How Leader Role Identity Influences the Process of Leader Emergence:

A Social Network Analysis

by

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Author's Declaration

This thesis consists of material all of which I authored or co-authored: see Statement of

Contributions included in the thesis. This is a true copy of the thesis, including any required final

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Statement of Contributions

A version of this essay is to be submitted to *The Leadership Quarterly* with my co-authors

(Kwok, N., Hanig, S., Shen, W., & Brown, D. J.).

Abstract

Contemporary literature on leadership emphasizes the importance of having a leader identity in building leadership skills and functioning effectively as leaders. We build on this approach by examining and unpacking the role of leader identity in leadership emergence. Taking the perspective that leadership is a dynamic social process between group members, we propose a social network-based process model whereby leader role identity predicts network centrality, which leads to leader emergence. We test our model using a sample of 88 cadets participating in a training course on leadership development. In support of our model, cadets who possess a stronger leader identity were more likely to emerge as leaders, as rated by peers and course trainers, and these relationships were mediated by two indicators of network centrality reflecting one's ability to broker information (i.e., betweenness centrality) and one's popularity (i.e., indegree centrality) within one's group. Implications for research and practice are discussed.

Keywords: leader identity, leader emergence, social networks

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Dedication

To the Labahn and Leslie Family.

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Introduction

"Who am I? How do others see me?" Our answers to these questions reflect our identity, the social lens through which people make sense of and interact with the environment (Markus & Wurf, 1987). Identity scholars have argued that identity plays a key role in shaping and guiding our choices and behaviours, including our interactions with others (Markus, Cross & Wurf, 1990). At the same time, leadership scholars have increasingly conceptualized leadership as a dynamic social process that influences the way people think, feel, and behave in group contexts (Yukl, 2010). Thus, not surprisingly, the two streams of research have converged and researchers have theorized that leader identity plays an important role in leadership (e.g., Day, Harrison, & Halpin, 2009; DeRue & Ashford, 2010).

Myriad ways of conceptualizing identity, including leader identity, can be found in the literature (Ibarra, Wittman, Petriglieri & Day, 2014; Miscenko & Day, 2015), but the majority of identity-based leadership research has adopted a social-identity perspective, focusing on identification based on group membership (see van Knippenberg, 2011 for a review). This work has shown that individuals who are prototypical of their group (i.e., share most in-group characteristics) are more likely to emerge as effective leaders across a wide range of indicators, including perceived leadership effectiveness, organizational citizenship behaviours, and cooperation intentions (van Knippenberg, 2011; Hogg, 2001; van Knippenberg & Hogg, 2003). Prototypical leaders are also more likely to be perceived as authentic (Steffens et al., in press), charismatic (Steffens et al., 2015), and trustworthy (Giessner & van Knippenberg, 2008), and have followers who report higher levels of job satisfaction (Cicero et al., 2007). Social-identity based perspectives have also highlighted that one key pathway by which leaders influence

followers is by crafting and encouraging group members to act in service of a shared group identity (Steffens et al., 2014).

Although a social-identity based perspective has revealed many insights about leadership, conceptually, individuals may also derive meaning or think about the self based on characteristics other than group membership (i.e., individual characteristics and social roles; Ashforth, 2001) and these alternative ways to conceptualize and assess leader identity have been underexplored in the research literature. Furthermore, social-identity based perspectives explain leader effectiveness primarily through perceived leader prototypicality (van Knippenberg, 2011), but are generally silent regarding how emerging leaders develop specific leadership skills and competencies (Ibarra et al., 2014). In contrast, a growing body of research on role identities (i.e., self-definitions based on occupying particular roles) has shown that this way of conceptualizing identity is linked to a variety of role-based behaviours, including job performance (Farmer & Van Dyne, 2010), creativity (Farmer, Tierney, & Kung-McIntyre, 2003), moral judgments (Leavitt, Reynolds, Barnes, Schilpzand, & Hannah, 2012), and decision-making (Mathias & Williams, 2014). The relationship between role identity and role-based behaviour can be understood from a social cognitive perspective, where roles serve as a self-regulatory mechanism that include expectations of how to behave when occupying a particular role, and individuals who find a role as important or central to their self-view will regulate their behaviour around this role (Farmer, Tierney, & Kung-McIntyre, 2003). Thus, in the current study, we advance our understanding of the importance of leader identity in leadership processes, specifically leader emergence, from a role-based perspective.

Roles are the "hats" a person wears (Gecas, 1982). Although individuals may hold a variety of role-based identities, understanding whether or not people see themselves as leaders

(i.e., possess a strong leader role identity) is important for several reasons. First, it is only when an individual possesses and finds a leader role identity important will they behave in a leader-like manner and develop skills in the leadership domain (Lord & Hall, 2005). Second, recent theoretical developments suggest that individuals who hold formal leadership positions within an organizational hierarchy do not *necessarily* see themselves as leaders (DeRue & Ashford, 2010), and this absence of leader role identity can result in less effective leadership (Ibarra et al., 2014). Finally, because identities are malleable constructs that develop throughout the lifespan (Day et al. 2009), taking a leader role identity perspective moves the field away from the longstanding trait-based perspective of leadership, which has focused on relatively immutable characteristics (e.g., personality traits), to the theoretical orientation that changing leader identities play an integral part in leader development (Day et al., 2014). Overall, evidence supports that it is fruitful to conceptualize leader identity as a role an individual occupies and possessing a leader role identity should positively impact the extent to which an individual behaves leader-like and emerges as a leader.

In the leadership literature, the two most common categories of outcomes are leadership emergence and leadership effectiveness (Lord, De Vader, & Alliger, 1986). In the current study, we focus on leadership emergence, commonly defined as the extent to which an individual is perceived as "leader-like" (Hogan, Curphy, & Hogan, 1994), and a longstanding body of research suggests that leadership perceptions are important facilitators of work-related outcomes, including leadership effectiveness and employee well-being (Lord & Dinh, 2014). Integrating theoretical work on leader identity (e.g., Lord & Hall, 2005), the social and relational process perspective on leadership (e.g., Day, Harrison, & Halpin, 2009), and organizational social network research (Brass, Galaskiewicz, Greve, & Tsai, 2004), we develop and test a process

model whereby the impact of leader identity on leader emergence is mediated by one's social network position. Given that identity is an important indicator of how one behaves (e.g., Markus & Wurf, 1987), we predict that possessing a leader identity will impel individuals to attain a central position in their social network. In turn, being centrally positioned in one's social network should be associated with leadership outcomes (Carter, DeChurch, Braun, & Contractor, 2015), including one's likelihood of being viewed as leader-like by others.

In proposing and testing this model, our paper advances the leadership literature in two main ways. First, extant literature on leader role identity has been primarily theoretical rather than empirical in nature, resulting in a critical theory-data gap. For example, although researchers have proposed that leader role identities should impact leadership emergence (DeRue & Ashford, 2010), to our knowledge, there have been no direct tests of this relationship. Therefore, we directly test the assumption that leader role identity impacts leader emergence (e.g., Lord & Hall, 2005; Day et al., 2009; DeRue & Ashford, 2010), a claim often made but generally lacking empirical verification (for an exception, see Day & Sin, 2011). Second, although scholars are beginning to view leadership as a social and relational process (Day et al., 2009), there is a shortage of quantitative research employing methodologies that rigorously capture such relationships. By testing a process model of *how* leader identity impacts informal leader emergence, we answer calls to study leadership through a social network lens and capture the interpersonal and behavioural aspects of leader emergence (Day et al., 2014). Finally we contribute to research on identity and organizational social networks by exploring the effect of role identity on the social network position of individuals. While it is well established that individuals often have more network connections to those who share a similar social identity (Ibarra, Kilduff, & Tsai, 2005), little is known about how role identities impact the structure of

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social networks. We seek to determine whether leader identity is a role identity that leads individuals to occupy more central positions and thus have status and influence in their group (Anderson et al., 2015; Yap & Harrigan, 2015).

Theoretical Background

Identity

Self-concepts are cognitive structures stored in memory that can include content and evaluative judgments about the self and are used to interpret the environment and focus attention on self-relevant goals (Oyserman, Elmore, & Smith, 2012). It is generally understood that the self-concept of an individual is structured around domains that others commonly use to categorize that individual (e.g., race, gender, ethnicity; Oyserman & Fryberg, 2006). Although self-concepts are considered to encompass global views of the self, identities are distinct parts of self-concepts that include the internalized meaning of what to do, what to value, and how to behave in various roles and relationships (Stryker & Burke, 2004; Tajfel & Turner, 2004). Identity can be separated into role identities and personal identities; role identities involve membership in social or organizational roles where a complementary role matters (e.g., for a leader to exist there must be followers) and personal identities involve individual traits and characteristics that may be separate or part of role identities (Oyserman et al., 2012). For example, an individual may view himself or herself as outgoing (e.g., personal identity) regardless of whether they are a teacher or parent (e.g., role identity). Identities are derived from past experiences in specific or general situations that are stored in memory. Once identities are formed they organize and guide processing of self-relevant information in the environment and affect an individual's response to the environment (Markus, 1977).

A key aspect of role identity is its centrality or importance. Identities that are important to an individual are more stable and relevant across a wide range of situations (Lord & Brown, 2004) and affect information processing and behaviour more powerfully (Markus & Wurf, 1987). Originally described as schematic, individuals with a central role identity are more likely to demonstrate behavioural consistency in the particular domain of the identity, feel certain about this self-view, see this self-view as important, and prefer being seen by others in this light (Cross & Markus, 1994; Markus, 1977). Indeed, contemporary research supports this notion that individuals who know themselves are motivated to act in ways that are consistent with their view of themselves (Oyserman, Fryberg, & Yoder, 2007). The theoretical reasons why central identities impact behaviour more powerfully compared to less central identities can be understood from several perspectives. First, Turner (1978) described a process of role-person merger, whereby as an individual's role and personal identity merge, the individual's sense of self becomes defined by the role. Thus, over time, an individual's identity becomes increasingly aligned with his or her behaviours (Tice, 1992). Second, role identities that are more central to an individual are likely to be higher in activation potential, which refers to the extent to which a knowledge structure (i.e., role identity) is readily able to process information in the environment and impact behaviour (Aquino, Freeman, Reed II, Lim, & Felps, 2009). Taken together, central identities provide a sense of coherence for individuals when defining themselves and interacting with the environment (Fiske, 1992). Furthermore, in seeking and maintaining such coherence, individuals will act in ways that are consistent with those central identities (Swann, 2012).

Leader Role Identity

Applying insights from the role identity literature to the context of leadership, leader role identity can be broadly defined as the extent to which an individual views him or herself as a

leader (Hiller, 2005; Lord & Hall, 2005). A large body of work supports that through socialization and past experiences, individuals develop personal assumptions about the traits and behaviours that effective leaders should possess or exhibit (Epitropaki & Martin, 2004; Keller, 2000). These traits and behaviours form schemas that are stored in memory, and affect how people perceive and interpret information, and behave when interacting with the environment (Jelinek, Smircich, & Hirsch, 1983). It is argued that when individuals interact with leaders, the extent to which these leader schemas are activated by the leaders' behaviours predict perceptions of leadership ability (Kenney et al., 1996). Following this logic, we suggest that individuals who see themselves as a leader (i.e., have a stronger leader role identity) will be more inclined to act leader-like (i.e., role-based behaviour) compared to those who do not see themselves as a leader, and such leader-like behaviour will be consistent with the schematic traits and behaviours of effective leaders. This notion is consistent with research on ethnic (Guendelman, Cheryan, & Monin, 2011) and academic (Tarrant & Butler, 2011) identities, which demonstrates that individuals signal an identity to others by acting in ways that are schematically consistent with the identity. In contrast, if individuals do not think of themselves as a leader or aspire to be a leader, then they should have little motivation to act or behave as a leader (Chan & Drasgow, 2001). In order to maintain a self-image or identity, individuals must engage in "face work" to convince others of their identity (Goffman, 1959). Because possessing a leader role identity is thought to affect the behaviour of individuals and this behaviour is likely to be high in visibility, individuals who possess a strong leader role identity should be perceived by others to engage in leader-like behaviours.

> *Hypothesis 1: Leader role identity predicts leader emergence, such that individuals with*
> *a stronger leader identity will be more likely to be viewed by others as emergent leaders.*

Social Networks and Leadership

Social network analysis (SNA) represents a set of theories and processes used to capture the structures and relationships within a network (Hoppe & Reinelt, 2010). A social network reflects "a set of [actors] and the set of ties representing some relationship, or lack of relationship, between the [actors]" (Brass, Galaskiewicz, Greve, & Tsai, 2004, p. 795). Structurally, a network that consists of closely connected members (i.e., many of the possible relational connections are present) is considered a high-density network whereas a network that consists of acquaintances (i.e., many of the possible relational connections are absent) is considered a low-density network (Granovetter, 1983; Hoppe & Reinelt, 2010). Relationally, a key postulate of SNA is that when group members interact with each other connections are formed, and such connections can facilitate the exchange of valued resources (e.g., information; Granovetter, 1983). In essence, social networks denote the manner by which actors are connected.

Social networks have therefore been applied to organizational research at various levels of analysis ranging from relationships between firms (i.e., macro-level) to relationships between people (i.e., micro-level; Brass et al., 2004; Kilduff & Brass, 2010). In the present study, we adopt the micro-level of analysis, using social networks to model the informal social structure of organizations (McEvily, Soda, & Totoriello, 2014), such as the relationships between individuals within an organization, which may be characterized by advice sharing, friendship, or other types of exchanges (Tasseli, Kilduff, & Menges, 2015). Although it is well documented that people are influenced by their social context, there is emerging evidence that the formation of networks can also be influenced by the traits of individual actors (e.g., Fang, Landis, Zhang, Andersen, Shaw, & Kiduff, 2015; Tassli et al., 2015).

It is argued that the fates of actors are influenced in important ways by how they are positioned within the broader structure of their social networks (Scott, 2001). Notably, employees vary in the extent to which they occupy a central position within the social network of their organization (Brass, 1981, 1984; Burt, 1992; Freeman, 1979). Centrality is a perennial and fundamental concept to research on social networks; it indicates the extent to which an actor is integrated in a given network and important to the network's functioning (Freeman et al., 1979). Having greater centrality within one's social network enhances one's access to social resources, such as information and social support, which can facilitate important work related outcomes, such as job performance and career advancement (Kildfuff & Brass, 2010; Sparrow, Liden, Wayne, & Kraimer, 2001) as well as leadership (Carter et al., 2015).

Contemporary leadership theories suggest that although holding a formal position within an organizational hierarchy conveys meaning with respect to being a leader, some individuals are seen as leaders despite not being in formal leadership positions (DeRue & Ashford, 2010). Research indicates that multiple informal leaders may emerge in team contexts and that the emergence of informal leaders is beneficial to team performance (Carson, Tesluk, & Marrone, 2007; Day et al., 2014; White, Currie, & Lockett, 2016; Zhang, Waldman, & Wang, 2012). Therefore, leadership is beginning to be viewed as a social process between group members, whereby the interactions that group members have with each other have an impact on which individuals in a group emerge as leaders (Chrobot-Mason, Gerbasi, & Cullen-Lester, 2016; Cullen-Lester & Yammarino, 2016; Day et al., 2009). An individual's social network position is reflective of the quality and quantify of social interactions they have with other group members. Accordingly, it is important to highlight the importance of an individual's social network position when considering leader emergence.

A stream of research has emerged that investigates links between individual differences and one's social network centrality (e.g., Kilduff & Krackhardt, 1994; Mehra, Kilduff, & Brass, 2001; Oh & Kilduff, 2008; Tasseli et al., 2015). A recent meta-analytic summary highlights that characteristics of actors do consistently predict network centrality position (Fang et al., 2015). As an example, self-monitoring was one such characteristic, and its relationship with network centrality has been explained as due to higher self-monitors ability to effectively conform to different social groups, leading to a broad and dispersed set of network ties (Oh & Kilduff, 2008). We theorize that leader identity is another characteristic of actors that is likely associated with network centrality in organizations, as leader role identity should impact how individuals behave across relational contexts (Lord & Hall, 2005). In particular, as we explain in detail below, individuals who hold a stronger leader role identity should be more likely to be central within their organization for two reasons: their ability to broker valuable information to other members of their organization who would otherwise be unconnected to each other (operationalized as betweenness centrality in social network research) and by establishing a greater number of friendship ties (operationalized as indegree centrality in social network research).

In part, leadership represents a process of influence (Yukl, 2006; Northouse, 2015). Drawing upon research on status, which is defined as voluntary deference of respect and admiration toward people who have perceived instrumental social value (Anderson et al., 2015), we argue that individuals higher in leader role identity will engage in behaviours that lead to status and influence within a group (Anderson et al., 2015; Yap & Harrigan, 2015). In order to attain status and influence in a group, individuals must behave in ways that add value to the group (Anderson & Kilduff, 2009b). Specifically, we argue that individuals with stronger leader

role identities will be more motivated to seek out information that is beneficial to their groups' functioning than individuals with weaker leader role identities (Day & Harrison, 2007; DeRue, Nahrgang, Wellman, & Humphrey, 2011; Steffens et al., 2014). Once pertinent task- and goal-oriented information has been acquired, individuals possessing stronger leader role identities should be more inclined to share their insights with their colleagues and be sought out by their colleagues for advice (Chrobot-Mason, Gerbasi, & Cullen-Lester, 2016). Through this process of information sharing, these individuals are afforded more central positions within their networks because they either connect people by *possessing* information others do not, or they *have access* to information because they are more likely to be connected with an individual that possesses information.

Moreover, individuals who see themselves as leaders should be inclined to treat others with sensitivity and consideration (DeRue et al., 2011; Epitropaki & Martin, 2004). A rich breadth of literature suggests that a core set of leadership behaviours represent the extent to which leaders manage the relational aspects of being a leader and that it is through these consideration behaviours (e.g., considering needs of others) that leaders come to be perceived as effective (DeRue et al., 2011). On other hand, individuals who lack behaviours that demonstrate sensitivity are more likely to be perceived as ineffective leaders (Epitropaki & Martin, 2004). By fostering positive relationships with group members, individuals with a stronger leader role identity should develop more friendship ties with their colleagues. In support of this view, developing a wide range of social relationships has been posited to be associated with status attainment (Anderson & Kilduff, 2009b). Therefore, we argue that individuals with a stronger leader role identity will be higher in network centrality as indices of centrality capture the extent to which individuals are engaging in behaviours that will situate themselves in important

positions within their network (Carter et al., 2015), which in turn is associated with leadership (Blau, 1964).

Hypothesis 2a: Leader role identity will drive individuals to broker important job-related information, leading to the attainment of betweenness centrality.

Hypothesis 2b: Leader role identity will facilitate the establishment of friendships, giving way to the attainment of indegree centrality.

Given that network centrality facilitates a variety of positive leadership outcomes (Carter et al., 2015), we hypothesize that attaining centrality within one's group is the primary reason or mechanism behind why individuals who possess stronger leader role identities are more likely to emerge as leaders. Individuals who are higher in betweenness centrality have more control over the flow of information in their social network, which can lead to exceptional influence amongst their peers (Brass, 1984, 1985; Ibarra. 1993), influence over the direction of their organization (Ibarra, 1993), and the ability provide others with information that promote their performance (Venkataramani, Richter, & Clarke, 2014). Individuals who are higher in indegree centrality have broader exposure to information and social support (Fang et al., 2015) and may be more likely to be the target of organizational citizenship behaviours and less likely to be the target of counterproductive work behaviours from others in their network (Scott & Judge, 2009). These factors may allow such individuals to be perceived as influential to group functioning (Brass & Burkhardt, 1993) and emerge as informal leaders within their organization (Koopman, Matta, Scott, & Conlon, 2015; Oh, Labianca, & Chung, 2006).

Hypothesis 3a: Betweenness centrality will mediate the relationship between leader role identity and leader emergence.

Hypothesis 3b: Indegree centrality will mediate the relationship between leader role

identity and leader emergence.

Method

Participants and Procedures

Participants were members of the Royal Canadian Air Cadet Program undergoing a summer training course for leadership development. Of the 88 cadets, 58.2% were male and the average age was 15.22 years ($SD = 0.83$). The cadet program is a governmental not-for-profit program designed to develop in youth the attributes of good citizenship and leadership. Data were collected from four different groups undergoing the same summer training course. Groups ranged in size from 20 to 24 cadets ($M = 22$, $SD = 1.83$). The six-week course was held on a Canadian Forces Base in Western Canada and was an optional course for these cadets.

Prior to the beginning of the summer training, all parents of the cadets were informed about a research participation opportunity for their children. At the beginning of the six-week training course, the cadets were approached by the researcher and provided information about the study. Specifically, they were informed that the researchers were interested in the development of leadership over time and would be collecting data during their training course, but the data collection would not interfere with scheduled training, and participation in the study was completely voluntary. All data were collected using paper-and-pencil surveys. The initial data collection period occurred on the second day[1] of training and included measures of leader role identity, other individual differences variables, and demographic information. The subsequent data collection period occurred at the end of the fifth week of training, which marked the conclusion of the instructional portion of the course, and included assessments of social network variables by peers and trainer ratings.

Measures

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[1] During the first day of training, the cadets received a full day of orientation briefings from the training staff where there was little interaction amongst the cadets. Additionally, cadets were not separated into their groups and did not begin to interact within their groups until the second day of training.

Leader role identity. Leader role identity was measured using the Leadership Self-Identity Measure (Hiller, 2005), which was designed to quantify the extent to which a leader role identity was considered to be descriptive and important to the respondent and has been successfully used in prior research on leader role identity development (Day & Sin, 2011). Cadets rated on a seven-point Likert scale how descriptive (1 = not at all descriptive, 7 = extremely descriptive) each of the following four statements were to how they viewed themselves as leaders: (a) I am a leader, (b) I see myself as a leader, (c) If I had to describe myself to others I would include the word "leader", and (d) I prefer being seen by others as a leader. Cronbach's alpha for this scale was .90.

Network centrality. To collect the two social network variables indicating centrality, we utilized the roster method (Marsden, 1990). Each cadet was presented with a list of the names of all the other cadets in their particular group, and answered two questions that were used to calculate betweenness centrality, representing their brokerage of information within the network, and indegree centrality, representing their popularity within the network. In order to calculate the betweenness centrality variable, cadets were asked to indicate whether they received valuable information from each cadet in their group by responding to the statement: "This person helps me identify opportunities for development that will advance my cadet career" (0 = No, 1= Yes), which represents an important aspect through which group members can help each other flourish (Colbert, Bono, & Purvanova, 2015). In order to calculate the indegree centrality variable, cadets were asked to indicate the nature of their relationship with each cadet in their group by categorically choosing whether they do not know, are acquaintances with, or are friends with a given cadet. The categorical information was then recoded into a binary format such that friendship was coded as 1 and not knowing and acquaintanceship were coded as 0.

This data was then used to calculate a normalized betweenness centrality score and normalized indegree centrality score for each cadet. Betweenness centrality refers to the number of times that a cadet is an intermediary link on the shortest path between two unconnected cadets in a network, and indegree centrality refers to the number of other-reported ties that a cadet has in a network (Freeman, 1979). In order to aggregate the four cadet groups into a single sample, normalized betweeness and indegree centrality scores were calculated for each cadet by dividing the raw centrality scores by the highest centrality score possible in a given network (Borgatti, Everett, & Freeman, 2002), in line with prior research (e.g., Acedo, Barroso, Casanueva, & Galan, 2006; Shah, Dirks, & Chervany, 2006). The normalized centrality scores were calculated using UCINET 6 (Borgatti et al., 2002).

Leader emergence. Based on prior leadership research (e.g., Ensari et al., 2011; Lanaj & Hollenbeck, 2015; Lord & Dinh, 2014), three common operationalizations of leader emergence were used in the current study: ratings of leadership potential, promotability, and influence.

Leadership potential. A single-item measure was used to measure leadership potential. Trainers, who conducted all course instruction for the cadets and interacted with the cadets on a daily basis, rated each cadet on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree): "To what extent do you agree this cadet has leadership potential?" Leadership potential was purposely left undefined because it allows for people to operate on their own personal definitions, which is in line with the theoretical perspective that leadership is often in the eye of the beholder (Lord & Dinh, 2014). The intra-class correlation for the multiple raters was .86, where each group had two to three trainers.

Promotability. A single-item measure was used to assess cadet promotability. Trainers rated each cadet on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree): "To what

extent do you agree this cadet should be recommended for a staff cadet position next year?",

which represents whether the trainer would recommend the cadet for a trainer position. The

intra-class correlation for the multiple raters was .85.

Influence. A single-item measure was used to measure influence. Cadets rated each

member of their group on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree):

"How much influence does this person have in your group?" These ratings were aggregated to

calculate an average other-rated score of influence for each cadet (Anderson & Kilduff, 2009a;

Brass; 1984; 1985). The intra-class correlation for the multiple raters ranged from .89 – .94.

Descriptive statistics and zero-order correlations can be found in Table 1. As expected, betweenness centrality and indegree centrality were significantly correlated ($r = 0.29$, $p < 0.01$), indicating a positive association between distinct conceptualizations of network centrality, which is consistent with previous research (Brass & Burkhardt, 1993). As expected, the correlations between indicators of leader emergence (i.e., leadership potential, promotability, influence) were significant, ranging from .68 to .88.

Hypothesis testing was conducted using (OLS) hierarchical multiple regression in SPSS (see Table 2). In each of the following analyses we controlled for possible effects of the cadet groups by including dummy-coded variables representing the four groups. However, results do not change in any substantive way when the cadet groups are not included as control variables[2]. In support of Hypothesis 1 we found that cadet leader role identity was significantly associated with trainer ratings of leadership potential ($b = 0.09$, $p < 0.01$) and promotability ($b = 0.07$, $p < 0.05$) and peer ratings of influence ($b = 0.05$, p < 0.5). Supporting Hypothesis 2a and 2b, leader role identity significantly predicted the network measures of betweenness centrality ($b = 0.30$, $p < 0.01$) and indegree centrality ($b = 0.71$, $p < 0.05$). We also found a significant effect (see Table 3) of betweenness centrality on ratings of leader potential ($b = 0.05$, $p < 0.05$), promotability ($b = 0.06$, $p = 0.01$), and influence ($b = 0.04$, $p < 0.01$) as well as a significant effect of indegree centrality on ratings of leader potential ($b = 0.02$, $p < 0.01$), promotability ($b = 0.03$, $p < 0.01$), and influence ($b = 0.03$, $p < 0.01$).

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[2] We also re-ran analyses controlling for extraversion and conscientiousness as measured by the 10-item Big-Five Domain scale from the International Personality Item Pool (Goldberg, 1999), as previous research has found that these variables predict network centrality (Fang, Landis, Zhang, Andersen, Shawm & Kiduff, 2015). Because these variables did not influence the outcomes of our hypothesis tests, they were not included in the final reported analyses.

To assess mediation effects, we calculated the indirect effects of leader role identity on each outcome variables through betweenness and indegree centrality simultaneously, determining the confidence intervals for these indirect effects using the bootstrap resampling technique with 1000 iterations (Shrout & Bolger, 2002). These analyses were conducted using the PROCESS macro for SPSS (Hayes, 2014). In support of Hypothesis 3a, via betweenness centrality, leader role identity had significant indirect effects on all three indicators of leader emergence: leadership potential ($b = 0.01$, 95% CI [0.004, 0.03]), promotability ($b = 0.02$, 95% CI [0.006, 0.04]), and influence ($b = 0.01$, 95% CI [0.005, 0.02]). In support of Hypothesis 3b, via indegree centrality, leader role identity also had significant indirect effects on all three indicators of leader emergence: leadership potential ($b = 0.02$, 95% CI [0.004 – 0.04]), promotability ($b = 0.02$, 95% CI [0.006, 0.05]), and influence ($b = 0.02$, 95% CI [0.004, 0.04]). The effect sizes of the indirect effects through betweenness and indegree centrality were not found to be significantly different in magnitude from each other on any of the outcome variables. Taken together, these results indicate that leader role identity predicts informal leadership emergence and these effects are due to both individuals' ability to broker valuable career-related information and form friendships within their social network.

Discussion

Contemporary leadership scholars are beginning to view leadership as a social process between group members. Accordingly, research on identities has been theorized to play an important role in leadership outcomes, given the impact that identities have on the way we perceive and interact with the environment. Existing research that explores leadership through an identity lens has previously adopted a social identity perspective in explaining how group members come to see their leaders as effective (van Knippenberg, 2011). However to date, research has not investigated the possibility that perceiving oneself as a leader can have an impact on the extent to which one behaves in a leader-like fashion, and is thus perceived by others to be a leader. To address this gap, the current study employed a social networks approach to quantify the link between leader role identity and leader emergence as mediated by the extent to which individuals are centrally positioned within their group.

Our main proposition was that when individuals possess a leader role identity (i.e., they see themselves as a leader), they act in ways that are consistent with this identity because doing so provides a sense of coherence. In turn, by acting consistently with their leader role identity, these individuals will come to occupy central positions within their social groups and thus, be perceived or emerge as leaders in the eyes of others. Results from our study indicate that individuals who possessed stronger leader role identities were rated by trainers as having more leadership potential and being more promotable to a supervisory role and were rated by peers as being more influential. Leader role identity also significantly predicted betweenness centrality and indegree centrality whereby individuals who possessed stronger leader role identities more extensively brokered advice between more colleagues and had more friendship ties. As predicted, the associations between leader role identity and the leader emergence outcomes were

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simultaneously mediated by both types of network centrality (i.e., betweenness centrality and indegree centrality).

Theoretical Implications

From a theoretical standpoint, this study contributes to leadership research in several ways. First, we contribute to research on leader role identity, which is a relatively nascent literature and an area of research where substantial theoretical efforts have been applied, but limited empirical research has been conducted. Our study provides critical support for the theoretical claims that leader identity impacts behaviour and relevant leadership outcomes (e.g., Lord & Hall, 2005; Day et al., 2009; DeRue & Ashford, 2010). Additionally, we provide support for our proposed process model whereby leader role identity motivates individuals to seek status by adding value to their group (Anderson & Kilduff, 2009b), which in turn causes others to view them as leader-like. In doing so, we answer calls to study leadership using a social networks approach, in order to account for the fundamental interpersonal aspects of the leadership process (Day et al., 2014).

By integrating leadership and social networks we provide several new insights to research on leader emergence. First, we identify a mechanism (the attainment of central network positions) by which individuals who endorse a leader identity may come to emerge as leaders. This perspective adds nuance to prior leadership research because extant research has focused largely on the direct relationship between personality traits and leadership outcomes, without attending to intermediary social processes (Day et al., 2014). While contemporary leadership theory propounds the notion that leadership is a dynamic process between group members (e.g., Day et al., 2009; DeRue & Ashford, 2010), only a few studies have sought to examine the antecedents and consequences of leadership in collective contexts (Carter et al., 2015). Hence

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our work helps to close this gap in the literature by providing an empirical test of the interrelations between individual traits, relational processes, and leadership outcomes (Carter et al., 2015).

Secondly, contemporary leadership scholars are beginning to conceptualize leadership as a dynamic process between group members, whereby the extent to which an individual emerges as a leader in a group depends on the types of social interactions group members have with each other (e.g., Day et al., 2009; DeRue & Ashford, 2010). By taking a social networks lens to study leadership, we are integrating a methodology that rigorously quantifies relationships between group members (Tasseli et al., 2015) with theoretical advancements in how scholars are conceptualizing leadership. By using this methodology, we build on the limited set of empirical studies that integrate traits associated with leadership, relational processes, and leadership outcomes (Carter et al., 2015), and contribute to an obvious gap in the literature whereby extant leadership research that does not employ social networks approaches do not fully capture the theorized processes of leadership.

Practical Implications

Despite the popularity and investment in leader development programs, transfer of training (Hedges, 2014) and return on investment (Avolio et al., 2009) from these programs are low. Reichard and Johnson (2011) suggest that leader self-development, defined as self-initiated behaviours focused on developing leadership capacities, is one strategy that individuals can use to benefit from leader development programs. Given that individuals who possess a stronger leader role identity will be more motivated to seek out opportunities to develop leadership skills than those with a weaker leader role identity (Day et al., 2009), our current study suggests that

the individuals who have a stronger leader role identity will be more likely to benefit from leader development programs and are more likely to engage in leader self-development.

The current results may shed light on possible mechanisms through which leader development programs function. While American companies report spending almost $14 billion a year on leader development (O'Leonard & Loew, 2012), such efforts cannot be said to be evidence-based due to the paucity of research on leader development. Until recently, leadership scholars have largely focused on a trait perspective of leadership, identifying individual difference predictors of leadership effectiveness and emergence, such as personality traits (e.g., Judge, Bono, Ilies, & Gerhardt, 2002). However, because personality traits can be understood as relatively innate and immutable characteristics, studying leader development (i.e., change) solely in terms of personality traits may not necessarily paint a complete picture (Day et al., 2014). In contrast, changes to and developments of identity are a dynamic and malleable process that can occur throughout the lifespan, and have been proposed as one mechanism through which leader development programs work (Day et al., 2009).

More specifically, these programs may cause changes to leader role identity, which should ultimately impact downstream leadership outcomes. Preliminary evidence from a quasi-experimental gives support to this claim – compared to a control group, students participating in a behaviour-modeling program on transformational leadership experienced more positive changes to their leader identity (Waldman, Galvin & Walumbwa, 2012). This change may occur through the process of internalization (Tice, 1992), where an individual's behaviours (e.g., practicing leadership skills in a leader development program) have a downstream influence on one's identity (e.g., the extent to which they see themselves as a leader). Therefore leader development programs could incorporate feedback and narrative processes (Day et al., 2014),

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with an emphasis of helping program participants visualize themselves as occupying a leader role. As this self-view becomes more developed and important, it should have a positive impact on their behaviour and emergence as leaders.

Strengths, Limitations and Future Directions

The current study has a number of strengths. First, our ability to make strong inferences regarding the causal relationships of the studied variables is bolstered by the temporal ordering of how the data was collected. Specifically, leader role identity was assessed on the second day of training and the social network variables and trainer ratings were assessed five weeks later. In turn, this temporal ordering of the measures increases our confidence in the argument that leader role identity is an antecedent to the attainment of central network positions. Although it could be argued that the social networks were formed early on and prior to the initial survey period (i.e., one day after the groups were formed), research suggests that network compositions are flexible and change over time, especially during early stages of formation (Hite & Hesterly, 2001). Moreover, because the social network variables were collected at the end of the program, network position could not have caused leader role identity because it is unlikely the networks had fully matured by the initial data collection period. Another strength of our study is the use of multi-source ratings for our variables of interest. Given that trainers rated leadership potential and promotability, peers rated influence and the relationships that form the basis of the network centrality variables, and leader role identity was self-rated, the likelihood of common-method bias affecting our results is greatly diminished (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Finally, our use of the social network data and trainer ratings provides more appropriate methods of assessing for social context and leadership outcomes, respectively, in comparison to self-report measures.

The current study also has some limitations. The leader role identity measure could have primed or made salient the cadets' leader working self-concept. However, it is unlikely that such an effect would carry over to impact social network development and trainer and peer ratings because priming effects tend to be short-lived. Another limitation is the modest sample size. However, sample sizes between 51-100 individuals are frequently used in research testing mediation (Fritz & MacKinnon, 2007) and are typical of social network research (see Bowler & Brass, 2006; Venkataramani & Dalal, 2007).

The current research used a youth sample to study leadership. Although this may be viewed by some as a limitation, we believe using this particular sample to investigate our research questions was appropriate. Specifically, the cadets were undergoing a training course, which can be conceptualized as a developmental trigger event (Avolio & Hannah, 2008; Avolio & Walumbwa, 2014; DeRue & Myers, 2014), and such events are argued to be an important source of developing leadership potential. A leader role identity may, in part, be the product of an individual's prior leadership experiences and motivation to lead. Given that this particular youth sample likely has less leadership experience relative to the working adult population, they are most likely to experience changes from their training course (i.e., developmental trigger event). Additionally, because identities are theorized to impact behaviour more powerfully given the situational relevance of the identity (Lord & Brown, 2004; Farmer & Van Dyne, 2010), this particular leadership development context acted as an important cue for the participants' leader role identity. Furthermore, because this study investigates informal leader emergence within groups, this cadet training course provided an appropriate setting – that is, members of a group with equal hierarchical positions who interact with each other consistently over a period of time.

In this paper, we focused on the impact of leader role identity on network centrality and leadership outcomes (i.e., emergence). However, other variables besides leader identity almost certainly also impact both variables. Future research should explore additional variables theoretically implicated in the process of leader emergence, such as leader efficacy, because individuals who are efficacious in their leadership skills are more likely to engage in leadership behaviours and be effective as leaders (Day et al., 2009; Hannah, Avolio, Walumbwa, & Chan, 2012). Current theory has not yet been able to identify whether individuals who see themselves as a leader (i.e., leader role identity) will lead to increased confidence in their leader abilities (i.e., leader efficacy) or if the reverse is true. As such, future research could utilize a cross-lagged design (Kenny, 1975) to provide empirical evidence regarding the temporal sequence of these two important leadership constructs.

Another important area worth pursuing is exploring the reciprocal effects of changing identity and network position (Chrobot-Mason, Gerbasi, & Cullen-Lester, 2016). DeRue and Ashford (2010) proposed a social constructionist model of identity development, such that who emerges as a leader depends not only on one's leader identity, but also on the extent to which the social context continues to reinforce the emerging leader's behaviour. As such, although our current study results suggest that an individual with a stronger leader role identity is more likely to obtain a central network position than an individual with a weaker leader role identity, it could be that over time, this central network position may provide positive feedback to the individual regarding their leadership prowess and, in turn, strengthen their leader role identity. It would also be fruitful to explore whether changes in leader role identity might affect the extent to which individuals occupy more central network positions and thus emerge as leaders (Porath, Gerbasi, & Schorch, 2015).

Finally, another area worth pursuing is integrating role identity and social identity theory in understanding how each of these theories predict leader emergence. According to social identity theory, individuals who emerge as effective leaders do so because they can manage their groups' perceptions that they are the most representative members of the group. However, this theory has not made predictions of how emerging leaders develop the skills and capacities that are required to be effective leaders (Ibarra, Wittman, Petriglieri & Day, 2014). On the other hand, role identity theory argues that those with a strong leader role identity are most likely to practice and develop skills associated with being a leader. Perhaps the extent to which either of these theories can predict leader emergence can be understood over time – that is, although the *initial* emerging leader is the most prototypical member of the group and thus explained by social identity theory, the individual who is most likely to *maintain* influence and support from the group moving forward will be the individual who possesses the most leadership skills and abilities, which can be better explained by role identity theory.

Contemporary leadership scholars are just beginning to recognize the importance of identity processes in impacting leadership-related outcomes. Building on a relatively small body of literature, the current project contributes to our understanding of leader identity and gives confidence to emerging theories of leader identity. Given that individuals can occupy various roles in the workplace, the current research tested whether conceptualizing leader identity as a role would positively impact leader emergence. The results from the current study show that individuals who see themselves as occupying a leader role are more likely to obtain influential positions within their group, and as a result are more likely to emerge as leaders. Given the nascent state of leader identity research, an obvious challenge is the lack of empirical data on the

topic. As such, we encourage more researchers to conduct leader identity research to span the theory-data gap.

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Table 1

Descriptive Statistics and Correlations

Variables	*M*	*SD*	1	2	3	4	5	6
1. Leader identity	4.47	1.38	(.90)					
2. Betweeness	2.68	4.16	.37**					
3. Indegree	54.82	24.93	.33**	.29**				
4. Leadership potential	3.40	1.08	.54**	.42**	.04	(.86)[a]		
5. Promotability	3.25	1.11	.40**	.45**	.02	.88**	(.85)[a]	
6. Influence	2.94	.71	.35**	.46**	.09	.69*	.68**	

Note. Reliability estimates are provided in parentheses.

[a]Intra-class correlation indicating absolute agreement across raters

* *p* < .05 ** *p* < .01 *** *p* < .001

Table 2

Path Analytic Results on the Dependent Variables

Predictors	Leadership potential Step 1		Step 2		Promotability Step 1		Step 2		Influence Step 1		Step 2		Betweenness Step 1		Step 2		Indegree Step 1		Step 2	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Group 1	0.89**	0.31	.62*	0.28	0.71*	0.32	0.5	0.31	0.08	0.21	-0.07	0.2	0.72	0.96	-0.17	1.24	19.64***	4.56	17.55***	4.54
Group 2	-0.11	0.32	0.01	0.28	-0.22	0.33	-0.13	0.32	0.42	0.22	0.49*	0.21	-0.58	1.30	-0.10	1.26	10.93**	4.70	11.83*	4.61
Group 3	-0.01	0.31	0.19	0.08	0.03	0.33	0.18	0.31	-0.18	0.22	-0.07	0.2	0.15	1.34	0.8	1.24	1.35	4.60	2.88	4.54
Leader identity			.09***	0.02			0.07**	0.02			0.05***	0.01			0.30***	0.08			0.71*	0.31
Equation R^2	.15**		0.34		.10*		0.2		.09*		0.22		0.01		0.14		.23***		0.28	
ΔR^2			.19***				.10**				.13***				.13***				.05*	

Note. Beta values are unstandardized regression coefficients

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 3

Path Analytic Results on the Dependent Variables

	Leadership potential						Promotability						Influence					
	Step 1		Step 2		Step 3		Step 1		Step 2		Step 3		Step 1		Step 2		Step 3	
Predictors	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Group 1	0.89**	0.31	0.62*	0.28	0.20	0.27	0.71*	0.32	0.50	0.31	-0.07	0.28	0.08	0.21	-0.07	0.20	-0.58***	0.15
Group 2	-0.11	0.32	0.01	0.28	-0.28	0.26	-0.22	0.33	-0.13	0.32	-0.52	0.27	0.42	0.22	0.49*	0.21	0.14	0.14
Group 3	-0.01	0.31	0.19	0.28	0.08	0.25	0.03	0.33	0.18	0.31	0.03	0.26	-0.18	0.22	-0.07	0.20	-0.18	0.14
Leader identity			0.09***	0.02	0.06***	0.02			0.07**	0.02	0.03	0.02			0.05***	0.01	0.02	0.01
Betweenness					0.05*	0.02					0.06**	0.02					0.04***	0.01
Indegree					0.02***	0.01					0.03***	0.01					0.03***	0.00
Equation R^2	.15**		0.34		0.50		.10*		0.20		0.48		.09*		0.21		0.66	
ΔR^2			.19***		.16***				.10**		.28***				.13***		.45***	

Note. Beta values are unstandardized regression coefficients

* $p < .05$ ** $p < .01$ *** $p < .001$

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