2.82$; IS_4, $M = 2.82$). While

potentially due to chance, these findings could be telling of behaviors that are particularly salient for followers. That is, these behaviors may be strong and clear signals to followers that the leader is transformational.

Also, of interest were items strongly correlated with the total score. Such relationships are indicative of what behaviors were most predictive of a follower evaluating a leader as transformational. In the control group, Items IS_3 (“Got me to look at problems from many different angles.”) and IC_4 (“Helped me to develop my strengths.”) were most predictive of a higher overall transformational leader score. These findings suggest that when a follower received information regarding looking at problems differently or developing strengths, they tended to evaluate the leader as more transformational. In comparison, the experimental group, items IS_4 (“Suggested new ways of looking at how to overcome challenges.”) and IC_4 (“Helped me to develop my strengths.”) were the best predictors of higher overall transformational leader scores. Thus, in addition to developing strengths, leaders that help others look at how to overcome challenges trigger their followers to view the leader as transformational.

CHAPTER 8: GENERAL DISCUSSION

Transformational leadership has undeniably played a crucial role in advancing leadership research (van Knippenberg & Sitkin, 2013). However, after 25 years of research, we have only very limited correlational evidence (Antonakis, 2012). The paucity of advancement stems primarily from 1) a lack of conceptual clarity and 2) measuring transformational leadership in a way that conflates behaviors with evaluations from the individual completing the questionnaire (Bono & Judge, 2004; Fischer et al., 2020). While follower's evaluations are certainly important, they are different than behaviors and should be thought of and measured as such. Interestingly, however, Banks and colleagues (preprint) found in their systematic review that only 3% of organizational behavior variables are behavioral in nature.

While this is not the first work to raise concerns over the lack of behaviors in leadership research, this work serves as an initial step in addressing this issue for transformational leadership through the integration of signaling theory. The results of this work have important theoretical as well as practical implications because they demonstrate behaviors that signal transformational leadership. In the following sections, I review the theoretical and practical implications, limitations, and discuss recommendations for future research.

8.1 Theoretical Implications

First, the current work sought to advance transformational leadership through the incorporation of signaling theory. Signaling theory brings with it a rich history that draws upon other scientific domains (Connelly et al., 2011; Dawkins, 1976; Maynard-Smith et al., 2003), which is a promising sign for future theoretical linkages and causal

connections. Recent developments have connected charismatic signaling behavior with evolutionary theories of leadership and followership to suggest *why* charismatic leader behaviors has existed for over two millennia (Grabo et al., 2017). Such advancements have gone beyond the *how* of charismatic leaders' influence followers, and begun to explore why these behaviors have such an impact. Thus, the theoretical connection between transformational leadership and signaling theory opens the door to a greater conceptual toolbox from which transformational leadership can advance.

Second, this work has generated theoretical advancements by presenting a preliminary list of transformational leader signaling behaviors. Study 1 identified six leader behaviors: teaching life lessons, introduction to developmental opportunities, providing different perspectives, seeking different perspectives, questioning critical assumptions, and speaking words of affirmation. Study 2 found corroborating evidence (Cohen's $d = .50$) that these six behaviors cause followers to evaluate the leader as transformational (i.e., developmental and empowering). Importantly, the objectivity and observability of these leader behaviors are critical for theory development as it reduces the degree of bias and discrimination in the development of these theories. For instance, gender bias is a multilevel phenomenon that impacts organizations at all levels as well as organizational research (Hogue & Lord, 2007). Consequently, findings from research studies that do not include objective measures may be tampered by organization wide, systemic biases. Objective measures of leadership reduce the potential for implicit theories of leadership to creep into the findings which could ultimately be used to inform practitioners and policy makers.

Lastly, the integration of signaling theory with transformational leadership allows for greater conceptual clarity by avoiding the conflation between two key concepts: behaviors and evaluations. The use of the Campbell et al. model helped to distinguish between these components, and illuminate the gaps that the integration of signaling theory can help address. Similar integrations have occurred with other conceptualizations of leadership styles that have allowed for the relationships between follower evaluations and leader behaviors to be oriented within their broader nomological networks (e.g., Antonakis et al., 2016; Banks et al., in press). Prior to such integration, the nomological network of these leadership styles were comparable to a ‘theory stew.’ That is, with leadership behaviors now in the focus there is greater theoretical parsimony which ultimately contributes to implications with more realistic and helpful practical relevance.

8.2 Practical Implications

While the primary purpose of the current work was to advance transformational leadership and signaling theory, there also some important takeaways for practice. First, the current work provides evidence that transformational leader behaviors can be objectively observed which is an important advancement for training and development as well as selection. Traditional evaluations of transformational leader behaviors consisted of questionnaires which are riddled with problems that distort findings. Consequently, field studies collecting data on followers’ evaluations were likely equally, if not more so, indicative of whether the evaluator liked their boss (Yammarino et al., 2020). Observable behaviors may help alleviate such biases, allowing for greater objectivity in areas such as selection.

Second, there is currently little theoretical and empirical work regarding how workers can develop transformational leader behaviors. As I demonstrated in Study 2, followers recognize transformational leadership when they see it, with Study 1 providing evidence of what the followers are seeing. Traditional empirical studies of transformational leader training involve group training sessions involving discussions around ideal leaders, and individual sessions to provide feedback based on questionnaire results (Barling et al., 1996). While such training may be helpful and serve a purpose, a taxonomy of evidence-based behaviors would be a significantly more effective and efficient approach for teaching effective leadership tactics (e.g., Antonakis et al., 2011).

Third, identifying a taxonomy of transformational leader behaviors allows for actionable learning events that result in greater retention (Kraiger & Ford, 2020). Such an approach draws upon empirically supported educational tactics and incorporates them into workplace learning and development. For instance, instructors can present video of exemplary transformational leader behavior, and then have training participants write and deliver speeches involving these behaviors (Gingerich et al., 2014). Importantly, in addition to more effective pedagogical tactics, this form of training can also be relatively easily evaluated for its efficacy. Gurdjian et al. (2014) reported repeated findings of companies speaking to the importance of developing leadership skills, but rarely having empirical evidence for the efficacy for their programs that aim to accomplish this. Randomized experiments, such as the design of Study 2, can provide evidence for the efficacy of implementing such behaviors as well as allow for causal inferences to be made by ruling out alternative explanations. Leadership training programs would benefit

greatly from such designs as they would rule out alternative explanations while providing empirical evidence for the efficacy of the program.

8.3 Limitations and Future Directions

While both studies have shed light on transformational leadership and signaling theory, there are limitations in this work that temper my conclusions and provide important opportunities for future research. First, the six behaviors identified in Study 1 are not necessarily representative of what every follower evaluates as transformational leader behavior. These behaviors were drawn from undergraduate students' responses with the specific purpose of creating a commencement speech tailored toward college students. Consequently, while the evidence from Study 2 suggests a strong causal relationship between these signaling behaviors and how followers evaluate the leader, followers of other demographics may not evaluate the behaviors as signals of a transformational leader. Future research should explore the extent to which certain behaviors are evaluated as signals of transformational leadership among different demographics (e.g., age, race, country). Evidence for behaviors consistently evaluated as transformational leader behaviors would hold particularly important implications as it identifies signals that are likely to stand the test of time (Henrich, 2009).

Second, the Study 2 design allowed for strong causal inferences; however, it would be desirable to replicate these results both virtually as well as in person. If anything, the effect size magnitude would likely be larger in person than the virtual setting utilized in this work. Meetings research suggests the growing utilization of virtual communication (e.g., video calls) while commonly referencing the informal communication patterns of face to face meetings that cannot be replicated virtually

(Denstadli et al., 2012). Such informal communication patterns may hold signaling behavior related to leadership, and thus influence a follower's evaluation of the leader. Relatedly, future research should investigate the non-verbal signals of transformational leadership. Tactics such as facial expressions and body gestures have been identified for charismatic leadership (Antonakis et al., 2011), and comparable expression and gestures likely exist as signals of transformational leadership as well.

Another area where future research should investigate is the costs and rewards of these signals. Searcy and Nowicki (2005) spoke of analyzing these in terms of production costs, developmental costs, and maintenance costs. That is, the energy required to enact the transformational leader signal, the costs paid in advance to be capable of displaying the signal, and the need to consistently exhibit the reputation and expertise required of transformational leadership. In addition to investigating the costs associated with being a transformational leader, future research can investigate the extent to which followers evaluate the signals as costly (i.e., legitimate). For example, a follower might evaluate one signaling of leadership as lacking in depth and faked, while other signals may be evaluated as too costly or time-consuming for a leader to be able to fake it (Grabo et al., 2017). Additionally, an important opportunity for future research is investigating whether these transformational leader behaviors influence follower behavior. For instance, do these behaviors have positive or negative consequences for leader engagement and commitment, leader emergence, or organizational performance.

Lastly, and perhaps most importantly, transformational leadership is in need a full reconceptualization. Such a reconceptualization should follow Podsakoff and colleague's (2016) four step process for defining a construct in a way that entails clarity. This process

was touched upon in this work, however, the primary purpose of this work was to integrate transformational leadership and signaling theory rather than develop a new definition. A new definition should pay particular attention to the incorporation of signaling theory, while clearly distinguishing transformational leadership from similar constructs such as charismatic leadership and mentorship. While not an easy task, a reconceptualization will help chart the path for future research to develop meaningful and realistic practical implications rather than add to the already messy construct space.

8.4 Conclusion

Transformational leadership behavior has received an extraordinary amount of attention due to claims of its impact on individuals and organizations. In this manuscript, I have addressed critical limitations that have prevented advancements for transformational leadership research and its practice. I did this first by integrating signaling theory with transformational leadership to provide a framework that distinguishes leader behaviors from follower evaluations. Then, I identified and provided evidence for six leader behaviors that followers evaluated as signals of transformational leadership. Finally, I provided key takeaways for theory and practice, and identified limitations of this work and the related opportunities for future research.

Table 1*Transformational leadership behaviors (TLBs)*

	TLB	Definition	Why effective	Example from student data
VERBAL	1. Teaching life lessons	A lesson or principle applicable to more than one area of life.	An efficient and effective teaching tactic that covers a broad area while demonstrating the leader's valuable knowledge resources	"He taught me some very valuable lessons, the first of which was to maintain a strong mental fortitude at all times..."
	2. Introduce follower to developmental opportunity	Encouragement to step out of one's comfort zone for the sake of growth and development	Allows follower to identify important developmental opportunities that ultimately leads to their empowerment.	"She encouraged me to push out of my comfort zone and try new things."
	3. Present different perspectives	Ideas or arguments that alter other's perspective on a matter	Demonstrates to followers how to approach solutions differently	"He challenged me to see the world from the possible perspectives of others rather than from a self-centered viewpoint..."
	4. Seek different perspectives	Asking others to express their creative ideas to generate the best solution	Develops confidence in one's creative thinking and considers different approaches to problem solving	"The general manager at my job is always questioning the ideas of others, but not to bring them down. She does this to make sure the group has come up with the best solution and not the easiest solution."
	5. Question critical assumptions	Questions that examine the fundamental elements of an idea or argument	Demonstrates to followers how to examine problems and situations critically, and how to be an independent thinker	"Good leaders take others' opinions and make it into a discussion...if there are conflicts in opinions or anything of the sort, this makes for a great conversation which everyone can learn from and also learn to understand other peoples' points of view."
	6. Words of affirmation	Enhancing a follower's awareness of their strengths through recognition	Follower develops through greater awareness of their strengths	"My coach pumped me with self-confidence and has made me into the person that I am today...I owe my confidence to her and I am proud to me the young woman that I am today!"

Table 2*Results of Hypothesis Testing for H1*

Independent Samples T-Test

	Statistic	df	p	Cohen's d	Lower	Upper	
score	Student's t	-5.050829 ^a	414.0000	0.0000007	-0.4953661	-0.6927566	-0.2968669

^a Levene's test is significant ($p < .05$), suggesting a violation of the assumption of equal variances

Group Descriptives

Group	N	Mean	Median	SD	SE
score control	212	16.01887	17.00000	6.787892	0.4661943
experimental	204	19.14706	19.50000	5.782421	0.4048505

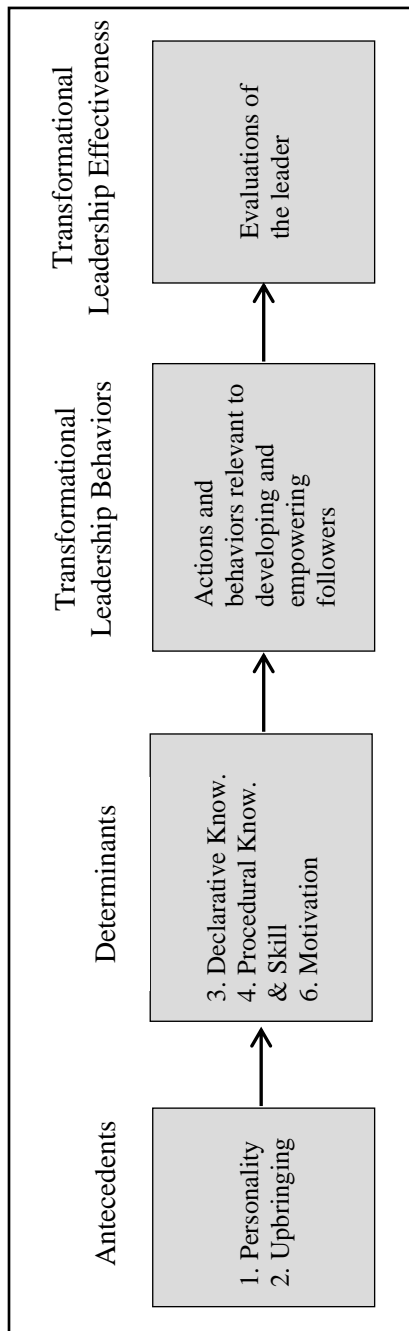


Figure 1
Transformational leadership adaption of Campbell et al.'s Model of Job Performance

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APPENDIX A: STUDY 1 FULL QUESTIONNAIRE

Transformational Leadership Questions

Start of Block: Default Question Block**Consent to Participate in a Research Study**

Title of the Project: An Investigation into Transformational Leadership Behaviors and Signaling Theory

Principal Investigator: George Stock, UNC Charlotte

Faculty Advisor: Dr. George Banks, UNC Charlotte

You are invited to participate in a research study. Participation in this research study is voluntary. Below is key information to help you decide whether to participate.

The purpose of this study is to identify examples of behaviors of transformational leadership. You will be given prompts of general transformational leadership behaviors and then asked to provide examples of personal experiences related to the prompts. You are welcome to discontinue your participation at any time.

You must be age 18 or older and currently an UNC-Charlotte student to participate.

Participants will receive 0.5 SONA Research Credit upon completion.

It will take you about 10 minutes to complete the entire study.

This study will consist of five questions which you can respond to electronically.

You will not be asked to provide any identifying information.

We do not believe that you will experience any risk from participating in this study.

You will not benefit personally by participating in this study. What we learn about transformational leadership may be beneficial to others.

You will not receive monetary compensation for participation.

Your responses will be kept completely confidential. Participants will not be asked to provide identification information, nor will they be asked to provide the name of the leader in their responses. When data collection is complete, the data from all participants will be grouped together and analyzed.

We might use the survey data for future research studies, and we might share the non-identifiable survey data with other researchers for future research studies without additional consent from you. The data we share will NOT include information that could identify you. Participation is voluntary. You may choose not to take part in the study. You may start participating and change your mind and stop participation at any time. If

you have questions concerning the study, contact the principal investigator, George Stock, by email at gstock1@uncc.edu, or the Faculty Advisor, Dr. George Banks, at gbanks3@uncc.edu. If you have further questions or concerns about your rights as a participant in this study, contact the Office of Research Compliance at (704) 687-1871 or uncc-irb@uncc.edu.

If you are 18 years of age or older and currently an UNC-Charlotte student, have read and understand the information provided, and freely consent to participate in the study, please press continue.

Page Break



Q1 How has a leader developed you through teaching and coaching? Please use specific examples and a minimum of 200 characters (or about 50 words) in your response.

0



Page Break



Q2 How has a leader inspired and challenged you to rethink the way you do things? Again, please use specific examples and a minimum of 200 characters (or about 50 words) in your response.

0

Page Break



Q3 How has a leader helped you develop your strengths and/or weaknesses. Again, please use specific examples and a minimum of 50 words in your response.

0

Page Break



Q4 How has a leader challenged you to look at old problems from different angles? Again, please use specific examples and a minimum of 50 words in your response.

0

Page Break



Q5 How has a leader questioned whether the group's basic assumptions about a problem were appropriate? Again, please use specific examples and a minimum of 50 words in your response.

0

End of Block: Default Question Block

APPENDIX B: STUDY 2 FULL QUESTIONNAIRE

TFL Thesis Study 2

Start of Block: Block 1**IRB Consent to Participate in a Research Study**

Principal Investigator: George Stock, UNC Charlotte

Faculty Advisor: Dr. George Banks, UNC Charlotte

You are invited to participate in a research study. Participation in this research study is voluntary. Below is key information to help you decide whether to participate.

This study is on virtual commencement speeches and the purpose of this study is to identify effective tactics utilized during speeches. You will be watching a 3 minute commencement speech and then complete an evaluation of the speech.

It will take you about 5 minutes to complete the entire study.

This study will consist of watching a short video and responding electronically to eight questions.

You must be age 18 or older and currently a UNC-Charlotte student to participate.

The first 100 participants will receive a \$5 Amazon Gift Card. All participants will be in a drawing to receive one of two \$50 Amazon Gift Card. Participants must complete the entire task to be eligible to receive the Amazon Gift Card.

You will be asked to provide your name and email address and, if eligible, contacted via email to redeem your electronic Amazon gift card.

We do not believe that you will experience any risk from participating in this study.

Your responses will be kept completely confidential. Participants will be asked to provide their name and email address for any necessary contact regarding the Amazon gift cards; however, this information will not be linked to your responses. When data collection is complete, the data from all participants will be grouped together and analyzed.

We might use the survey data for future research studies, and we might share the non-identifiable survey data with other researchers for future research studies without additional consent from you. The data we share will NOT include information that could identify you.

Participation is voluntary. You may choose not to take part in the study. You may start participating and change your mind and stop participation at any time.

If you have questions concerning the study, contact the principal investigator, George Stock, by email at gstock1@uncc.edu, or the Faculty Advisor, Dr. George Banks, at

gbanks3@uncc.edu. If you have further questions or concerns about your rights as a participant in this study, contact the Office of Research Compliance at (704) 687-1871 or uncc-irb@uncc.edu.

If you are 18 years of age or older and currently a UNC-Charlotte student, have read and understand the information provided, and freely consent to participate in the study, please advance to the next page.

Page Break

Q8

On the next page you will be presented with a video of a student giving a commencement address. Please avoid any distractions while watching this 3 minute speech.

Page Break

End of Block: Block 1

Start of Block: Stand_Vid_Block

Q15 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

Stand_Vid

Please watch the entire video, and then immediately advance to the next page to answer questions regarding the speech.

End of Block: Stand_Vid_Block

Start of Block: TFL_Vid_Block

Q16 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

TFL_Vid

Please watch the entire video, and then immediately advance to the next page to answer questions regarding the speech.

End of Block: TFL_Vid_Block

Start of Block: MLQ Block

Q2

The following set of questions is related to your evaluation of the student commencement speaker's speech.

X→

(IS) In the speech, the commencement speaker...

	Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly often (3)	Frequently, if not always (4)
Re-examined critical assumptions to question whether they were appropriate. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sought differing perspectives when solving problems. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Got me to look at problems from many different angles. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suggested new ways of looking at how to overcome challenges. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



(IC) In the speech, the commencement speaker...

	Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly often (3)	Frequently, if not always (4)
Spent time teaching and coaching. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treated me as an individual rather than just as a member of the audience. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Considered me having different needs, abilities, and aspirations from others in the audience. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helped me to develop my strengths. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

End of Block: MLQ Block

Start of Block: Identification

Q5

Please enter your first name and email address to enter the drawing for a \$50 Amazon Gift Card.

(F_Name) First Name

(L_Name) Last Name

(Email) Email Address

End of Block: Identification

APPENDIX C: STANDARD SPEECH

1. Hello, Class of 2021!
2. I'm very honored and thankful to be here today, and to have the opportunity to address this year's graduating class. It's an opportunity that humbles me.
3. When I think back to the time leading up to my first days of college, two words come to mind...excited and mystified.
4. For me, those days seem like yesterday. One thing that captures the excitement and mystification was being asked, on a daily occurrence, "What do you want to study in college?"
5. At the time, I had no idea what I wanted to study and wasn't sure how I was ever going to decide, because this question seemed to be synonymous with "what do you want to do for the rest of your life?"
6. It wasn't that I didn't have any interests; it was quite the opposite. I was excited by all of the topics and career choices I could pursue. Meanwhile, mystified by how I was supposed to decide on one path as well as suppress all of the distractions that college life would bring.
7. At the time, older friends and family members were preparing me to decide what I might want to do, as well as imparting me with their wisdom on how to make the most out of my college years.
8. I remember one of my aunts giving me what turned out to be some of the most valuable advice...She looked at me and said, "You better learn to like coffee!" She was right.

9. Others weighed the pros and cons of various career paths, informing me which fields they could see me being successful in. Some were a bit more practical, telling me which fields were more likely to provide an income that could actually pay off student loans!
10. As I stand here today, looking back on my college years, I can see that the professors, classmates, friends, and intellectual growth I encountered along the way, helped me make the most out of my college years. Preparing me, as well as all of you, for the next chapter of our life
11. We've been given the resources and opportunities to become better versions of ourselves, and equipped to positively impact the world around us, however we so choose.
12. In fact, this year's graduating class has already made an impact by accumulating among the highest number of volunteer hours compared to previous graduating classes over the past 5 years. An achievement that holds promise to be the way we will choose to utilize our skills and energy through the next chapters of our life.
13. So, Class of 2021, as this chapter of our life comes to a close and the next chapter begins, may we continue to choose to positively impact the world around us. Using our skills and abilities to do so.
14. And, may we go forward with zest and confidence into this next chapter, embracing more exciting and mystifying experiences.
15. Thank you, and congratulations to the class of 2021!

APPENDIX D: TRANSFORMATIONAL SPEECH

1. Hello, Class of 2021!
2. I'm honored to be able to celebrate with you all today--this major life accomplishment that we've all achieved. It's been a marathon of papers, exams, and studies, and today, we all cross the finish line together...
3. During a sophomore year internship, I was introduced to the developmental power of self-reflection... So, I wanted to ask all of you today...what do you remember from the months leading up to your first year of college?
4. For me, those days seem like yesterday... One thing that sticks out was being asked, on a daily occurrence, "What do you want to study in college?"
5. I had no idea, because this question seemed to be synonymous with "what do you want to do for the rest of your life?" And, at the time, I questioned why I needed to have this all figured out.
6. So, to divert the attention away from me, I'd ask if they had any advice. To which they'd tell me something like (IMPERSONATION) "Actually, I don't even use what I learned in college for my work." Or, they would take the time to teach me a life lesson like, "Whatever you study or whatever work you do, always respect people."
7. When I asked my grandmother, she told me "from this point forward, time would only move faster." After that, I realized that these life lessons were not just preparing me for college, they were preparing me for adulthood.
8. As I began asking more people for advice on college and adulthood, I seemed to receive a collective response of "Don't just let these years pass by."

9. These conversations helped shift my mindset from thinking about choosing a major and a career path, to thinking about how I was going to make the most out of my college years...
10. As I stand here today...looking back on my college years...I see that the professors, classmates, friends, and intellectual growth I encountered along the way, helped me make the most out of my college years...by shifting my desires from 'wanting to have all of the answers', to 'wanting to ask the best questions.' You all have truly impacted me.
11. You all taught me a life lesson that helped me get the most out of these years...that the purpose of learning is not merely to be the most intelligent person in the room; instead it is to be able to better understand the perspectives of everyone else in the room.
12. In fact, I saw this lived out as my peers and I frequently questioned why there is so much hate in the world, and what we could do to produce more love. Witnessing in these conversations the developmental power of listening.
13. So, Class of 2021, as this next chapter of our lives begins, I challenge you to use what we've learned to ask great questions, rather than to always have an answer for everything.
14. And, to spend time reflecting on how you and your classmates have grown, it's truly something for us to be proud of.
15. Thank you, and congratulations to the class of 2021!