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RESEARCH ARTICLE

Pursuing a future leader self: A multi-study investigation of leader identity and its motivational and behavioural outcomes

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Abstract

Developing as a leader is widely recognized as a challenging endeavour that takes time. However, little research has been done to explain the process through which future representations of oneself as a leader relate to current leader identity and how future and current leader selves motivate action. Integrating possible selves theory with identity-based motivation theory and across three independent studies, we test a serial-mediation model in which a salient future leader self sequentially relates to leader identity, affective motivation to lead, and proactive leadership behaviour. Our Pilot Study ($N = 186$) was conducted at two time points over a year apart with employees from a manufacturing company. Study 1 ($N = 265$) included repeated measurement at three time points, each a month apart, with employees from different industries. Study 2 ($N = 301$) included repeated measurement at four time points, each 2 weeks apart, with employees from different industries. Cross-lagged analyses provided support for our hypothesized process model and allowed us to examine reciprocal relationships. The theoretical implications for leadership and leader identity theory are discussed along with the practical implications for prospective leaders and their development in organizations.

KEYWORDS

future leader self, leader identity, motivation to lead, proactive leadership behaviour

Practitioner points

- Making a future leader self salient provides a pragmatic approach to developing an identity as a leader because the individual has control over cognition about the self as a leader. By being able to envision themselves in future leadership roles, they can take action towards making this vision a reality.
- Envisioning themselves as future leaders enables individuals to construct a leader identity as a consistent part of "who they are" across time. It can make leadership seem as an imminent and relevant future objective when making current choices about where to allocate effort.
- Proactive leadership behaviours represent strategic actions individuals take to manage and progress their leader development journey. Individuals who can envision themselves as future leaders and have built a strong leader identity are more motivated to engage in activities that can help them develop further as leaders and overcome challenges.
- By understanding why some individuals self-initiate action towards leader development, organizations gain insights into how to support those who struggle or are reluctant to step up into leadership roles. By strengthening their future leader self they can help them see leadership as an identity for themselves, become motivated to lead, and ultimately engage in actions that foster their growth as leaders.

INTRODUCTION

What drives someone to become a leader? Beyond skills and experiences, the way individuals view themselves and the extent to which they have internalized leadership as part of who they are, can shape their leadership development journey. Leader identity plays an integral role in leader development theory (Day et al., 2009; Day & Dragoni, 2015). It is seen as the underlying psychological process that guides the emergence of more visible developmental outcomes such as leadership skills and expertise (Day & Sin, 2011; Lord & Hall, 2005; Miscenko et al., 2017). However, a more precise understanding is needed of how this leader identity development process begins and unfolds over time (Day & Sin, 2011). Leader identity does not automatically lead to the enaction of self-regulatory processes and actions that progress towards self-development as a leader. For example, this can happen when the goal of self-development as a leader is not seen as identity relevant. Instead, we argue that future leader self salience can facilitate self-regulatory processes because it makes self-development as a leader identity relevant. Leader development theory also remains unclear about how a leader identity fosters motivation to lead and self-initiated action towards leader development (Oyserman et al., 2015, 2017). A leader identity that does not positively influence affective motivation to lead is unlikely to guide and sustain proactive behaviours towards the leader development process (Badura et al., 2020; Deci & Ryan, 2000; Parker et al., 2010).

This issue is important to address because individuals are highly sensitive to what is possible and important to their future, and even small changes to the way an individual thinks about leadership can have a big impact on the perceived value of an identity and the extent to which the identity has positive implications for self-regulation (Oyserman et al., 2017). A lack of motivation towards enacting proactive leadership behaviours can lead to the individual overlooking or disengaging with the goal of developing as a leader all together over the long term (Oyserman et al., 2017). Our research seeks to understand why some individuals consistently self-initiate action towards leader development. From this, we can gain insights into how an individual who is not currently developing as a leader could begin to become motivated in developing their leadership (Hamaker, 2023). Cognition about the self as a leader can be an influential aspect of how leader identity is formed and it is the aspect that individuals always have the most control over, regardless of the external environment they are currently situated in.

Individuals have multiple goals and options, and unless the goal of developing as a leader becomes identity-relevant, there may still not be the motivation to pursue it with proactive leadership behaviour. Our research seeks to address the lack of understanding about how the leader identity development process begins and unfolds over time by utilizing identity-based motivation theory. Identity-based motivation theory takes a social psychological perspective of when identity motivates action towards long-term goals. It suggests that people's identity and what the identity implies are not fixed, and that "the context in which one thinks influences both what comes to mind and how one makes sense of what comes to mind" (Oyserman et al., 2017, p. 140). Our model is different from previous research because it explains the impact of cognition on behaviour via identity and motivation. Our theorization utilizes possible selves theory (Markus & Nurius, 1986) to explain why a salient future leader self provides a cognitive context that can activate a leader identity in a way that implies affective motivation to lead and subsequent proactive leadership behaviour. We define *future leader self salience* as a cognitive representation of a possible self of who one wants to become as a leader in the future (Markus & Nurius, 1986; Strauss et al., 2012). Our research contributes to the literature on leadership and identity in four ways.

First, we introduce the construct of future leader self salience to explain how individuals can begin to see a leader identity as self-relevant. A salient future leader self strengthens the possibility and self-relevance of becoming a leader by making it seem "near and connected to the current me" (Nurra & Oyserman, 2018, p. 359). Other cognitive antecedents in the literature (e.g., best possible leader self; Jennings et al., 2022) would not likely have the same influence on self-regulation because hopes and aspirations to lead for the future are constructed through considering *both* one's current strengths and skills as a leader as well as aspects that are not yet developed. Future leader self salience opens new possibilities for the development of one's leadership skills and capabilities, helping individuals to self-initiate and self-direct their own leadership path.

Second, our process model offers a new, identity-based explanation of why some individuals are more likely than others to have affective motivation to lead over time. There are many reasons why someone can be motivated to lead, including that it has become part of their wider career plans or from a sense of obligation (Badura et al., 2020; Chan & Drasgow, 2001; Guillén et al., 2015). An identity-based motivation to lead is essential because it is an aspect of the self that individuals can fully influence (e.g., through self-awareness; Newstead et al., 2024). We argue that the lens of a salient future leader self can open up new possibilities of leadership for the future, from which a leader identity becomes interpreted as more self-relevant and meaningful, shifting the focus towards further development, and motivating both a sense of self as a leader in the present, and a desire to act towards leader development in the future. This motivational effect can ensure the proximal indicators of leader development such as leader identity can eventually guide and sustain the more distal outcomes of leader development such as dynamic skills development over time (Day & Dragoni, 2015).

Third, our research expands beyond the study of interpersonal leadership behaviours that are currently considered as outcomes in the leader development literature by introducing the intrapersonal development behaviour of proactive leadership. Such proactive leadership behaviours capture specific actions individuals aim to engage in to develop as leaders and are vital because leader development inevitably involves challenges. For example, leader development requires identifying areas of weakness and acquiring new leadership skills and capabilities (Baltes, 1987; Day et al., 2009; Kark & van Dijk, 2007). Our research explains why some individuals are more likely to engage in self-initiated actions towards leader development. Utilizing the action readiness principle of identity-based motivation theory, we demonstrate that the salient future leader self activates leader identity in a way that interprets leader development as both possible and self-relevant. Thus, individuals begin to enact strategies for action towards that future goal of developing as a leader in the form of proactive leadership behaviours. Overall, our model theorizes how individuals can take self-initiated action towards a possible self as a leader (Barrick et al., 2013; Parker et al., 2006, 2010). Thus, our research accounts for how the relationship between two crucial constructs in the leader development literature, leader identity and leadership behaviour, may differ based on the specific leadership behaviour in question. Our intrapersonal proactive leadership behaviour may be what leads to individuals being able to gain more regular opportunities to

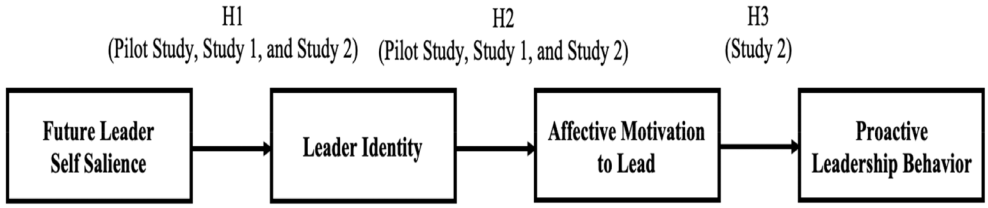

FIGURE 1 The hypothesized conceptual model of serial mediation.

lead followers and to thus be in situations to enact other types of leadership behaviours; including the helping and visioning leadership behaviours towards followers that previous research found to relate to leader identity (Jennings et al., 2022).

Our research investigates the relationships within the model using cross-lagged analysis in three multi-wave studies with varying lengths of time, advancing the understanding of identity-based leadership development processes over time. It is important to find answers to the question why a self-regulatory focus towards leader development can be sustained across longer periods of time. Long-term development means that the individual pursues leadership development consistently, rather than just momentarily. Our research also addresses the critical question of whether the constructs operate in a reciprocal or unidirectional manner over time (Day, 2014; Miscenko et al., 2017). As evidenced by Li et al.s' (2021) longitudinal research, it seems possible that the behaviours which individuals engage in affect self-based constructs such as personality traits or identity. Our research designs allow us to examine such reciprocal relationships.

Figure 1 illustrates our hypothesized model.

THEORY AND HYPOTHESES DEVELOPMENT

The self-concept represents the broader "cognitive structures that organize [identities] and provide a lens with which to interpret statements about the self over time" (Oyserman et al., 2017, p. 139–140). The self-concept is comprised of more than just identities that tell us about who we are now and who we are in comparison with others. The self-concept structure is malleable enough to "extend its reach deeper in time" and include dynamic self-knowledge about who we want to become in the future (Markus & Nurius, 1986, p. 957). This means that within this structure, a future leader self is conceptually distinct from leader identity because it provides self-knowledge about the desired self in the future rather than the self in the present.

Other cognitive antecedents in the literature such as the best possible leader self, that is "a personalized mental representation of who one aspires to be at their best as a leader in the future" (Jennings et al., 2022, p. 70), are different from future leader self salience. The best possible leader self also focuses on hoped-for aspirations for the self as a leader. However, these aspirations are formulated on the basis that the individual already understands their strengths and abilities as a leader. Instead, a salient future leader self allows the individual to envision possibilities that cannot be actualized in the present. The future leader self can be constructed through considering both one's current strengths and skills as a leader as well as aspects of the self in need of further development. Future leader self salience opens the possibility of developing one's leadership skills and capabilities when these have not been fully realized. The future leader self salience is also different from fixed versus growth beliefs about leadership ability because it not only represents the notion that it is generally possible to develop as a leader, but that doing so is personally desirable and meaningful to the self (Savani & Zhou, 2019).

As a consequence of this, a salient future leader self can have a unique impact on leader identity in ways that other cognitive constructs cannot. It has the potential to provide a conscious form of thinking about the self as a leader that the individual has control over in terms of its direction and the method through

which the self as a leader is evaluated (Markus & Nurius, 1986). This offers a context of possibility and meaning to the self. The individual can develop the sense that they are able to change their leader identity through behaviour as opposed to it remaining fixed over time (Nurra & Oyserman, 2018; Oyserman et al., 2017). This utilizes the capacity of the self to have an "I" aspect ("I am thinking about me") that helps reflecting on the more concrete conceptualization of the "me" aspect which represents declared identities (Oyserman et al., 2017, p. 139). This "me" aspect can include past, present, and future self-knowledge.

Identity-based motivation theory explains that "people are motivated to regulate their behavior, to work toward desired and away from undesired future identities, and to act in ways that fit who they are now and who they want to become" (Oyserman et al., 2017, p. 140). Thus, identity-based motivation theory takes a situated approach to understanding how the "me" aspect is comprised. It predicts that individuals construct this aspect of self-knowledge in the context in which it is thought about (Oyserman et al., 2017). The meaning which the individual derives from this will partially influence whether the identity is then deemed important enough to devote self-driven effort and initiative towards leader development (Oyserman et al., 2012).

Future leader self salience and leader identity

Identity-based motivation theory suggests that cognition about the self can potentially act as a motivator for congruent action in the present when it becomes salient (Oyserman et al., 2017). This view aligns with possible selves theory which argues that "possible selves function to provide an evaluative and interpretive context for the now self" (Markus & Nurius, 1986, p. 962). It forms a specific hoped for self in which the individual envisions that leadership will be an important part of their desired future (Markus & Nurius, 1986). This provides the individual with a sense of control (e.g., over the level of ambition and specific leadership roles to pursue; Badura et al., 2020; Markus & Nurius, 1986). Positive possible selves are then more likely to become clear and easy to imagine due to their perceived importance and desirability (Ashforth, 2001; Oyserman & Markus, 1990; Strauss et al., 2012). When a future leader self is salient, the personal meaning and relevance of developing an identity as a leader is seen as a more realistic and important possibility for their future that is accessible and valuable. It is easier to focus on what is needed to progress towards the future self because it is close to the present self (Nurra & Oyserman, 2018) and this connection encourages the individual to feel that identifying as a leader in the present is a useful approach to moving closer towards actualizing their desired future self as a leader.

Hypothesis 1. *A salient future leader self will be positively related to leader identity.*

Leader identity and affective motivation to lead

Motivation to lead reflects an individual's intent and desire to expend effort and one's limited personal resources towards taking on leadership roles and developing further as a leader (Badura et al., 2020). Such an intent is crucial to ensuring the leader development process sustains itself across time because "motivation propels individuals to strive to attain desired outcomes through focusing the direction, intensity, and persistence of their actions" (Badura et al., 2020, p. 333)", representing a willingness to exert effort.

Simply activating a leader identity does not automatically mean that there will be a direct positive influence on motivation to lead in the present. Identifying as a leader does not necessarily mean that one will enact that identity in the current context. Individuals have limited personal resources. They make decisions about how to best allocate their time and effort, for example, goals that are far away seem more uncertain about their feasibility and likelihood of actualizing and less valuable in the present (Nurra & Oyserman, 2018; Trope & Liberman, 2003). Thus, individuals seek to allocate their resources to goals that seem like they are not only relevant to their sense of self across time (both future and current self),

but which also need to be imminently addressed. This guiding principle of prioritizing energy towards addressing what seems near to the current me facilitates changes in motivation. Therefore, a salient future leader self enables participants to construct a leader identity as a consistent part of "who they are". The future self as a leader becomes an imminent and relevant future objective when making current choices about where to allocate effort (Oyserman et al., 2017, p. 140). Therefore, activating one's leader identity is a central mechanism to ensuring that the distal future leader self that is salient generates motivation to lead in the present.

We expect leader identity to influence the affective dimension of Chan and Drasgow's (2001) motivation to lead construct because affective motivation to lead derives from a self-determined purpose and sense of enjoying leadership roles (Anseel et al., 2017; Badura et al., 2020; Chan & Drasgow, 2001; Guillén et al., 2015); even when leader development opportunities may not readily be available (Amabile et al., 1994; Oyserman et al., 2017). Meanwhile, dimensions such as social normative (i.e., leadership as a responsibility and duty to others) and non-calculative motivation to lead (i.e., viewing leadership opportunities positively despite potential costs or limited personal benefits) that are more socially driven when called upon by others in the given social environment (Badura et al., 2020; Deci & Ryan, 2000; Kark & Van Dijk, 2007).

Hypothesis 2. *Leader identity mediates the positive relationship between a salient future leader self and affective motivation to lead.*

Salient future leader self and proactive leadership behaviour

Leader development across time inevitability involves setbacks, delays, negative experiences, and challenges that can often only be overcome through identifying areas of weakness and proactively expanding into new leadership skills and capabilities (Baltes, 1987; Day et al., 2009; Kark & van Dijk, 2007; Strauss & Parker, 2018). When leader development is examined across a longer stretch of time, the process cannot depend entirely on successfully enacting one repeated set of leadership behaviours each day because once a particular leadership situation has been mastered, further development requires the individual to identify and proactively confront and overcome more challenging leadership situations through expanding upon their existing leadership skills and capabilities (Baltes, 1987; Day & Sin, 2011).

Similar to proactive career behaviours developed by Strauss et al. (2012), proactive leadership behaviours comprise self-initiated actions. This proactivity includes identifying and accessing leadership experiences which facilitate leadership skill development (DeRue & Wellman, 2009; Lord & Hall, 2005), planning for further development as a leader, and seeking advice and feedback from more experienced leaders (Parker et al., 2006, 2010; Strauss et al., 2012). They emphasize individual agency in the leader development process which according to leadership development theory (Day et al., 2009; Day & Dragoni, 2015) is much broader than acquiring knowledge, skills, and abilities (KSAs) or accumulating new experiences.

According to Day and Dragoni (2015), leadership development includes a series of development activities, which can be initiated by the individual or the organization, and they influence proximal developmental indicators (including leadership self-efficacy, self-awareness, leader identity, leadership KSAs). Over time, these proximal indicators can eventually lead to more distal outcomes (dynamic skills and abstractions, meaning-making structures and processes). As Liu et al. (2021) also highlighted, leader development activities take place in a dynamic, non-linear, and contextual fashion across different life stages (such as training, mentoring, etc.). Leader development tends to involve experiential learning during the earlier phases of life and then a transition towards a development of a leader self-identity during adulthood through building leader self-awareness and leader self-efficacy. Many of these activities are organization-led (e.g., leadership training programs, mentoring) and offered to individuals based on managerial assessments and high-potential identification processes.

However, such processes are not without biases (Finkelstein et al., 2017) and often disregard individuals from underrepresented groups or individuals who have potential but are reluctant to step up (Epitropaki, 2018). In contrast, proactive leadership behaviours refer to individuals taking the initiative to build their own leadership journey rather than merely responding to externally offered opportunities.

A salient future leader self reflects the hopes and aspirations to lead for the future that are constructed through considering both one's current strengths and skills as a leader as well as aspects of the self in need of further development; opening up consideration of the possibility of improvement and expansion of one's leadership skills and capabilities. This thinking about a future leader self involves identifying the incongruities between one's own current capabilities as a leader and the requirements for succeeding in their hoped-for future as a leader (Strauss et al., 2012), motivating a desire to reduce this discrepancy through proactive behaviours. Yet, this desire to reduce the discrepancy may not by itself seem an immediate priority and as such it may not directly trigger such proactive leadership behaviours. Instead, the future leader self makes a leader identity feel near to the present self. The discrepancy between the current leader self and the future leader self becomes an imminent priority to address, making it a facilitator of the motivation to lead. In turn, this effort is expressed through proactive behaviours that can forward progress towards reducing the discrepancy between the current self and the future leader self (Strauss et al., 2012).

Hypothesis 3. *The positive relationship between a salient future leader self and proactive leadership behaviour is sequentially mediated by leader identity and affective motivation to lead.*

RECIPROCAL EFFECTS AND TIME LAGS WITHIN THE CURRENT RESEARCH

The leader development literature emphasizes the need to address the possibility of reciprocal effects (Day, 2014; Day et al., 2009; Fischer et al., 2017; Shamir, 2011). In the context of our research, there are theoretical grounds for this. First, the relationship in which future leader self salience positively influences leader identity could become reciprocal because as leader identity is strengthened, the future leader self could also become more salient over time as the individual elaborates in more detail of whom, where, and when they will be leading, and how this relates to other aspects of their self in the future (Strauss et al., 2012). Second, it is conceivable for the relationship between leader identity and affective motivation to lead to become mutually reinforcing as increased affective motivation to lead encourages a leader identity to be enacted more frequently, which could strengthen the likelihood of seeing oneself as a leader (Day et al., 2009; Day & Harrison, 2007). An increase in affective motivation to lead could also inspire the individual to become more ambitious and revise their original future leader self that then becomes more salient (Day & Sin, 2011; Ilies & Judge, 2005; Oettingen et al., 2005). Third, it is possible that the relationship between leader identity and proactive leadership behaviour become mutually reinforcing across time as prior research indicates the potential for stable aspects of the self to be influenced by experiences and behaviour (Li et al., 2021), and on a daily timeframe have also shown that other leadership behaviours can predict leader identity (Jennings et al., 2022). Although we do not propose competing hypotheses regarding the direction of effects, our three studies examine reciprocal effects by using a cross-lagged panel design.

There is also uncertainty in the literature surrounding the appropriate time lags needed for theoretically plausible reciprocal relationships to be able to emerge and be tested (Castillo & Trinh, 2018; Mitchell & James, 2001). The varied nature of leadership constructs makes it more difficult for a comprehensive theory to emerge on the issue of time in leader development theory (Fischer et al., 2017). Ultimately, there is not a precise length of time that may be required, and so our decision on whether measurements should be separated by days, weeks, months, or years was made by carefully reviewing previous longitudinal research on leader identity development and by drawing upon theory about the temporal stability of the variables of interest (Singer & Willett, 2003). We also based this on ensuring

the chosen time lags were sufficiently long enough to allow the hypothesized effect to unfold so that meaningful changes can be identified (Li et al., 2021).

Leader development theory still advocates that a wide range of timeframes need to be utilized to fully understand the nature of how the causal effects between key psychological constructs emerge (Day, 2014). In response, we conducted three multi-wave studies with different time lag lengths; 1 year in the Pilot Study and monthly time lags in Study 1, and 2 week time lags in Study 2. Conducting one study with a longer timeframe enabled our research to test for the stability and duration of hypothesized effects (Ployhart & Vandenberg, 2010; Shamir, 2011).

OVERVIEW OF STUDIES

We conducted three cross-lagged studies to test our serial-mediation process model. In the first two studies, we were able to test our first two hypotheses, whereas in the final study we tested all three hypotheses. In the Pilot Study, we collected data ($N = 186$) from employees in the United Kingdom across two timepoints that were over a year apart from one another. In Study 1, we collected data ($N = 265$) via Respondi at three time points with a minimum interval of 1 month between each, enabling our research to provide further insights into the consistency of the directionality of our first two hypothesized relationships (Kuiper & Ryan, 2020). This study had a diverse sample of participants in full-time employment in a range of industries across the United Kingdom, with a balanced split between men (44.2%) and women (55.8%). In Study 2, we collected data from ($N = 301$) from a Prolific sample at four time points with a minimum interval of 2 weeks between each in order to test the direct relationship between future leader self salience and leader identity (Hypothesis 1), leader identity to affective motivation to lead (Hypothesis 2), and the indirect relationship between a salient future leader self and proactive leadership behaviour that is sequentially mediated by leader identity and affective motivation to lead (Hypothesis 3). Ethical approval for all studies was granted by the university's institutional review board. Informed consent was obtained from respondents in all studies.

PILOT STUDY

Pilot study method

Sample and procedure

Employees from a multi-national manufacturing company in the United Kingdom were recruited to participate. Informed consent was obtained from participants. Surveys were administered in paper-and-pen format during the company's annual employee well-being day offsite. From the original sample of 332 participants, we removed participants who failed: two of three outlier checks (Mahalanobis distance, Cook's distance, leverage value; $N = 15$), attention check questions ($N = 29$), and when the standard deviation of their answers were frequently zero on all items of neighbouring scales ($N = 11$). Of the remaining participants who completed both surveys (Time 1 and Time 2), we had a final sample of 186 participants. In this final sample, the mean age was 39 years and 2 months (SD = 15.46), average tenure with the company was 12 years (SD = 10.51). Participants had a range of occupations: dayworkers (23.7%), shift workers (53.2%), executives (4.3%), departmental supervisors (12.9%), departmental managers (3.8%), senior managers (2.2%). In total, 23.1% of all participants were in formal leadership positions and most participants were male (98.4%).

Measures

All measures were self-reported and unless stated otherwise, responses were made on a 7-point Likert scale (1 = *Strongly disagree*, 7 = *Strongly agree*). Measures were repeated for Time 1 (T1) and Time 2 (T2), unless otherwise noted.

Future leader self salience

Future leader self salience was measured using a revised 5-item measure of the Strauss et al. (2012) salience of future work selves scale (T1, $\alpha = .95$; T2, $\alpha = .95$). These items asked the individual to consider how they would see themselves as a leader in the future (e.g., "I am very clear about who and what I want to become as a leader in my future work").

Leader identity

The four core items of Hiller's (2005) scale were used to measure leader identity (1. "I am a leader", 2. "I see myself as a leader", 3. "If I had to describe myself to others, I would include the word 'leader'", 4. "I prefer being seen by others as a leader"), using the stem "Please rate the extent to which the following statements describe you" (T1, $\alpha = .94$; T2, $\alpha = .94$). Responses were made on a 7-point Likert scale (e.g., 1 = *Not at all important*, 7 = *Extremely important*). This gave us a 4-item leader identity scale.

Affective motivation to Lead

The affective motivation to lead subscale from Chan and Drasgow (2001) was used (T1, $\alpha = .81$; T2, $\alpha = .81$). Item 9 ("I am seldom reluctant to be the leader of a group") was excluded due to persistently poor factor loadings across each measurement time point.

Control variables

We allowed Time 1 collective self-concept and leader self-efficacy to correlate with hypothesized variables for theoretical reasons (Becker, 2005). *Collective self-concept* represents the level of affinity and connection to the group which in turn can influence interest in influencing the group as a leader (Lord et al., 2016; Miscenko & Day, 2016). It was measured using a 9-item ($\alpha = .81$) collective self-concept subscale (e.g., "I feel great pride when my team or work group does well, even if I'm not the main reason for its success") of the revised levels of self-concept scale (Hall et al., 2024; Selenta & Lord, 2005). Responses were made on a 7-point Likert scale (1 = *Not at all descriptive*, 7 = *Extremely descriptive*). *Leader self-efficacy* represents confidence to lead others effectively and influences the extent to which the individual is willing to engage with leadership (Guillén et al., 2015; Kwok et al., 2021). We selected the 5 items with the highest factor loadings from the Hardy et al. (2010) scale (e.g., "Adapt to different leadership situations and be successful"; $\alpha = .94$). The scale included the stem "Compared to the most confident leader you know, how would you rate your confidence in your ability to…", and responses were made on a 7-point Likert scale (1 = *Very low*, 7 = *Very high*).

Method of analysis

Our study had two waves of data which meant that the model would be difficult to estimate at item-level correctly even if our sample sizes had been larger. Thus, the item parcelling approach was used so that the hypothesized model could include all constructs as well as key control variables with large numbers of items (Eby et al., 2015; Mathieu & Farr, 1991). Parcels of items were made for each variable in our model except for leader identity based on correlation scores and factor analysis so as not to bias the parameters estimated (Hall et al., 1999; Landis et al., 2000; Little et al., 2013). Leader identity was a construct with only four items and so we kept this as an item-level construct (see Matsunaga, 2008).

TABLE 1 Descriptive statistics and correlations between major study variables at Time 1 and Time 2 (Pilot Study).

Variable	*M*	SD	1	2	3	4	5	6	7	8	9	10
Future leader self salience												
1. Time 1	4.70	1.55	(.97)									
2. Time 2	4.31	1.81	.71**	(.96)								
Leader identity												
3. Time 1	4.17	1.47	.72**	.56**	(.94)							
4. Time 2	3.89	1.72	.67**	.70**	.68**	(.94)						
Affective motivation to lead												
5. Time 1	4.26	1.03	.71**	.56**	.77**	.68**	(.94)					
6. Time 2	4.08	1.07	.62**	.64**	.61**	.83**	.69**	(.95)				
Collective self-concept												
7. Time 1	4.89	.84	.41**	.16**	.33**	.22**	.32**	.24**	(.85)			
8. Time 2	4.76	.90	.46**	.41**	.30**	.46**	.32**	.38**	.55**	(.81)		
Leader self-efficacy												
9. Time 1	5.12	1.05	.64**	.49**	.58**	.46**	.52**	.45**	.42**	.37**	(.93)	
10. Time 2	4.98	1.19	.54**	.66**	.50**	.62**	.46**	.61**	.15*	.33**	.56**	(.94)

Note: $N = 186$. Time 1 correlations are shown above the diagonal and Time 2 correlations are shown below the diagonal. Coefficients in boldface type across diagonal are test–retest correlations. * $p < 0.05$, ** $p < 0.01$.

TABLE 2 Measurement model comparisons (Pilot Study).

Model	χ^2 (N = 186)	df	χ^2/df	$\Delta\chi^2$,[a]	Δdf	CFI	SRMR	RMSEA
Hypothesized model								
Model 1	83.053***	44	1.89			.977	.029	.069
Alternative models								
Model 2	204.535***	48	4.26	121.482***	4	.906	.053	.132
Model 3	255.481***	51	5.01	172.428***	7	.878	.059	.147

Note: Model 1 = hypothesized three-factor model (future leader self salience, leader identity, affective motivation to lead), Model 2 = two-factor model, Model 3 = one-factor model. * $p < 0.05$, ** $p < 0.01$, *** $p < .001$

Abbreviations: CFI, comparative fit index; RMSEA, root-mean-square error of the approximation; SRMR, standardized root-mean-square residual.

[a]All alternative models are compared to the hypothesized model (Model 1).

Pilot study results and discussion

Descriptive statistics and correlations among variables at both timepoints are presented in Table 1.

Measurement model

Confirmatory factor analysis was inclusive of all control variables. The hypothesized measurement model fit the data reasonably well (Hu & Bentler, 1998); $\chi^2(44) = 83.053$, $p < .01$, CFI = .977, RMSEA = .069, SRMR = .029 and was a better comparative fit to other models. Results are shown in Table 2. The hypothesized model had a better chi-square ratio (χ^2/df = 1.89) and absolute measures (RMSEA = .069; SRMR = .029) than other models.

Measurement invariance

We tested measurement and structural models with the Mplus structural equation modelling software (Version 8.2, see Muthén & Muthén, 2018) using a Maximum Likelihood Estimator. All models included: future leader self salience, leader identity, affective motivation to lead, collective self-concept, leader self-efficacy. Configural invariance model results were, $\chi^2(140) = 327.333$, $p < .001$, CFI = .946, SRMR = .039, RMSEA = .085, indicating the way in which items are loading onto latent factors does not differ across time points (Finkel, 1995; Putnick & Bornstein, 2016). Metric invariance results were, $\chi^2(147) = 351.553$, $p < .001$, CFI = .941, SRMR = .050, RMSEA = .086. There was some difference between the two models, $\Delta\chi^2 = 24.22$, Δdf = 7, likely as a result of the long gap in time between measures (1 year). Overall, there was still model consistency over time; providing support for the factor structure consistency.

Cross-lagged models

We tested a range of structural cross-lagged models that examine the direction of cause and effect between variables over time, testing for the possibility of reciprocal effects (Farrell, 1994; Zyphur et al., 2020). Autoregression effects were included (each Time 1 (T1) variable was proposed to directly influence itself at Time 2 (T2)) so that the effects of constant third variables can be ruled out as having a possible causal effect (Lian et al., 2014). We included testing of the relationship between future leader self salience and affective motivation to lead in all the models of this study to check that the theoretically proposed order of hypothesized variables in our model was accurate. We allowed leader self-efficacy and collective self-concept to correlate with all other constructs due to their known influence from

TABLE 3 Nested model comparisons for two-wave cross-lagged model of reciprocal effects among future leader self salience, leader identity, and affective motivation to lead (Pilot Study).

Model	χ^2 (N=186)	df	χ^2/df	$\Delta\chi^2$[a]	Δdf	CFI	RMSEA	SRMR
Model 1	231.237***	140	1.65			.974	.059	.037
Model 2	241.988***	143	1.69	10.751***	3	.971	.061	.039
Model 3	263.487***	147	1.79	32.250***	7	.966	.065	.056
Model 4	256.781***	144	1.78	25.544***	4	.968	.065	.055
Model 5	289.304***	150	1.93	58.067***	10	.960	.071	.061
Model 6	466.227***	153	3.05	234.99***	13	.910	.105	.319

Note: Model 1 = fully cross-lagged model with all reciprocal effects and synchronous correlations included (saturated model); Model 2 = only cross-lagged effects of the original partially mediated causal order (e.g., future leader self salience at Time 1 to leader identity at Time 2 and leader identity at Time 1 to affective motivation to lead at Time 2); Model 3 = only cross-lagged effects of the reverse partially mediated causal order (e.g., leader identity at Time 1 to future leader self salience at Time 2 and affective motivation to lead at Time 1 to leader identity at Time 2; Model 4 = only cross-lagged reciprocal effects (no synchronous correlations); Model 5 = only synchronous effects among each of the three variables at each time point (no cross-lagged effects); Model 6 = null model.

Abbreviations: CFI, comparative fit index; RMSEA, root-mean-square error of the approximation; SRMR, standardized root-mean-square residual.

[a]All alternative models are compared to the saturated model (Model 1).

***$p < .001$.

previous research. First, we tested a full cross-lagged model that acted as a saturated model in which all effects from T1 variables to all T2 variables were tested with the aim of uncovering any reciprocal effects (Model 1).

Second, we tested the hypothesized model which specified time-lagged effects of the hypothesized causal order (i.e., future leader self salience at T1 was expected to predict leader identity at T2, and leader identity at T1 was expected to predict affective motivation to lead at T2). This model included autoregression and synchronous correlations (Model 2). The following nested model was more restricted and tested the specified time-lagged effects of the reverse hypothesized causal order (i.e., leader identity at T1 predicting future leader self salience at T2, and affective motivation to lead at T1 predicting leader identity at T2) and included synchronous correlations and autoregression effects (Model 3). The next nested model was like Model 1 but excluded synchronous correlations and included cross-lagged effects (Model 4). The final nested model included synchronous effects among variables at both T1 and T2 and excluded cross-lagged effects (Model 5). A null model with no specified relationships between variables was tested (Model 6).

Table 3 illustrates how the hypothesized model (Model 2) provided a good fit to the data, $\chi^2(143) = 241.988$, $p < .001$, CFI = .971, RMSEA = .061, SRMR = .039. This model has a comparative fit to other possible models, its chi-square ratio (χ^2/df = 1.69) was nearly identical to that found in the saturated model (Model 1: χ^2/df = 1.65) and better than the reverse-order model (Model 3: χ^2/df = 1.79), and it had a relatively small chi-square difference, $\Delta\chi^2(3) = 10.751$ from the saturated model (Model 1). Model 2 which represented the hypothesized causal order of variables showed a significant positive path from future leader self salience at T1 to leader identity at T2 ($\beta = .442$, SE = .087, $p < .001$, 95% CI [.271, .613]), supporting Hypothesis 1. Results did not show leader identity at T1 predicting affective motivation to lead at T2 ($\beta = -.029$, SE = .163, p = ns, 95% CI [−.349, .291]), and so Hypothesis 2 was not supported. Future leader self salience at T1 also directly predicted affective motivation to lead at T2, although this was close to statistical non-significance ($\beta = .277$, SE = .123, $p < .05$, 95% CI [.036, .518]). This indicates that over long periods of time (over 1 year), a direct relationship between salient future leader self and an individual's overall affective motivation to lead may exist. Confidence in the plausibility of our hypothesized Model 2 over Model 3 predicting the reverse causal order is strengthened by how the hypothesized results in the full cross-lagged model (Model 1) were not reciprocal. In Model 1, future leader self salience at T1 did still predict leader identity at T2 ($\beta = .262$, SE = .108, $p < .05$, 95% CI [.050, .473]) and there was no evidence of a reciprocal effect because leader identity at T1 did not

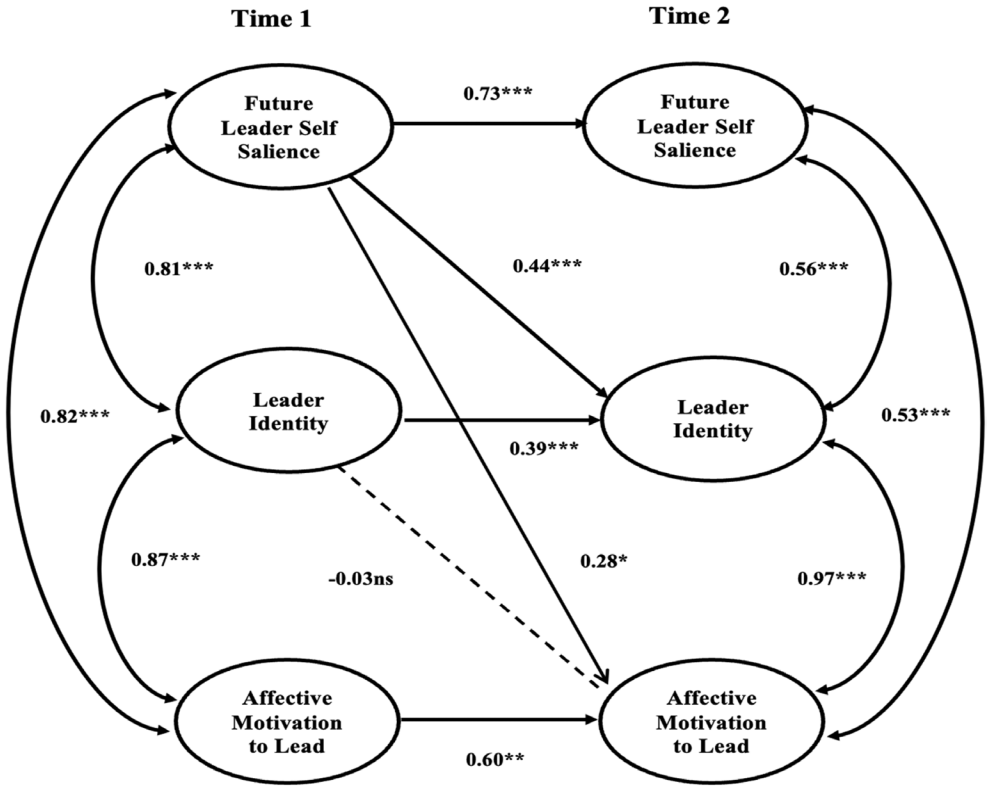

FIGURE 2 Model 2 hypothesized model of the causal direction of future leader self salience, leader identity, affective motivation to lead variables across Time 1 and Time 2 in Pilot Study. Hypothesized paths that are non-significant are shown as dotted lines. For simplicity, the effects of control variables are not presented in the figure. *$p < .05$, **$p < .01$, ***$p < .001$. ns = not statistically significant.

predict future leader self salience at T2 ($\beta = .110$, SE = .148, p = ns, 95% CI [−.179, .400]). Meanwhile, future leader self at T1 did not predict T2 affective motivation to lead ($\beta = .140$, SE = .135, p = ns, 95% CI [−.124, .405]), whilst there was no evidence of a reciprocal effect because T1 affective motivation to lead did not predict T2 future leader self salience ($\beta = .024$, SE = .164, p = ns, 95% CI [−.298, .346]). Furthermore, in our reverse-order model (Model 3), T1 leader identity was not predicting T2 future leader self salience ($\beta = .171$, SE = .142, p = ns, 95% CI [−.107, .448]) and T1 affective motivation to lead was not predicting T2 future leader self salience ($\beta = .094$, SE = .158, p = ns, 95% CI [−.217, .404]).

Figure 2 illustrates that the Pilot Study results provide support for the hypothesized direction of effects in Hypothesis 1, but not for Hypothesis 2 and that we cannot rule out the possibility of reciprocal effects between leader identity and affective motivation to lead.

STUDY 1

Study 1 method

Sample and procedure

Responses in Study 1 were collected from UK full-time employees (35 hr or more) who had more than 1 year of work experience through Respondi at three time points with a minimum interval of 1 month between each ($N = 265$). In total, 47.2% of participants were in formal leadership positions

at their current job. Informed consent was obtained from participants. Participants who failed attention tests at any of the three measurement waves were excluded entirely (Porter et al., 2019): Time 1 ($N = 858$), Time 2 ($N = 509$), and at Time 3 ($N = 265$). The mean age of participants at Time 1 was 44 years, 10 months (SD = 10.25). The average amount of leadership experience at Time 1 was 8 years, 3 months (SD = 9).

Measures

All measures were self-reported and unless stated otherwise, items were measured in the same way as in the Pilot Study. All repeated measures used identical measures across the three time points, apart from control variables (T1 only).

Control variables

Collective self-concept and leader self-efficacy were used for cross-lagged analysis in Study 1 in the same way as in the Pilot Study. In addition, future orientation which reflects individual's innate inclination towards future pursuits was also incorporated into the analysis as a control variable (Parker & Collins, 2010). Future orientation was measured using an abbreviated 6-item version of the consideration of future consequences scale (Joireman et al., 2008; Strathman et al., 1994). The items selected were those that had the highest factor loadings in the Strauss et al. (2012) study (e.g., "Often, I engage in a particular behavior in order to achieve outcomes that may not result for many years"). Responses were made on a 7-point Likert scale (1 = *Extremely uncharacteristic*, 7 = *Extremely characteristic*).

Study 1 results and discussion

Means, standard deviations, reliabilities, and correlations of study variables at each time point are reported in Table 4.

Measurement model

Model 1 represented the measurement model of variables to be included in the analysis. It demonstrated a relatively good fit for the data, $\chi^2(75) = 144.206$, $p < .001$, CFI = .980, RMSEA = .059, SRMR = .037. This model fit was compared to nested models that tested other possible latent factor structures. Table 5 details that Model 1 represents a better absolute fit for the data. Its chi-square ratio ($\chi^2/df = 1.92$) indicates a better fit for the data than other models.

Measurement invariance

We tested measurement and structural models with Mplus (Version 8.2, see Muthén & Muthén, 2018) using a Maximum Likelihood Estimator. Configural invariance model for this cross-lagged analysis fit the data reasonably well, $\chi^2(364) = 893.803$, $p < .001$, CFI = .951, SRMR = .032, RMSEA = .074. Metric invariance results were, $\chi^2(370) = 901.711$, $p < .001$, CFI = .951, SRMR = .034, RMSEA = .074. There was no significant difference between the two models, $\Delta\chi^2 = 7.908$, $\Delta df = 6$, $p = ns$, indicating model consistency over time.

TABLE 4 Descriptive statistics and correlations between major study variables at Time 1, Time 2, and Time 3 (Study 1).

Variable	*M*	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Future leader self salience																				
1. Time 1	4.41	1.75	(.97)																	
2. Time 2	4.50	1.71	.79**	(.96)																
3. Time 3	4.39	1.78	.81**	.82**	(.98)															
Leader identity																				
4. Time 1	4.06	1.77	.86**	.73**	.76**	(.94)														
5. Time 2	4.02	1.75	.76**	.88**	.79**	.79**	(.94)													
6. Time 3	3.93	1.80	.75**	.77**	.84**	.79**	.86**	(.95)												
Affective motivation to lead																				
7. Time 1	4.15	1.49	.83**	.74**	.76**	.84**	.81**	.81**	(.94)											
8. Time 2	4.17	1.56	.73**	.80**	.76**	.74**	.88**	.81**	.87**	(.95)										
9. Time 3	4.04	1.57	.73**	.76**	.80**	.75**	.82**	.88**	.87**	.91**	(.95)									
Leader self-efficacy																				
10. Time 1	4.73	1.26	.69**	.67**	.67**	.68**	.67**	.61**	.68**	.65**	.63**	(.93)								
11. Time 2	4.70	1.28	.60**	.73**	.67**	.63**	.70**	.62**	.63**	.69**	.64**	.77**	(.94)							
12. Time 3	4.69	1.30	.59**	.67**	.67**	.62**	.70**	.70**	.65**	.73**	.73**	.75**	.77**	(.94)						
Collective self																				
13. Time 1			.44**	.42**	.38**	.46**	.40**	.36**	.42**	.34**	.32**	.42**	.31**	.25**	(.86)					
14. Time 2	4.87	.83	.38**	.47**	.40**	.41**	.42**	.36**	.38**	.39**	.33**	.37**	.39**	.24**	.68**	(.81)				
15. Time 3	4.91	.86	.42**	.43**	.44**	.40**	.41**	.38**	.38**	.37**	.35**	.39**	.34**	.30**	.68**	.68*	(.84)			
Future orientation																				
16. Time 1	4.68	1.06	.24**	.11 ns	.16**	.17**	.11 ns	.14*	.19**	.17**	.22**	.21**	.12*	.16**	.08 ns	.14*	.16*	(.80)		
17. Time 2	4.80	1.08	.24**	.20**	.20**	.15*	.18**	.19**	.21**	.24**	.28**	.20**	.16**	.17**	0.6 ns	.12 ns	.16*	.67**	(.84)	
18. Time 3	4.85	1.02	.28**	.20**	.23**	.20**	.18**	.20**	.25**	.22**	.27**	.26**	.22**	.19**	.13*	.13*	.14*	.68**	.74**	(.83)

Note: $N = 265$. Cronbach's alpha ratings (α) are bracketed. * $p < 0.05$, ** $p < .01$.

TABLE 5 Measurement model comparisons (Study 1).

Model	χ^2 (N=265)	df	χ^2/df	$\Delta\chi^{2,a}$	Δdf[a]	CFI	RMSEA	SRMR
Model 1	144.206***	75	1.92			.980	.059	.037
Model 2	391.039***	80	4.89	246.833***	5	.912	.121	.053
Model 3	547.807***	84	6.52	403.601***	9	.869	.144	.056

Note: Model 1 = hypothesized three-factor model (future leader self salience, leader identity, affective motivation to lead); Model 2 = two-factor model; Model 3 = one-factor model.

Abbreviations: CFI, comparative fit index; RMSEA, root-mean-square error of the approximation; SRMR, standardized root-mean-square residual.

[a]All alternative models are compared to the hypothesized model (Model 1).

***p < .001.

TABLE 6 Nested model comparisons for three-wave cross-lagged model of reciprocal effects among future leader self salience, leader identity, and affective motivation to lead (Study 1).

Model	χ^2 (N=265)	df	χ^2/df	$\Delta\chi^{2,a}$	Δdf	CFI	RMSEA	SRMR
Model 1	785.475***	379	2.07			.963	.064	.049
Model 2	890.114***	389	2.29	104.639***	10	.954	.070	.065
Model 3	857.399***	389	2.20	71.924***	10	.957	.067	.057
Model 4	1014.184***	387	2.62	228.709***	8	.942	.078	.063
Model 5	924.632***	393	2.35	139.157***	14	.951	.071	.072
Model 6	2145.559***	399	5.38	570.916***	20	.868	.129	.442

Note: Model 1 = fully cross-lagged model with all reciprocal effects and synchronous correlations included (saturated model); Model 2 = only cross-lagged effects of the original hypothesized causal order (e.g., future leader self salience at Time 1 to leader identity at Time 2 and leader identity at Time 2 to affective motivation to lead at Time 3); Model 3 = only cross-lagged effects of the reverse hypothesized causal order (e.g., leader identity at Time 1 to salient future leader self at Time 2 and affective motivation to lead at Time 2 to Leader Identity at Time 3; Model 4 = only cross-lagged reciprocal effects (no synchronous correlations); Model 5 = only synchronous effects among each of the three variables at each time point (no cross-lagged effects); Model 6 = null model.

Abbreviations: CFI, comparative fit index; RMSEA, root-mean-square error of the approximation; SRMR, standardized root-mean-square residual.

[a]All alternative models are compared to the saturated model (Model 1).

***p < .001.

Cross-lagged models

To examine directionality within our hypothesized model, we investigated the relationships between future leader self salience, leader identity, and affective motivation to lead over the three measurement time points: Time 1 (T1), Time 2 (T2), and Time 3 (T3) via cross-lagged analysis of a full mediation model (Kline, 2016). The five models tested were nested in the same way as in the Pilot Study, ranging from a fully saturated model to more constrained models.[1]

Table 6 indicates that the hypothesized model (Model 2) fits the data well, $\chi^2(389) = 890.114$, $p < .001$, CFI = .954, SRMR = .065, RMSEA = .070. The fit was comparable to other nested models and could not be considered a better fit for the data than the saturated model. Figure 3 (Model 2) shows future leader self salience at T1 predicted leader identity at T2 ($\beta = .412$, SE = .072, $p < .001$, 95% CI [.270, .553]), supporting Hypothesis 1. Hypothesis 2 was supported with leader identity at T2 predicting affective motivation to lead at T3 ($\beta = .176$, SE = .061, $p < .01$, 95% CI [.056, .296]).[2] Cross-lagged analysis supported

[1]In the online supplementary materials of this manuscript, we also present the results of a Study 1 time-lagged analysis of the full theorized model that includes future leader self salience at time 1, leader identity at time 2, affective motivation to lead at time 3 and proactive leadership behaviour at time 3. The results provide initial support for the serial mediation model. Due to space limitations, these analyses are not presented in the main body of the manuscript.

[2]We conducted additional cross-lagged analyses without the control variables for each of our three studies. Results of these analyses are available also in the Appendix S1.

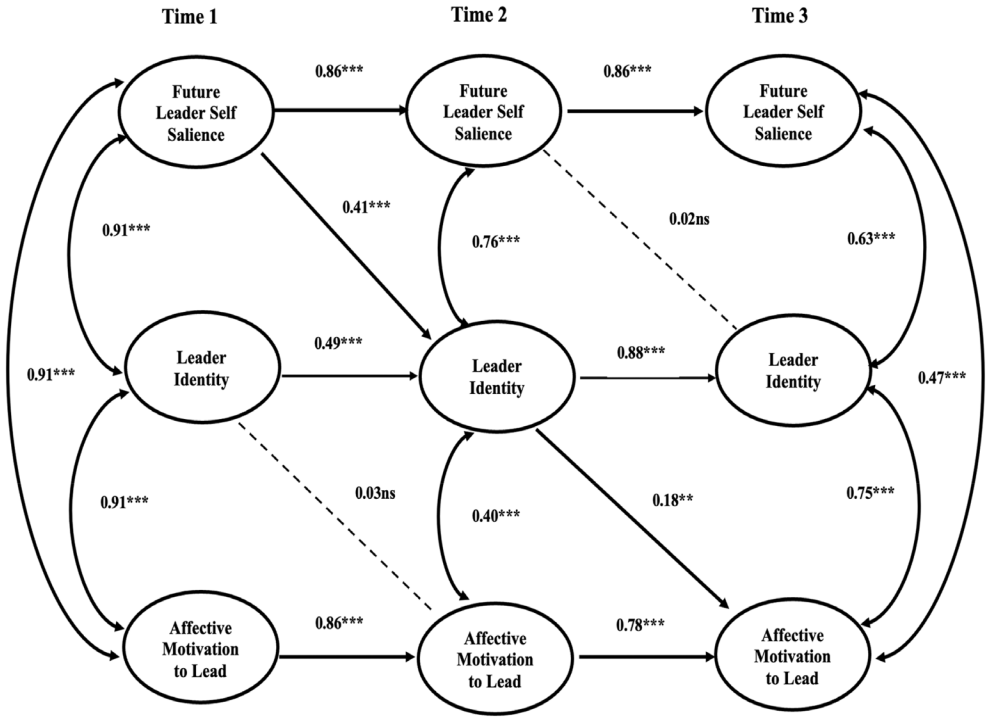

FIGURE 3 Model 2 hypothesized model of the causal direction of future leader self salience, leader identity, affective motivation to lead variables across Time 1, Time 2, and Time 3 in Study 1. Non-significant paths have been graphically presented with a dotted line. For simplicity, the effects of control variables are not presented in the figure. $^{**}p < .01$, $^{***}p < .001$. ns = not statistically significant.

the hypothesized direction of effects between future leader self salience and leader identity as well as between leader identity and affective motivation to lead. In the saturated model (Model 1), we still found future leader self salience at T1 predicted leader identity at T2 ($\beta = .240$, SE = .085, $p < .01$, 95% CI [.074, .405]). Leader identity at T1 did not predict future leader self salience at T2 ($\beta = .187$, SE = .110, $p =$ ns, 95% CI [−.029, .403]). In support of hypothesis 2, leader identity at T2 predicted affective motivation to lead at T3 ($\beta = .149$, SE = .072, $p < .05$, 95% CI [.07, .292]). Meanwhile, T2 affective motivation to lead did not predict T3 leader identity ($\beta = .019$, SE = .088, $p =$ ns, 95% CI [−.153, .191]). In the reverse-order Model 3, we did find that T1 leader identity predicts T2 future leader self salience ($\beta = .398$, SE = .091, $p < .001$, 95% CI [.219, .577]), but additional robust support for our hypothesis 2 was found because T2 affective motivation to lead was not predicting T3 leader identity ($\beta = .110$, SE = .071, $p =$ ns, 95% CI [−.029, .250]).

STUDY 2

Study 2 method

Sample and procedure

Responses in Study 2 were collected from a sample of full-time working participants through Prolific at four time points with a minimum interval of 2 weeks between each timepoint ($N = 301$). Seventeen participants who failed more than two attention tests across the four measurement waves were excluded entirely. The mean age of participants at Time 1 was 40 years, 9 months (SD = 10.76). In total, 61.8% of

participants were in formal leadership positions at their current job. The average amount of leadership experience was 7 years, 2 months (SD = 7.62). 50.5% were male and 49.5% were female.

Measures

All measures were self-reported and unless stated otherwise, items were measured in the same way as in Study 1. All repeated measures used identical measures across the four time points.

Proactive leadership behaviours

Proactive leadership behaviour was measured by revising the wording of the 13-item proactive career behaviour scale used by Strauss et al. (2012; T1, $\alpha = .97$, T2, $\alpha = .97$, T3, $\alpha = .97$, T4, $\alpha = .97$). The only change was that the word "work" was replaced with "leader" in the items. The re-worded scale included items measuring four types of proactive leadership behaviour: proactive leadership skill development, networking in leadership, leader development consultation, and leader development planning (e.g., "I seek advice from my supervisor(s) or colleagues about additional training or experience I need in order to improve myself as a leader"). Responses were made on a 5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree*).

Study 2 results and discussion

Means, standard deviations, reliabilities, and correlations of study variables at each of the four time points are reported in Table 7.

Measurement model

Model 1 represented the measurement model of variables to be included in the analysis. It demonstrated a relatively good fit for the data, $\chi^2(131) = 284.763$, $p < .001$, CFI = .972, RMSEA = .062, SRMR = .029. This model fit was compared to nested models that tested other possible latent factor structures. Table 8 shows that Model 1 represents a better absolute fit for the data. Its chi-square ratio ($\chi^2/df = 2.17$) indicates a better fit for the data than other models.

Measurement invariance

We tested measurement and structural models with Mplus (Version 8.2, see Muthén & Muthén, 2018) using a Maximum Likelihood Estimator. Configural invariance model for this cross-lagged analysis fit the data reasonably well, $\chi^2(1211) = 2529.360$, $p < .001$, CFI = .95, SRMR = .030, RMSEA = .060. Metric invariance results were, $\chi^2(1223) = 2544.67$, $p < .001$, CFI = .950, SRMR = .031, RMSEA = .060. There was no significant difference between the two models, $\Delta\chi^2 = 15.31$, $\Delta df = 12$, $p = ns$, indicating model consistency over time.

Cross-lagged models

To examine directionality within our hypothesized model, we investigated the relationships between future leader self salience, leader identity, affective motivation to lead, and proactive leadership behaviour over the four measurement time points: Time 1 (T1), Time 2 (T2), Time 3 (T3), Time 4 (T4) via cross-lagged analysis of a full serial-mediation model (Kline, 2016). The five models tested were

TABLE 7 Descriptive statistics and correlations between major study variables at Time 1, Time 2, Time 3, and Time 4 (Study 2).

Variable	*M*	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Future leader self salience																		
1. Time 1	4.78	1.56	(.96)															
2. Time 2	4.61	1.63	.87**	(.96)														
3. Time 3	4.62	1.66	.87**	.90**	(.97)													
4. Time 4	4.53	1.70	.85**	.89**	.92**	(.97)												
Leader identity																		
5. Time 1	4.19	1.62	.87**	.82**	.83**	.82**	(.94)											
6. Time 2	4.09	1.63	.80**	.87**	.86**	.85**	.89**	(.95)										
7. Time 3	4.02	1.66	.82**	.85**	.89**	87**	.88**	.92**	(.94)									
8. Time 4	3.98	1.71	.80**	.84**	.86**	.89**	.87**	.92**	.93**	(.95)								
Affective motivation to lead																		
9. Time 1	4.21	1.40	.81**	.81**	.82***	.83**	.86**	.86**	.86**	.86**	(.95)							
10. Time 2	4.08	1.39	.74**	.81**	.81***	.83**	.79**	.87**	.85**	.86**	.89**	(.96)						
11. Time 3	4.10	1.44	.76**	.81**	.85**	.86**	.80**	.86**	.88**	.88**	.90**	.94**	(.96)					
12. Time 4	4.00	1.44	.75**	.79**	.83**	.86**	.79**	.85**	.87**	.89**	.90**	.94**	.95**	(.96)				
Proactive leadership behaviour																		
13. Time 1	3.31	1.01	.81**	.75**	.78**	.78**	.77**	.73**	.75**	.74**	.75**	.69**	.70**	.70**	(.97)			
14. Time 2	3.28	1.00	.74**	.79**	.80**	.80**	.71**	.77**	.77**	.76**	.72**	.74**	.73**	.72**	.87**	(.97)		
15. Time 3	3.26	1.03	.74**	.77**	.82**	.80**	.72**	.73**	.77**	.75**	.73**	.72**	.74**	.73**	.88**	.92**	(.97)	
16. Time 4	3.26	1.03	.74**	.78**	.82**	.84**	.72**	.74**	.77**	.78**	.74**	.74**	.76**	.76**	.87**	.93**	.94**	(.97)

Note: $N = 301$. Cronbach's alpha ratings (α) are bracketed.

**$p < .01$.

TABLE 8 Measurement model comparisons (Study 2).

Model	χ^2 (N = 301)	df	χ^2/df	$\Delta\chi^2$,[a]	Δdf[a]	CFI	SRMR	RMSEA
Hypothesized model								
Model 1	284.763***	131	2.17			.972	.029	.062
Alternative models								
Model 2	474.226***	137	3.46	189.463***	6	.940	.036	.090
Model 3	669.378***	142	4.71	384.615***	11	.905	.038	.111
Model 4	980.320***	146	6.71	695.557***	16	.850	.050	.138

Note: Model 1 = hypothesized four-factor model (future leader self salience, leader identity, affective motivation to lead, leader proactive behaviour); Model 2 = three-factor model; Model 3 = two-factor model; Model 4 = one-factor model.

Abbreviations: CFI, comparative fit index; RMSEA, root-mean-square error of the approximation; SRMR, standardized root-mean-square residual.

[a]All alternative models are compared to the hypothesized model (Model 1).

***p < .001.

TABLE 9 Nested model comparisons for four-wave cross-lagged model of reciprocal effects among future leader self salience, leader identity, affective motivation to lead, and proactive leadership behaviour (Study 2).

Model	χ^2 (N = 301)	df	χ^2/df	$\Delta\chi^2$,[a]	Δdf	CFI	RMSEA	SRMR
Model 1	3137.718***	1336	2.35			.931	.067	.042
Model 2	3388.815***	1353	2.50	251.097***	17	.923	.071	.049
Model 3	3363.045***	1353	2.49	225.327***	17	.924	.070	.049
Model 4	3322.293***	1342	2.48	184.575***	6	.925	.070	.038
Model 5	3308.891***	1362	2.43	171.173***	26	.926	.069	.053
Model 6	7367.586***	1365	5.40	4229.868***	29	.772	.121	.566

Note: Model 1 = fully cross-lagged model with all reciprocal effects and synchronous correlations included (saturated model); Model 2 = only cross-lagged effects of the original hypothesized causal order (e.g., future leader self salience to leader identity, leader identity to affective motivation to lead, affective motivation to lead to proactive leadership behaviour); Model 3 = only cross-lagged effects of the reverse hypothesized causal order (e.g., leader identity to salient future leader self, affective motivation to lead to leader identity, proactive leadership behaviour to affective motivation to lead); Model 4 = only cross-lagged reciprocal effects (no synchronous correlations); Model 5 = only synchronous effects among each of the three variables at each time point (no cross-lagged effects); Model 6 = null model.

Abbreviations: CFI, comparative fit index; RMSEA, root-mean-square error of the approximation; SRMR, standardized root-mean-square residual.

[a]All alternative models are compared to the saturated model (Model 1).

***p < .001.

nested in the same way as in the Pilot Study and Study 1, ranging from a fully saturated model to more constrained models.

Table 9 indicates that the hypothesized model (Model 2) fits the data well, $\chi^2(1353) = 3388.815$, $p < .001$, CFI = .923, SRMR = .049, RMSEA = .071. The fit was also comparable to other nested models, although could not be considered a better fit for the data than the saturated model (Model 1). Figure 4 (Model 2) shows future leader self salience at T2 predicted leader identity at T3 ($\beta = .202$, SE = .063, $p < .01$, 95% CI [.078, .326]). Whilst we expected this relationship to emerge earlier at T1 to T2, these results supported the direction and expected positive relationship expressed in Hypothesis 1. Hypothesis 2 was supported with leader identity at T2 predicting affective motivation to lead at T3 ($\beta = .097$, SE = .047, $p < .05$, 95% CI [.04, .190]). Hypothesis 3 was supported with affective motivation to lead at T3 predicting proactive leadership behaviour at T4 ($\beta = .051$, SE = .025, $p < .05$, 95% CI [.001, .101]). This relationship between affective motivation to lead and proactive leadership behaviour was also found between T1 and T2 ($\beta = .120$, SE = .053, $p < .05$, 95% CI [.016, .223]). Our confidence in the plausibility of our hypothesized model (Model 2) was strengthened by the fact that all of our

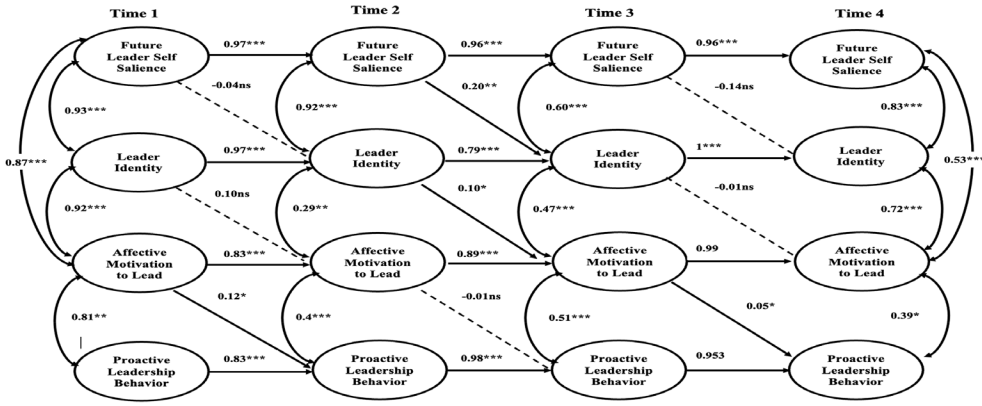

FIGURE 4 Model 2 hypothesized model of the causal direction of future leader self salience, leader identity, affective motivation to lead, and proactive leadership behaviour variables across Time 1, Time 2, Time 3, and Time 4 in Study 2. Non-significant paths have been graphically presented with a dotted line. For simplicity, the effects of control variables are not presented in the figure. *$p < .05$, **$p < .01$, ***$p < .001$. ns = not statistically significant.

hypothesized relationships remained significant in the saturated model except for T2 leader identity to T3 affective motivation to lead (Model 1). At the same time, we also did not find significant results in Model 1 for the reverse-order because T2 affective motivation to lead did not predict T3 leader identity. In Model 1, future leader self salience at T2 still predicted T3 leader identity ($\beta = .152$, SE = .059, $p < .01$, 95% CI [.036, .268]), and T3 affective motivation to lead still predicted T4 proactive leadership behaviour ($\beta = .066$, SE = .026, $p < .01$, 95% CI [.015, .117]). In addition, T1 affective motivation to lead still predicted T2 proactive leadership behaviour ($\beta = .138$, SE = .054, $p < .01$, 95% CI [.031, .245]). T3 future leader self salience predicted T4 leader identity ($\beta = -.186$, SE = .080, $p < .05$, 95% CI [−.344, −.028]). At the same time, some reciprocal effects were found such as T2 leader identity predicted T3 future leader self ($\beta = .260$, SE = .072, $p < .01$, 95% CI [.118, .401]). However, the reverse causal order for proactive leadership behaviour predicting affective motivation to lead was always non-significant across all of the time points, for example, T3 proactive leadership behaviour did not predict T4 affective motivation to lead ($\beta = -.028$, SE = .032, p = ns, 95% CI [−.091, .036]).

In the reverse-order model (Model 3), T2 affective motivation to lead did not predict T3 leader identity ($\beta = -.060$, SE = .064, p = ns, 95% CI [−.065, .184]). Throughout time points, proactive leadership behaviour did not predict affective motivation to lead, such as T3 proactive leadership behaviour did not predict T4 affective motivation to lead ($\beta = -.017$, SE = .018, p = ns, 95% CI [−.053, .018]). Overall, reciprocal effects cannot be ruled out though for the relationship between leader identity and affective motivation to lead, and future leader self and leader identity. In sum, the results of Study 2 generally replicate the results of our previous two studies and further offer strong support for the hypothesized causal relationship between affective motivation to lead and proactive leadership behaviour.

DISCUSSION

Theoretical and practical contributions

Our research aimed to answer the call for more longitudinal research that expands our understanding of how the leader identity development process begins and unfolds over time (e.g., Day & Sin, 2011; Miscenko et al., 2017). Across three multi-wave studies, we find support for the role of future leader self salience on leader identity, affective motivation to lead and proactive leadership behaviours and make several key contributions to leader development theory.

First, our research highlights the important role of future leader self salience on leader identity strength. In all three studies, we found consistent support for the hypothesized direction of future leader self salience positively influencing leader identity. A salient future leadership self strengthens self-relevance of leadership by connecting it to the current self (Nurra & Oyserman, 2018). Our findings highlight that the evaluation of what is possible and meaningful for the future (Jennings et al., 2022; Markus & Nurius, 1986) play an important role in strengthening leader identity. Findings from our cross-lagged analyses in all three studies reinforce that a salient future leader self strengthens leader identity. This relationship is the beginning of a process in which the leader identity becomes a self-regulatory goal, increasing the motivation to lead and subsequent proactive action for leadership development. Understanding key antecedents of proactive behaviours such as a salient future leader self is of high importance as they can help individuals craft their own leadership path, overcome reluctance, and potentially minimize externally induced inequalities (Epitropaki, 2018; Finkelstein et al., 2017). Second, our research provides evidence of leader identity as a pathway to affective motivation to lead. This is crucial because affective motivation sustains interest and persistence in making effort towards developing as a leader over time (Badura et al., 2020; Kark & van Dijk, 2007; Parker et al., 2010). Our research shows that viewing the self in relation to leadership through the lens of a future leader self can open up newly perceived possibilities of leadership for the future, from which a leader identity becomes interpreted as more self-relevant and meaningful to the current and future self. The discrepancy between the current leader self and the future leader self then feels like an imminent priority to address, facilitating a sense of motivation to lead. This motivational effect is essential to ensuring that proximal indicators of leader development such as leader identity can eventually guide and sustain the more distal outcomes of leader development such as dynamic skills development over time (Day & Dragoni, 2015). Without this interpretive mechanism, individuals may tend to view their own potential development as a leader as a distal objective that can be accomplished at a later point in time, which in turn makes such development feel disconnected and irrelevant for decisions in the present moment (Nurra & Oyserman, 2018). Whilst the hypothesized direction between leader identity and affective motivation to lead was not supported in the Pilot Study in which the two time points were a year apart, it was supported in the shorter time frames (i.e., three and four waves, each about 2 weeks apart, respectively) of Study 1 and Study 2. Affective motivation to lead could potentially fade over longer periods of time unless the leader identity that is driving it is being reaffirmed (Badura et al., 2020). Future research could investigate how a future leader self can be kept salient to ensure affective motivation to lead is sustained over longer time periods. This could include participants completing ongoing self-reflection activities (e.g., Lanaj et al., 2023) asking them to imagine themselves in a leadership role in the future. Participants could construct this future leader self by considering both their perceived current strengths and skills as a leader as well as exploring how the future leader self will integrate with their most important personal values and reflecting upon what context the future self as a leader would operate in as well as what they would like to achieve as a leader.

Our research recognizes that the relationship between leader identity and leadership behaviour may differ based on the specific type of leadership behaviour in question. Our research expands the range of behaviours that are currently being considered in the leader development literature by introducing the intrapersonal development behaviour of proactive leadership. This represents a proximal outcome of leader development. We find that individuals will engage in this proactive behaviour when they want to make progress towards that future goal of developing as a leader. The cross-lagged analysis in Study 2 showed a positive relationship between affective motivation to lead and proactive leadership behaviour that was not reciprocal, likely because individuals felt encouraged to enact identity-congruent behaviours that move them closer towards their desired future as a leader. The finding explains how self-initiated actions towards developing as a leader emerge now and are sustained into the future by becoming a relevant priority to one's future and current self as a leader. Future research should examine whether individuals who enact proactive leadership behaviours are more likely to enact other leadership behaviours at the interpersonal level such as servant and visionary leadership (e.g., Jennings et al., 2022) due to heightened awareness of opportunities for further development as leaders. Interactions with

followers are also likely to open new considerations for the individual who is developing as a leader, thus, expanding the breadth and depth of the content of their future leader self over time. Finally, our research has important practical implications for individuals seeking to develop as leaders regardless of which stage of the journey they are at. Engaging with leadership roles is often viewed as a risky endeavour (Zhang et al., 2020), and not all individuals who identify as a leader feel motivated to act towards developing further as a leader (Epitropaki, 2018; Zaar et al., 2020). Leader identity development can often be experienced as unfeasibly challenging, with "no easy and clear path to acquiring the leader identity right away" (Savani & Zhou, 2019, p. 246). This is problematic because constructing an identity as a leader is then only seen as possible or desirable when one already has an adequate opportunity to lead (DeRue et al., 2009), or when the current view of the self is perceived to match a prototype of what a leader *ought* to exemplify (Guillén et al., 2015). Our research demonstrates that a salient future leader self is an important driving force for self-initiated leader development. Having a clear vision of oneself as a future leader helps individuals view any aspiration-attainment gaps as possible to bridge and leadership development as a self-relevant activity. It further motivates them to take action to narrow these gaps over time; ultimately, demonstrating that individuals have the potential to change (Oyserman et al., 2017). When the individual is able to reflect upon previous experiences and engage in more detailed future-based thinking and planning for who they want to become as a leader (Flavell, 1987; Metcalfe & Shimamura, 1994), they can become the focal driver of their own development as a leader over time (Deci & Ryan, 1985; Ellinger, 2004).

Leadership skills become increasingly challenging to develop the more advanced the leadership position becomes (Mumford et al., 2007), which means that the individual needs to be genuinely motivated to gain further experiences in learning how to successfully master them (Day & Dragoni, 2015; Miscenko et al., 2017). Organizations need to first focus on identifying individuals who are self-driven and motivated to lead so that organizational investments made into leader development are wisely appropriated towards those most able to sustain developmental progress as leaders (Athanasopoulou & Dopson, 2018; Liu et al., 2021). They also need to create opportunities for self-reflection and engagement with possible leader selves in the context of leadership training and leadership development programs (Ong et al., 2022).

Limitations and future research

Although our research was conducted with methodological rigour through three multi-wave studies, it still has limitations that should be acknowledged for the improvement of future research in this area. Our independent variable was not experimentally induced and so it is possible that the cross-lagged effect might be due to some unobserved variable that is influencing the constructs within our model (Asendorpf, 2021; Li et al., 2021). Whilst our sample in Pilot Study offered an opportunity to collect field data from an organization setting that was collected in-person and with a longer time lag of 1 year, it also was an almost exclusively male sample that restricted the generalizability of the results, and resulted in our research conducting another two studies with more demographically balanced samples. Yet, Study 1 and Study 2 did not use field data. It would also have been useful to have an objective assessment of proactive behavioural change over time through an independent third party (Podsakoff et al., 2003, 2012). In addition, the perspective of the followers will also be required for future research that seeks to examine leader development at the interpersonal level such as the claiming and granting process of leader identities (DeRue & Ashford, 2010).

The assumption that possible future selves are purely self-constructed is not always accurate because cognition about what is possible and meaningful for the self in the future can also be influenced and constrained by past, present, and future contexts the self is situated in (Dunkel, 2000), and environmental contextual factors (Markus & Nurius, 1986; Meyer, 1985; Stryker, 1984). For example, difficulties with envisioning a future possible self as a leader may be disproportionately felt by those who suffer biases (Finkelstein et al., 2017), and by individuals from underrepresented groups or individuals who have

potential but are reluctant to step up (Epitropaki, 2018). Those individuals in underrepresented groups or with low socio-economic circumstances who then subsequently tend to hold lower self-beliefs in the possibility of accessing higher-status roles in professions and leadership positions (Ashforth et al., 2014; Barling & Weatherhead, 2016), often receive assigned identities by others at work (Dragoni, 2005). Future research could conduct experimental interventions centred around helping individuals to construct and elaborate upon a future leader self that expands positive possibility in leadership in a way that self-identity is viewed as malleable (Waytz et al., 2015).

Future research can also address implications for followers. For example, the leader's focus on self-initiated action and proactivity may trickle down to follower proactive behaviours via social learning (Parker et al., 2010; Parker & Wu, 2014) with important implications for employee voice (Detert & Burris, 2007) and job crafting (Holman et al., 2024; Wang et al., 2016). It is also likely that those who develop their leader identity via the lens of a salient future leader self have a strong self-determination perspective towards adult development processes (Day et al., 2009; Day & Dragoni, 2015). Thus, it is possible that leaders who have engaged in an identity-based leadership development process are likely to serve as mentors for their followers and actively encourage them to embark on a similar leadership development journey (e.g., Lester et al., 2011).

CONCLUSION

In conclusion, our research shows that individuals who can construct future-orientated projections for themselves as a leader are able to strengthen their identity as a leader and their affective motivation to lead over time and more likely to engage into proactive behaviours to further develop as leaders. We hope our research inspires deeper investigations into how to make leadership a stronger possibility for a wider range of individuals in the future.

AUTHOR CONTRIBUTIONS

Richard H. Morgan: Conceptualization; Methodology; Formal analysis; Resources; Writing – review & editing; Writing – original draft; Investigation; Funding acquisition. **Susanne Braun:** Conceptualization; Supervision; Resources; Writing – review & editing; Funding acquisition. **Olga Epitropaki:** Conceptualization; Supervision; Resources; Writing – review & editing; Funding acquisition.

CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are readily available from the corresponding author upon request.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

Appendix S1

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