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"Do you feel like becoming a leader?" Emotions and the likelihood of self-nomination for leadership

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Introduction

> "The former deputy leader said it was 'a bit of a mystery' to her why she failed to put herself forward for the role when Gordon Brown resigned in 2010."
>
> [The Guardian, 2017]

In explaining why, against all expectations, she did not self-nominate for the leadership of the labor party, Harriet Harman, one of the longest-serving members of the British parliament, admitted that "When it came to that moment…" of making the decision she backed off for some reason (excerpt from her interview with Christiane Amanpour, CNN, March 9, 2017). Inspired by the story of Ms. Harman (among others), this study aims at investigating one of the factors associated with the likelihood of self-nomination for leadership: emotions while making this decision. Growing evidence suggests that leadership is no longer the desired career path for all employees, not even the most talented ones: "Talented employees – who are, by all accounts, successful individual contributors – are not willing to step up into managerial positions and claim leadership" (Epitropaki, 2018, p. 89). Aligned with the idea of career anchors (Schein, 1993), some employees in talent pools prefer lateral expansion of their roles and responsibilities, while others prefer non-managerial vertical progression in their own (technical) areas of expertise (e.g., Chudzikowski, 2012). The resulting shrinkage in the talent pool may compel organizations to appoint wrong people for leadership, missing out on the right candidates who may shy away from these positions (cf., Lanaj & Hollenbeck, 2015).

There is increasing recognition that emerging as a leader is a choice, which has been implicitly assumed by the leadership emergence literature. Recently, the agentic perspective in leader emergence has been explicitly discussed by those who opened the black box of self-nomination (e.g., Aycan & Shelia, 2019; Chan & Drasgow, 2001; Epitropaki, 2018). The present study aims at contributing to leader emergence literature, which focuses on who is perceived as leader-like in an informal group setting and overlooks the self-selection mechanisms (Epitropaki, 2018). In this study, we define leader emergence as "…the extent to which an individual is likely to become a leader and whether an individual actually becomes a leader" (Joseph et al., 2015, p. 559) by way of self-nomination or nomination by others.

Recognizing that leadership is a decision with important consequences for organizations (e.g., Aycan & Shelia, 2019; Chan & Drasgow, 2001; DeRue & Ashford, 2010; Lord et al., 2017), we need to know how this decision is made. Consciously or not, a person may choose to become a leader for several reasons such as wanting to gain power and status, feeling obligated to serve others, or feeling the need to bring change to the career trajectory. Epitropaki (2018) reviewed several lines of research to identify the factors leading to self-selection bias in leadership. Factors associated with individuals' attraction to leadership positions included narcissism, gender, socioeconomic background, and genetic makeup, while those associated with reluctance to accept leadership were lack of motivation, leadership skills, developmental readiness, and leader identity salience (Epitropaki, 2018). The question remains as to what happens during the process of deciding whether to step up for leadership when the opportunity presents itself or an offer is materialized, as in the case of Ms. Harman. In the present study, we argue that emotions may be associated with the likelihood of self-nomination for leadership. Research has shown that emotions influence decisions concerning consumer behavior, economic choices, investment behavior, and managerial processes (e.g., Bachkirov, 2015; Charpentier et al., 2016; Penz & Hogg, 2011; Schloesser et al., 2011). However, there is a paucity of research on how emotions play a role in the decision to accept a leadership role when the opportunity presents itself.

There have been a few attempts to investigate emotions in leadership. For example, a special issue of The Leadership Quarterly in 2015 was dedicated to leadership and emotions and included articles on discrete emotions, their influence mechanisms (e.g., emotional contagion, empathy), and emotional regulation strategies (Connelly & Gooty, 2015). However, the question of whether these emotions can influence candidacy for leadership has not been explored. More recently, a new construct, Worries about Leadership (WAL; Aycan & Shelia, 2019) was introduced to examine whether "…worries people have about the possible negative consequences of assuming a leadership role" (p. 21)

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contribute to their decision to undertake leadership. WAL research has opened up an interesting new avenue by introducing the role of emotions in self-nomination for leadership. However, it focuses on one specific emotion (i.e., worry) related to anticipated negative outcomes of leadership in the future (i.e., expected emotions). The present study broadens the scope of this new line of research by investigating how different kinds of (i.e., positive and negative) emotions in the leadership domain can be related with the likelihood of self-nomination.

The present study is grounded in the comprehensive leadership model by Zaccaro et al. (2018), which implies individual agency in the processes that generate leadership outcomes, including emergence and effectiveness. According to the model, (1) genetic factors predispose individuals to develop (2) foundational traits (e.g., physical characteristics, personality, and abilities); enabling the development of more specific (and more malleable) (3) leadership capacities (e.g., required cognitive skills, knowledge, or motivational orientations); leadership capacities lead to (4) functional leadership behaviors which eventually develop into various (5) leadership outcomes. Particularly relevant for the purposes of our research is the role that Zaccaro et al. (2018) afford to individual perceptions and choice in this process. This is the point where our research maps on Zaccaro et al.'s (2018) model and matches the research agenda therefrom. The authors posit that the subjective perceptions of what is needed and what can be done in a given situation (termed leadership demands and affordances in the model) actually mediate the link between leader attributes and functional leader behaviors. In other words, even when individuals possess required leadership capacities, their behaviors in particular leadership situations are based on their choice stemming from their evaluation of specific situational requirements in light of individuals' attributes (e.g., traits, motivation, skills). In the present study, we attempt to empirically test this important proposition that there can be a relationship between a subjective evaluative state of a person and leadership outcomes. It can be theorized that when individuals subjectively evaluate the situation (which presents an opportunity to self-nominate for a leadership role) in terms of its demands and affordances, they may experience emotions, which in turn, may be associated with their self-nomination decision (cf., Lerner et al., 2015).

There are rational as well as emotional inputs while (consciously or unconsciously) evaluating a situation that leads to a decision (Lerner et al., 2015; Schwarz, 2011). We suggest that the likelihood of self-nomination for a leadership position is associated (besides rational factors) with current emotions, namely, the emotions that individuals feel while contemplating whether to self-nominate for leadership. Hence, our primary focus is on the emotions at the time of decision making. However, we are also interested in what shapes current emotions. Therefore, as a secondary aim of this study, we also investigate how current emotions are associated with other emotion-related constructs in the leadership context: (1) prior emotions (emotions that individuals experienced while performing previous leadership roles), (2) worries about leadership (WAL; Aycan & Shelia, 2019) (anticipated worries related to possible negative consequences of assuming a leadership role), and (3) affective-identity dimension of motivation to lead (MTL; Chan & Drasgow, 2001) (how pleasurable individuals consider being in leadership roles).

Emotions are transient experiences of positively or negatively charged mental states and bodily (re)actions in response to personally relevant and important events (Barrett, 2014; Gooty et al., 2010; Mauss & Robinson, 2009). Broadly defined, emotions are multicomponent response systems that comprise cognitive, physiological, and behavioral aspects (Larsen et al., 2008) and can be revealed in multiple ways. Various research has operationalized and measured emotions in different ways, for example, as autonomic nervous system (ANS) reactions (e.g., heart rhythm) or conscious feelings (using self-report scales) (for review of various measures of emotions see e.g., Mauss & Robinson, 2009; Pace-Schott et al., 2019). As Mauss and Robinson (2009) conclude in their review of measures of emotions, "….there is no 'gold standard' measure of emotional responding" (p. 228). For example, ANS measures serve best for capturing dimensional aspects of emotional states like valence (as opposed to indicating specific, discrete emotions like anger or happiness) (Mauss & Robinson, 2009).

Recognizing the embodied nature of emotions, the physiological measures used in our lab study explore implicit (emotional) reactions to leadership tasks, and thus further expand the repertoire of methods in studies of leadership (Christopoulos et al., 2019; Dinh et al., 2014) and organizational phenomena in general (Massaro & Pecchia, 2019). From the practice perspective, this study hopes to shed light on the process through which individuals make a decision to get into the leadership track to be able to design intervention programs that enlarge the pool of candidates for leadership positions. These intervention programs, taking emotional aspects of such a decision into account, could prompt the reluctant individuals, who may otherwise be highly competent, to self-nominate for leadership positions.

The role of current emotions in self-nomination for leadership

How do emotions influence the decision making process? According to Schwarz (2011), individuals while considering various types of information, factor in their feelings (related to the decision) as another piece of information in the judgment and decision making process. As Pham (2004, p. 360) notes, Schwarz (1990) expands the notion of information beyond the conventional understanding of it, assigning feelings potentially equal informational value as to other rational considerations. Subjective experiences such as moods, emotions, metacognitive feelings, and bodily sensations – are all categorized as feelings (Schwarz, 2011). Loewenstein et al. (2001) compare the relative weight of emotions and cognitions in the decision process to conclude that immediate emotions arise as "…fast and crude assessments of behavioral options" (p. 268) and result from emotional evaluation of the situation, independent of and even earlier than cognitive evaluation (Lerner et al., 2015; Loewenstein et al., 2001). The authors further suggest that when cognitive (i.e., rational) and emotional evaluations diverge, intense emotional evaluations will eventually define the outcomes of the decision making process (Loewenstein et al., 2001).

Emotions themselves can be characterized in terms of various dimensions such as valence or arousal. Different schools of thought in emotion research hold different views of the number of dimensions (Barrett, 2006; Feldman Barrett & Russell, 1998; Lerner et al., 2015) and their respective influence on decision making (Lerner & Tiedens, 2006; Schwarz, 2011; So et al., 2015). In this study, we focus on the valence of emotions and how it is associated with the likelihood of self-nomination for leadership. Valence is arguably the most fundamental, most researched, and the least disputed dimension of emotions (Harmon-Jones et al., 2017; Mauss & Robinson, 2009) which can be meaningfully linked to self-nomination for leadership. The valence dimension largely defines whether to approach or avoid the situation that causes the emotion. Sources of negative emotions signal threat and should be avoided, whereas sources of positive emotions signal safety and should be approached (Barrett, 2006, 2014; Barrett et al., 2007; Harmon-Jones et al., 2017). The present research postulates a relationship between the emotions experienced at the time of making the decision to self-nominate for leadership (i.e., current emotions) and the likelihood of self-nomination.

Hypothesis 1. *The valence of current emotions at the time of decision making will have a positive correlation with the likelihood of self-nomination for leadership, in such a way that*: (1*a*) *positive valence will be associated with higher likelihood of self-nomination, and* (1*b*) *negative valence will be associated with lower likelihood of self-nomination.*

What are the correlates of current emotions?

The main focus of the present research is the relationship of current emotions with the likelihood of self-nomination for leadership. However, it is also important to investigate why individuals experience different emotions in a situation requiring a decision to self-nominate for leadership. Acknowledging that there can be a host of factors influencing current emotions (e.g., social climate, task-related contingencies, personality), we purposefully limit our attention to emotion-laden factors in the domain of leadership. We propose that current emotions are associated with (1) emotions experienced during past leadership roles (i.e., prior emotions) (2) positive affect towards becoming a leader in social situations (affective-identity dimension of Motivation to Lead, Chan & Drasgow, 2001), and (3) worries about possible negative consequences of becoming a leader (Worries about Leadership, Aycan & Shelia, 2019).

Prior emotions associated with leadership and current emotions.

In the present research, we assert that (1) emotion is the information used in the decision process, and (2) it is encoded in the body and retrieved when needed. For the first part of this assertion, we draw on the feeling-as-information theory by Schwarz (2011), as explained in the previous section. For the second part, we rely on the somatic marker hypothesis, a neurological theory that describes the neural substrates for the influence of emotions on decision making (Reimann & Bechara, 2010). The central tenet of this theory is that consequences of past decisions can be emotionally encoded by the body and when individuals find themselves in similar decision making situations, the body remembers the past outcomes and experiences the same emotions expressed as various visceral reactions such as electrodermal or cardiovascular responses. These memories of past outcomes that trigger similar emotions in the present are called secondary inducers (as opposed to primary inducers, i.e. original causes of emotions) because they arise from experience, knowledge, and cognitions.

In the context where individuals need to choose whether to self-nominate for leadership, memories of emotions experienced in prior leadership roles may be linked with how individuals feel at the time of deciding for a new role. In terms of the somatic marker hypothesis, memories serve as secondary inducers that trigger similar emotions (Reimann & Bechara, 2010). Considering the above, we expect that the emotions experienced during past leadership roles may be associated with the emotions in situations where a decision needs to be made for a new leadership role.

Hypothesis 2. *The valence of prior emotions in the previous leadership role will positively correlate with the valence of current emotions at the time of self-nomination.*

Liking or worrying about leadership: MTL and WAL.

Emotions are products of moment and predisposition (e.g., Loewenstein & Lerner, 2003). This implies that although emotional reactions are triggered by certain (external or internal) events, how people appraise these events, and what emotions they experience in response are determined by certain qualities of individuals. According to Lazarus (1991), emotional reactions result as an outcome of a two-stage appraisal process (see also, Moors et al., 2013). The primary appraisal concerns the evaluation of how relevant and congruent an event or situation is with an individual's goals and motivation. The secondary appraisal evaluates the coping ability of an individual to handle the emotion-triggering situation (see also, Tse et al., 2018). As a result of these appraisals, negative or positive emotions may be experienced. We assert that affective-identity MTL and WAL may be associated with the (valence of) current emotions.

MTL was introduced in 2001 by Chan and Drasgow as a construct explicitly built on the premise that becoming a leader is a decision of an individual, wherein motivation is a major defining factor for behavior. It was conceptualized to have three dimensions reflecting affective (affective-identity MTL), normative (socio-normative MTL), and pragmatic (non-calculative MTL) aspects of motivation. In this study, we limit our focus to affective-identity MTL because it taps the affective aspect and reveals how much individuals enjoy being in leadership roles. Aligned with Lazarus's (1991) two-step appraisal process, we believe that affective-identity MTL influences to what extent individuals evaluate the decision to self-nominate for a leadership role as relevant and congruent with their goals and self-views and match their capacity and resources. Individual differences in this appraisal process may lead to different emotional reactions. In other words, when contemplating an offer to become a leader, individuals with high affective-identity MTL are expected to experience more positive emotions.

Hypothesis 3. *Affective-identity MTL will be associated with the valence of current emotions at the time of self-nomination so that higher levels of affective-identity MTL will be positively associated with positive emotions and negatively associated with negative emotions.*

WAL is a newly proposed construct on the intersection of leadership and emotions. WAL, in a way similar to a feeling described as dread in risky choice situations (Slovic et al., 2004), denotes the level of unpleasant emotion, in this case worry that individuals anticipate experiencing if their choice produces negative consequences. Specifically, WAL reveals how much the possibility of certain unpleasant consequences associated with performing a leadership role may cause worries in an individual (Aycan & Shelia, 2019). WAL's construct domain reflects the needs pursuant to Deci and Ryan's (1985) self-determination theory of motivation. Worries about failure (i.e., not being able to succeed as a leader) resonate with the need for competence; worries about work-life balance (i.e., not being able to attend to other aspects of personal life) taps into the need for autonomy; and lastly, worries about harm (i.e., causing damage to others) reflects the need for relatedness. Although its temporal stability is not yet empirically tested, WAL is conceptualized as an individual difference variable.

In terms of Zaccaro et al.'s (2018) model , just like MTL, WAL can be categorized as a leadership capacity – attribute that is more mutable than foundational traits like neuroticism but is, nevertheless, stable enough to allow characterization of and differentiation among individuals. WAL is a new construct and no research is available to show how it relates to other emotions or affect in general but findings from clinical research suggest that experiencing excessive worries is associated with anxiety during decision making (Gana et al., 2001). Aligned with Lazarus's (1991) appraisal theory, WAL may also influence how an individual evaluates (appraises) the decision to self-nominate for leadership in terms of required and available personal resources. Being worrisome may signal lack of psychological resources required to deal with a leadership role and thus cause negative emotions at the moment of decision making.

Hypothesis 4. *WAL will be associated with the valence of current emotions at the time of self-nomination so that higher levels of WAL will be positively correlated with negative emotions and negatively correlated with positive emotions.*

The constructs of prior emotions, affective-identity MTL and WAL pertain to the domain of emotions but the nature of prior emotions is different from that of affective-identity MTL and WAL. Prior emotions are momentary affective responses to leadership situations, whereas MTL and WAL represent individual difference variables (i.e., leadership capacities; Zaccharo et al., 2018). Considering this, it would be plausible to think that these two individual difference variables could moderate the relationship between prior and current emotions in our research. Affective-identity MTL can strengthen the association of positive emotions in prior leadership experiences with

positive emotions during self-nomination for leadership. Likewise, WAL can strengthen the relationship between negative emotions in prior leadership experiences and negative emotions during self-nomination for leadership. We, therefore, propose two sub-hypotheses regarding the role of affective-identity MTL and WAL.

Hypothesis 5a. *The association between prior positive emotions in previous leadership roles and current positive emotions at the time of self-nomination for leadership will be stronger for individuals with higher, compared to lower levels of affective-identity MTL.*

Hypothesis 5b. *The association between prior negative emotions in previous leadership roles and current negative emotions at the time of self-nomination for leadership will be stronger for individuals with higher, compared to lower levels of WAL.*

Method

Participants

Participants were 80 students in a mid-size University (41 female and 39 male). The sample was a mix of undergraduate (59 participants) and graduate (21 participants) students. The mean age of the sample was 21.18 years (SD = 3.06). Part of the students was recruited through the university subject pool. These students were offered course credits in exchange for participation. Others, who were not eligible for course credit, were recruited through the university daily news electronic bulletin, and offered compensation of 2.5 USD. The latter group comprised about 29 % of all the participants.[1]

The announcement contained information regarding eligibility and technical details of participation. Regarding the purpose of the research, it stated that "…emotions and associated physiological reactions to leadership situations will be examined.". All students above 18 years of age were eligible unless they had the following health conditions: Cardiac, psychiatric, neurological, and respiratory problems or were taking antidepressant medications. Based on the literature, these factors could significantly influence the physiological signal to be recorded in the lab (Laborde et al., 2017). The announcement specifically informed the students that, as part of the study procedure, non-invasive wireless physiological data recording equipment would be mounted on their bodies.

Procedure

Data collection was carried out in two stages: An online survey and a lab study. All study measures will be described in detail in the *Measures* section. One or two weeks prior to coming to the lab, participants filled out the on-line surveys for MTL (Chan & Drasgow, 2001), CSE (Judge et al., 2003), and past leadership experiences (Ensari et al., 2011). For the lab study, participants were asked to refrain from certain activities (e.g., smoking, physical exercising) and eating or drinking certain substances (e.g., caffeinated drinks) that could significantly alter their physiological responses to be recorded during the study (Laborde et al., 2017).

Preparation for the lab study. A health check form was administered before starting the experiment. Participants were asked to wash their hands with water only and dry them gently (patting) with a paper towel. Upon returning to the lab, the experimenter led the participants into the room where the main study activity was carried out and attached Biopac Nomadix© wireless physiological signal recording equipment (Biopac Systems, Inc. CA) to their bodies. These were small, wireless devices consisting of electrodes (attached to the skin), leads, and transducers to capture and transfer respective physiological signals (i.e., heart-beat and electrical conductivity of the skin to a recording computer). A respiration belt was also put around the chest of the participants to capture the respiration signal.

To record skin's electrical conductivity signal, Biopac EL507 Ag–AgCl electrodes (Biopac Systems, Inc. CA) were attached to the palmar side of the medial phalanges of the index and the ring fingers on a non-dominant hand. Applying a constant voltage of 0.5 V, the data was recorded at 1000 Hz in standard units of microSiemens (μS). For heart activity electrocardiogram (ECG) was recorded. Ag–AgCl electrodes (Biopac Systems, Inc. CA) were attached in Lead II configuration, under the shoulder edge of the right clavicle and the lower left rib cage. ECG was recorded at a sampling rate of 1000 Hz. Wireless technology enabled the transfer and recording of these signals, which were continuously recorded using BioNomadix© devices and the MP150 data acquisition system (Biopac Systems, Inc. CA). While attaching the equipment to their bodies, the experimenter explained the purpose of the equipment to the participants and responded to related questions.

The participants were asked to sit in front of the stimulus presentation computer. Their non-dominant hand (used for the EDA recording) rested comfortably on a specially provided side table. Participants were explicitly asked to try to minimally move during the study (as gross body movements could affect the physiological signal quality) but not at the expense of being tense.

The stimulus presentation. The physiological data were recorded during the administration of scales and tasks for four study variables: WAL, prior emotions, current emotions, and likelihood of self-nomination for leadership. All data were collected via an automated computerized stimulus presentation system which was coded in Python programming language. Physiological baseline data were also collected while participants watched a relaxing underwater scenery video with fish (Bachkirov, 2015). Fig. 1 depicts the sequence of stimuli during the experiment and the type of data collected for each activity.

We hypothesized that the emotions experienced at the time of deciding whether to self-nominate for leadership (i.e., current emotions) would correlate with emotions experienced in previous leadership roles (i.e., prior emotions). To test this relationship using physiological indices of emotions, we incorporated two different leadership tasks that allowed for measuring emotions at two times. In the first instance, emotions were measured in response to being in a leadership role, and in the second instance, emotions were captured at the time of self-nomination for a new leadership role. The first task required that participants imagined themselves being promoted to a cafe manager position and going into their first staff meeting to deliver a speech to an imaginary group of employees about the business strategy to overcome the challenges facing the business. The participants first listened and then read the instructions as well as the leadership role description. Then, they performed the leadership task, which was to deliver a speech in the first staff meeting. The participants' speeches were recorded on a camera. Physiological indices of emotions experienced in response to this first leadership task were taken to indicate "prior emotions".

The second leadership task was designed to measure the likelihood of self-nomination to become the chairperson of a (hypothetical) committee formed to implement necessary changes in the teaching and research climate of the university. Emotions measured during this process were taken to indicate "current emotions".

Closing and data processing. Once the stimulus presentation was over, participants were notified of it on the computer screen and the experimenter entered the room. After saving the data, the experimenter removed the physiological recording equipment from the participants' bodies and invited them to an adjacent room in the lab. Participants responded to a short manipulation check questionnaire

[1] We dummy-coded the groups and tested their effect on main study variables by including them in our main regression equations, with and without control variables. No significant effects were found.

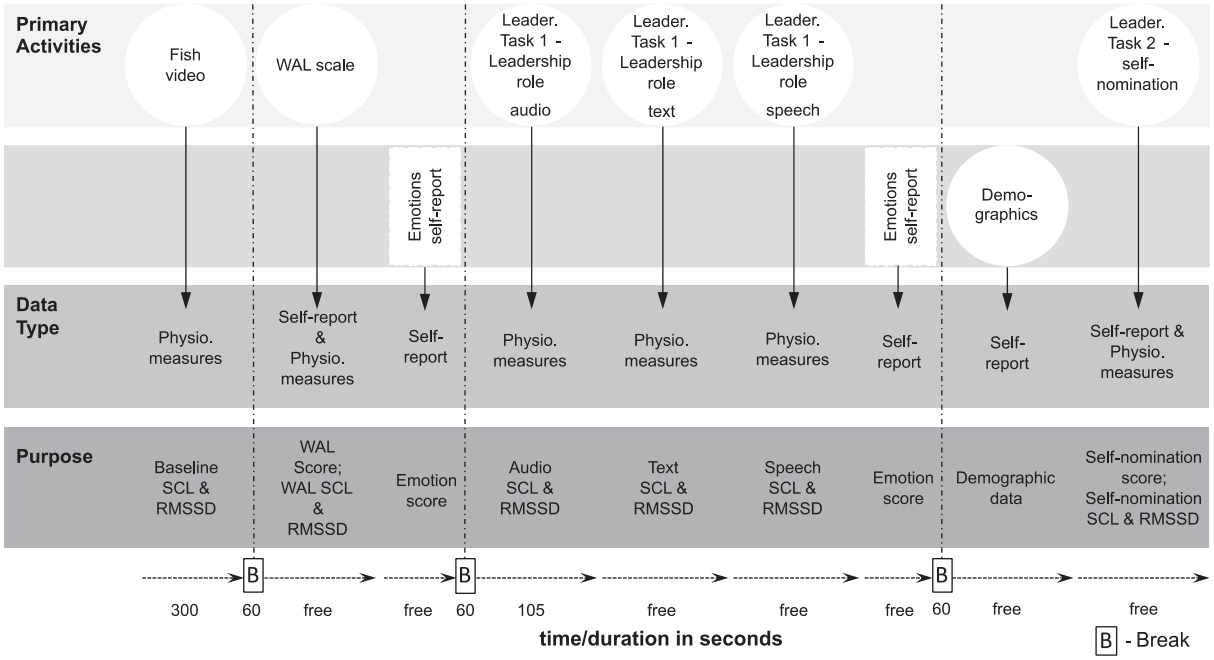


Fig. 1. Lab study presentation of stimuli: activities, sequences, duration, type and purposes of the data collected.

asking the experienced realism of the situation and leadership tasks, after which the experimenter debriefed, thanked them for participation, and released them.

All the self-report responses of the participants in the lab were recorded on a stimulus presentation computer in a form of a data (.dat) file and physiological responses were recorded as AcqKnowledge 4.4 software (Biopac Systems, Inc.) graph files with ".acq" extension. The physiological signals were continuously recorded throughout the process. Raw data files were obtained from three channels: EDA, ECG, and Respiration using wireless BioNomadix© devices and respective modules of the MP150 data acquisition system (Biopac Systems, Inc. CA). The stimulus presentation and physiological recording were synchronized through the AcqKnowledge 4.4 software (Biopac Systems, Inc.) to put timestamps at the beginning and the end of each activity shown in Fig. 1. This allowed us to, later in the analysis phase, process and analyze the physiological data for each activity individually (e.g., baseline, nomination, and leadership task) and derive physiological indices of prior and current emotions.

The recording for every participant was stored as an original, raw file with a specially created unique (anonymous) identification code. To extract data from these graphical expressions, raw files were first visually inspected for quality and further processed using specially developed scripts using AcqKnowledge 5.0 software (Biopac Systems, Inc. CA) coding language. The extracted data were integrated into the final research data set.

Measures

Likelihood of self-nomination for leadership. As explained above, participants were presented with a leadership task, a hypothetical situation in which a leader was needed for a committee (i.e., a task force) to improve specific conditions for university students. Participants were asked if it was likely that they would nominate themselves as a candidate for this leadership position: "The committee needs a chairperson, someone who will lead the work process and be in charge of delivering results. Would you nominate yourself as a candidate for this position?" Responses were recorded using a five-point Likert scale ranging from 0 (*not likely*) to 4 (*very likely*). The higher scores indicated higher likelihood of self-nomination.

Worries about Leadership (WAL). We used the 16-item WAL scale (Aycan & Shelia, 2019). Because WAL is an anticipated emotion while making a decision (i.e., accepting a leadership role), it is captured through a hypothetical prompt used in the anticipated emotion research (e.g., *how would you feel when the decision for alternative X leads to consequence Y?)* (cf., Schloesser et al., 2011, p. 13). Participants were instructed to imagine they were being offered a leadership position in one of the main student clubs in their university. They were asked to indicate the extent to which the possibility of each of the WAL item would worry them if they accepted the leadership position. A sample item is "To what extent would you be worried about being exposed to more criticism in your leadership role?". The Likert scale for responses ranged from 1 (*to a very little extent*) to 5 (*to a very large extent*). Higher scores indicated higher worry. Cronbach's alpha reliability estimate for this sample was good ($\alpha = .85$).

Affective-Identity Motivation to Lead (MTL). We used the affective-Identity MTL subscale consisting of 9 items (Chan & Drasgow, 2001). A sample item is "I am the type of person who likes to be in charge of others." Responses were given on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicated higher motivation. The Cronbach's alpha reliability estimate was acceptable ($\alpha = .72$).

Control Variables. To partially mitigate the problem of endogeneity in our study, we included several control variables (Antonakis et al., 2014). First, we measured core self-evaluations of our participants (CSE; Chang et al., 2012). We reasoned that since emotional reactions of individuals to different tasks (including self-nomination for leadership) could also be influenced by their general beliefs in their abilities (Bandura, 1977) and their emotional makeup (Watson et al., 1988), CSE (Chang et al., 2012) could be used as a parsimonious way of controlling for such effects. CSE, as a higher-order construct, encompasses four general dispositions such as self-esteem, generalized self-efficacy, emotional stability, and locus of control (Chang et al., 2012). The scale consisted of twelve items and responses were given on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is "I am capable of coping with most of my problems." Higher

scores indicated higher core self-evaluations. The Cronbach's alpha reliability estimate for this sample was acceptable (α = .78).

Second, we collected and included in our analysis the data about our participants' gender (Ayman & Korabik, 2010) and their past leadership experiences (Ensari et al., 2011). For the latter, we asked our participants to estimate, how often, in the past, they had occupied leadership positions in groups, school, associations, institutions, etc. (e.g., team captain, project team leader, president of the club, etc.) (adapted from Bobbio & Manganelli, 2009). The participants provided their answers on a 5-point Likert scale, ranging from 0 (*never*) to 4 (*very often*). We used this variable (i.e., past leadership experience) initially to check for the sampling bias to make sure that participants with varying degrees of past leadership experience were represented in the sample. We also used it as a control variable (Ensari et al., 2011). Lastly, as mentioned above, we also controlled for a number of health conditions and asked participants not to eat or drink specific substances before coming to the lab in order not to contaminate the findings.

Physiological indices to capture prior and current emotions. To capture implicit emotions evoked by the self-nomination task, we used ANS measures. During leadership task performances, we measured physiological reactions of electrodermal activity (EDA) (Dawson et al., 2007) and heart rate variability (HRV) (Berntson et al., 2007). As an index of EDA, we used skin conductance level (SCL) to assess arousal associated with negative emotions such as anxiety in response to leadership task performance. SCL is measured in units of micro siemens (mS) (Boucsein et al., 2012). SCL may change due to changing sweating levels (e.g., on the palms of our hands) caused by physiological arousal associated with stress and emotions (Boucsein, 2012; Leiner et al., 2012). In the present research, higher levels of electrodermal activity (i.e., increased SCL were taken to index more negatively valenced emotions (Kreibig, 2010). Prior and current emotions were operationalized as mean SCL scores during leadership role performance and self-nomination tasks (leadership task 1 and leadership task 2 on Fig. 1). These variables are further denoted as SCL_{prior} (during leadership task 1), and $SCL_{current}$ (during leadership task 2).

HRV indicates variation in the heart's beat-to-beat intervals (Laborde et al., 2017). Resting HRV (i.e. measured when a person is neither physically nor mentally active) has been found to correlate with successful psychological coping (Thayer et al., 2012), regulated emotional responding (Appelhans & Luecken, 2006; Beauchaine, 2001; Segerstrom & Nes, 2007), adaptability and resilience (Shaffer & Ginsberg, 2017); and positive emotions (Fredrickson & Joiner, 2018). A review by Castaldo et al. (2015) suggested that HRV decreases during stress. With the experience of negative emotions such as fear, anxiety, or anger, HRV decreases, while it increases with feelings of amusement and joy (Kreibig, 2010; Stephens, Christie, & Friedman, 2010) and successful emotional regulation (Thayer et al., 2012). As a measure HRV of our participants, we used the index of *root mean square of differences between successive inter-beat intervals* (RMSSD) (Berntson et al., 2007). RMSSD is measured in milliseconds (ms) (Massaro & Pecchia, 2019) and is used as an index of the parasympathetic nervous system's influence on cardiac functioning (Laborde et al., 2017; Xhyheri et al., 2012). Increased HRV in the present research (i.e., RMSSD) was considered to index positive (valence) emotions. Prior and current emotions were operationalized as mean RMSSD scores during leadership role performance and self-nomination tasks (leadership task 1 and leadership task 2 on Fig. 1). These variables are further denoted as $RMSSD_{prior}$ (during leadership task 1), and $RMSSD_{current}$ (during leadership task 2).

Considering that physiological responding patterns can vary significantly among individuals, to assess changes in their physiology, baseline measurements are required. To measure the baseline levels of both SCL and RMSSD of our participants, the last 60 s of the 5-minute relaxing period was used (Antelmi et al., 2004; Shaffer & Ginsberg, 2017). Length of signal recording during the two leadership tasks (see Fig. 1) varied among participants due to the time it took them to respond to task requirements. Statistics for duration measured in seconds were as follows: Role performance (leadership task 1) (M = 100.23 s, SD = 46.87) and self-nomination (leadership task 2) (M = 23.96 s, SD = 10.85) (for more on recording length for HRV analysis see e.g., Nussinovitch et al., 2011; Shaffer & Ginsberg, 2017). While analyzing the data, we added baseline measurements as covariates in the regression equations to control for the effect of individual differences in baseline physiological patterns of our participants. Baseline (covariate) measurements are indicated as $RMSSD_{base}$ and SCL_{base}.

Following the methodological recommendations in the literature, respiration signal was also recorded using respiration belt transducer (Biopac Systems, Inc. CA) to control for the possible effect of respiration rate on HRV (Massaro & Pecchia, 2019; Laborde et al., 2017; Xhyheri et al., 2012).

All statistical analyses were conducted using IBM SPSS statistics software version 26.

Results

Controlling for respiration frequency

In order to make sure that changes in RMSSD levels of our participants during leadership role performance and self-nomination tasks (i.e., $RMSSD_{prior}$ and $RMSSD_{current}$) were not due to changes in their breathing patterns but due to their emotional states, as recommended by Laborde et al. (2017), we checked respiration frequency of our participants in both leadership role and self-nomination task conditions. Laborde et al. (2017) suggest that only when the respiration frequency (i.e., number of breaths per minute) remains within the range of 9 to 24 cycles per minute, we can positively conclude that changes in RMSSD are not due to alterations in respiration rate. We looked at central tendency and dispersion statistics and except for few outliers, the respiration rate of the participants remained in the range of 9 to 24 cycles per minute, in both conditions. This allowed us to infer that changes in the RMSSD levels of our participants in both conditions were not due to respiration frequency change but their emotional states. There were 4 and 5 outliers during leadership task 1 and leadership task 2, respectively. The mean respiration frequencies for these participants lay in the range of 25.5 and 28.8 cycles per minute.[2]

Hypotheses testing

The descriptive statistics and inter-correlations of the main study variables are provided in Table 1.

Hypothesis 1 suggests that the valence of current emotions at the time of self-nomination will be positively correlated with the likelihood of self-nomination for leadership. Positive valence will be associated with higher likelihood of self-nomination (1*a*), whereas negative valence will be associated with lower likelihood of self-nomination (1*b*). *I*n terms of operationalization of current emotions as $RMSSD_{current}$ and $SCL_{current}$, this means that $RMSSD_{current}$ will be positively and $SCL_{current}$ will be negatively correlated with the likelihood of self-nomination. Hypothesis 1*a* was supported by the results using linear regression analysis. Controlling for CSE, past leadership experience and gender, the analysis showed that the coefficient for $RMSSD_{current}$ was significant, B = .02, SE(B) = .006, β = .42, p = .018, 95 % CI (B) [.003, .026] (see, Table 2). No significant relationship was found between the likelihood of self-nomination and $SCL_{current}$, thus providing no support for Hypothesis 1*b* (see, Table 2).

We tested *Hypotheses 2, 3 and 4* with one multiple linear regression analysis for each operationalization of emotions separately (i.e., using

[2] We ran all the analyses excluding these outliers and all our results reported in this paper remained significant (see, Results section).

Table 1
Inter-correlations among study variables.[1]

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1.	*Gender*[a]	–									
2.	*Age*	−.26*	–								
3.	Core self-evaluations	.11	.06	–							
4.	Leadership experience	−.05	.06	.06	–						
5.	Self-nomination for leadership	−.05	.06	.04	.52***	–					
6.	Affective-identity MTL (MTL_{aff})[b]	.08	−.03	.32**	.61***	.56***	–				
7.	WAL[c]	−.36**	.08	−.39**	.03	−.06	−.26*	–			
8.	$RMSSD_{base}$[d]	.00	−.13	−.13	−.12	−.05	−.02	−.12	–		
9.	$RMSSD_{prior}$[e]	.15	−.18	−.04	.02	.08	.10	.02	.57***	–	
10.	$RMSSD_{current}$[f]	−.06	−.14	−.17	−.11	.11	−.01	−.07	.77***	.68***	–
11.	SCL_{base}[g]	.46***	−.19	.09	−.11	−.11	−.09	−.25*	.11	.15	.10
12.	SCL_{prior}[h]	.34***	−.19	.08	−.29*	−.13	−.23^t	−.19	.12	.06	.10
13.	$SCL_{current}$[i]	.41***	−.18	.16	−.16	−.08	−.11	−.23^t	.10	.09	.02
14.	$RMSSD_{prio}$ × WAL	.03	−.12	−.22^t	.06	.08	−.01	.37**	.49***	.91***	.60***
15.	$RMSSD_{prior}$ × MTL_{aff}	.19	−.25*	.11	.12	.23^t	.40***	−.15	.48***	.93***	.60***
16.	$RMSSD_{prior}$ × MTL_{aff} × WAL	.07	−.24^t	−.06	.13	.22^t	.29*	.22^t	.46***	.89***	.54***
17.	MTL_{aff} × WAL	−.24*	−.06	−.07	.50***	.41***	.58***	.62***	−.21^t	.02	−.14
18.	SCL_{prior} × MTL_{aff}	.37***	−.26^t	.15	−.01	.13	.15	−.24^t	.17	.12	.13
19.	SCL_{prior} × WAL	.28*	−.18	−.01	−.31*	−.16	−.30*	.06	.09	.10	.11
20.	SCL_{prior} × MTL_{aff} × WAL	.30*	−.26^t	.09	−.05	.09	.08	.05	.13	.16	.15
		11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
11.	SCL_{base}[g]	–									
12.	SCL_{prior}[h]	.82***	–								
13.	$SCL_{current}$[i]	.84***	.95***	–							
14.	$RMSSD_{prior}$ × WAL	.01	−.01	−.02	–						
15.	$RMSSD_{prior}$ × MTL_{aff}	.11	−.01	.04	.79***	–					
16.	$RMSSD_{prior}$ × MTL_{aff} × WAL	−.03	−.08	−.06	.93***	.91***	–				
17.	MTL_{aff} × WAL	−.25^t	−.31*	−.24^t	.24^t	.19	.415***	–			
18.	SCL_{prior} × MTL_{aff}	.75***	.91***	.89***	.01	.17	.06	−.06	–		
19.	SCL_{prior} × WAL	.81***	.96***	.89***	.10	.00	.01	−.15	.83***	–	
20.	SCL_{prior} × MTL_{aff} × WAL	.75***	.88***	.84***	.13	.18	.15	.11	.94***	.91***	–

Notes.
Statistical significance levels: ^{t} p <.10, * p <.05, ** p <.01, *** p <.001.
[1] Complete table with descriptive statistics and inter-correlations including exploratory variables is provided in the online supplementary material.
[a] Gender is dummy coded such that 0 = female and 1 = male.
[b] Affective-identity motivation to lead.
[c] Worries about leadership.
[d] RMSSD (heart-rate-variability) index of baseline.
[e] RMSSD (heart-rate-variability) index of prior emotions (i.e., during leadership task 1).
[f] RMSSD (heart-rate-variability) index of current emotions (i.e., during leadership task 2).
[g] SCL (skin conductance) index of baseline.
[h] SCL (skin conductance) index of prior emotions (i.e., during leadership task 1).
[i] SCL (skin conductance) index of current emotions (i.e., during leadership task 2).

RMSSD and SCL indices). Considering that we investigated three independent correlates of current emotions (in each case), we applied Bonferroni adjustment for significance levels set at p <.017 (instead of conventional p <.05) (see, Table 3).

Hypothesis 2 asserts that the valence of current emotions at the time of self-nomination will positively correlate with the valence of prior emotions in previous leadership roles. This would require a positive association between $RMSSD_{prior}$ and $RMSSD_{current}$, and between SCL_{prior} and $SCL_{current}$. The results confirmed the hypothesis. The regression coefficient for $RMSSD_{prior}$ was significant, B = .56, SE (B) = .123, β = .41, p <.001, 95 % CI (B) [.312, .806]. For SCL index of emotions, the following results were found: the regression coefficient for SCL_{prior} was significant, B = .63, SE(B) = .066, β = .77, p <.001, 95 %CI (B) [.499, .764] (see, Table 3).

According to **Hypothesis 3** the valence of current emotions at the time of self-nomination will be associated with affective-identity MTL: affective-identity MTL will be positively correlated with positive emotions and negatively correlated with negative emotions. With our operationalization of current emotions, this would require affective-identity MTL score to be positively correlated with $RMSSD_{current}$ and negatively correlated with $SCL_{current}$. The data did not provide support for this hypothesis as neither of the coefficients was significant. **Hypothesis 4**, which predicts that the valence of current emotions at the time of self-nomination will be associated with WAL (so that WAL will be negatively correlated with positive emotions and positively correlated with negative emotions) was not supported by the analysis results either (see, Table 3).

Hypothesis 5a predicts that affective-identity MTL will moderate the relationship of prior positive emotions with current positive emotions at the time of self-nomination, so that this association will be stronger for individuals with higher affective-identity MTL compared to those with lower affective-identity MTL. To test this hypothesis, we ran a linear regression analysis using the RMSSD index of positive prior and current emotions. With $RMSSD_{current}$ as a dependent variable and $RMSSD_{prior}$ and affective-identity MTL as two main independent variables, we added their interaction term ($RMSSD_{prior}$ × MTL_{aff}) to the model, in order to test moderation. We also included WAL as a control variable along with baseline value of RMSSD, past leadership experience, CSE and gender. We applied Bonferroni adjustment for hypothesis testing with two main variables, thus significance level was set at p <.025 (instead of p <.05). The analysis did not produce any significant results (see, Table 4).

Hypothesis 5b predicts that WAL will moderate the relationship between prior negative emotions with current negative emotions at the time of self-nomination, so that this association will be stronger for individuals with higher WAL compared to individuals with lower

Table 2
Linear regression analysis of the Hypothesis 1*a* and 1*b*.

	DV: Likelihood of self-nomination for leadership					
					95 % CI	
	B	SE (B)	β	*p*	lower bound	upper bound
H1*a* – relationship between current positive emotions, operationalized as $RMSSD_{current}$ and the likelihood of self-nomination for leadership						
Constant	.72	.771		.356	−.825	2.259
Gender	−.07	.189	−.04	.717	−.447	.309
CSE[a]	.11	.197	.06	.594	−.288	.500
Leadership experience	.50***	.111	.49***	.000	.275	.721
$RMSSD_{base}$[b]	−.01	.008	−.25	.149	−.026	.004
$RMSSD_{current}$[c]	.02*	.006	.42*	.018	.003	.026
H1*b* – relationship between current negative emotions, operationalized as $SCL_{current}$ and the likelihood of self-nomination for leadership.						
Constant	.70	.870		.425	−1.046	2.446
Gender	−.04	.243	−.02	.863	−.531	.446
CSE	.17	.251	.08	.511	−.337	.669
Leadership experience	.47**	.130	.45**	.001	.207	.730
SCL_{base}[d]	−.05	.073	−.17	.457	−.200	.091
$SCL_{current}$[e]	.04	.058	.14	.541	−.080	.151

Notes.
Statistical significance levels: ^{t} p < .10, * p < .05, ** p < .01, *** p < .001.
[a] Core self-evaluations.
[b] RMSSD (heart-rate-variability) index of baseline.
[c] RMSSD (heart-rate-variability) index of current emotions (i.e., during leadership task 2).
[d] SCL (skin conductance) index of baseline.
[e] SCL (skin conductance) index of current emotions (i.e., during leadership task 2).

Table 3
Multiple linear regression analysis of the Hypotheses 2, 3, and 4.

	DV: $RMSSD_{current}$[a]					
					95 % CI	
	B	SE (B)	β	*p*	lower bound	upper bound
H2, H3 and H4 using RMSSD index – relationship between current positive emotions (operationalized as $RMSSD_{current}$) and prior positive emotions (operationalized as $RMSSD_{prior}$) (H2); Affective-identity MTL (H3); Worries about leadership (H4).						
Constant	20.54	25.576		.425	−30.681	71.750
Gender	−4.44	3.906	−.09	.260	−12.263	3.381
CSE[b]	−4.98	4.266	−.10	.248	−13.519	3.565
Leadership experience	−2.33	2.792	−.08	.407	−7.925	3.256
$RMSSD_{base}$[c]	.64**	.123	.50**	<.001	.397	.888
$RMSSD_{prior}$[d]	.56**	.123	.41**	<.001	.312	.806
MTL_{Aff}[e]	.74	3.505	.02	.834	−6.282	7.753
WAL[f]	−1.56	3.942	−.04	.694	−9.454	6.334
	DV: $SCL_{current}$[g]					
					95 % CI	
	B	SE (B)	β	*p*	lower bound	upper bound
H2, H3 and H4 using SCL index – relationship between current negative emotions (operationalized as $SCL_{current}$) and prior negative emotions (operationalized as SCL_{prior})(H2); Affective-identity MTL (H3); Worries about leadership (H4).						
Constant	−1.98	2.140		.361	−6.283	2.331
Gender	.35	.363	.05	.339	−.380	1.082
CSE	.36	.400	.04	.379	−.450	1.160
Leadership experience	.30	.241	.07	.217	−.184	.786
SCL_{base}[h]	.25^{t}	.104	.20^{t}	.019	.043	.462
SCL_{prior}[i]	.63**	.066	.77**	<.001	.499	.764
MTL_{Aff}	−.04	.313	−.01	.897	−.671	.590
WAL	−.06	.337	−.01	.860	−.737	.618

Notes.
Statistical significance levels after applying Bonferroni corrections: ^{t} p < .033, *p < .017, **p < .003.
[a] RMSSD (heart-rate-variability) index of current emotions (i.e., during leadership task 2).
[b] Core self-evaluations.
[c] RMSSD (heart-rate-variability) index of baseline.
[d] RMSSD (heart-rate-variability) index of prior emotions (i.e., during leadership task 1).
[e] Affective-identity motivation to lead.
[f] Worries about leadership.
[g] SCL (skin conductance) index of current emotions (i.e., during leadership task 2).
[h] SCL (skin conductance) index of baseline.
[i] SCL (skin conductance) index of prior emotions (i.e., during leadership task 1).

Table 4
Linear regression analysis of the Hypothesis 5*a*.

	DV: $RMSSD_{current}$ [a]					
					95 % CI	
	B	SE (B)	β	*p*	lower bound	upper bound
H5*a* – relationship between the interactive term of Affective-identity MTL and prior positive emotions (operationalized as $RMSSD_{prior}$) with current positive emotions (operationalized as $RMSSD_{current}$).						
Constant	15.19	33.636		.653	−52.189	82.572
$RMSSD_{base}$ [b]	.64**	.124	.50**	<.001	.393	.889
Leadership experience	−2.44	2.847	−.09	.395	−8.141	3.264
CSE[c]	−4.67	4.481	−.09	.302	−13.643	4.311
Gender	−4.35	3.955	−.09	.276	−12.275	3.572
WAL[d]	−1.53	3.978	−.04	.703	−9.493	6.443
MTL_{aff} [e]	1.94	6.011	.06	.748	−10.103	13.981
$RMSSD_{prior}$ [f]	.70	.571	.51	.227	−.446	1.840
$RMSSD_{prior} \times MTL_{aff}$	−.04	.149	−.11	.805	−.336	.262

Notes.
Statistical significance levels after applying Bonferroni corrections: ^{t} p <.05, * p <.025, ** p <.005.
[a] RMSSD (heart-rate-variability) index of current emotions (i.e., during leadership task 2).
[b] RMSSD (heart-rate-variability) index of baseline.
[c] Core self-evaluations.
[d] Worries about leadership.
[e] Affective-identity motivation to lead.
[f] RMSSD (heart-rate-variability) index of prior emotions (i.e., during leadership task 1).

WAL. To test this hypothesis, we ran a linear regression analysis using the SCL index of negative prior and current emotions. With $SCL_{current}$ as a dependent variable and SCL_{prior} and WAL as main independent variables, we added their interaction term ($SCL_{prior} \times$ WAL) to the model to test moderation. We also included affective-identity MTL as a control variable along with baseline value of SCL, past leadership experience, CSE and gender. We applied Bonferroni adjustment for hypothesis testing with two main variables, thus significance level was set at p <.025 (instead of p <.05). The analysis revealed that the interaction term of $SCL_{prior} \times$ WAL was significant, but in the opposite direction than hypothesized (B = −.20, SE(B) = .074, β = −.73, p =.011, 95 % CI (B) [−.345, −.047]) (see, Table 5).

Variance inflation factors for SCL_{prior} and the interaction term of $SCL_{prior} \times$ WAL were very high (Cohen et al., 2003); VIF statistics equaled 44.3 and 43.0, respectively, suggesting the possibility of multicollinearity. To alleviate this effect we mean-centered the predictor variables, created WAL_{cent} and $SCL_{prior_cent,}$ and calculated their interaction term using the mean-centered values (Hayes, 2022; Francoeur, 2013; Iacobucci et al., 2017). We then regressed the $SCL_{current}$ on $WAL_{cent.}$, SCL_{prior_cent} and their interaction term (controlling for gender and mean-centered values of affective-identity MTL, past leadership experience, the baseline SCL and CSE). The analysis revealed that the interaction term of $SCL_{prior_cent} \times WAL_{cent}$ was significant (B = −.20, SE(B) = .074, β = −.11, p =.011, 95 % CI (B) [−.345, −.047]) (see, Table 6). VIF statistics were at acceptable levels.

Based on the results of the latter analysis, we calculated the simple slopes, using the mean values of the control variables and gender variable set at zero (Hayes, 2022). Specifically, we regressed SCL_{prior_cent} on $SCL_{current}$ a) at the mean value of centered WAL b) at one standard deviation above the mean of centered WAL, and c) at one standard deviation below the mean of centered WAL (Aiken & West, 1991). An overlay plot (Fig. 2) shows the three simple slopes and illustrates the direction of the moderating effect of WAL on the association between prior emotions (i.e., SCL_{prior_cent}) and current emotions (i.e., $SCL_{current}$). The moderating effect of WAL on prior emotions is more pronounced (i.e., slope is steeper) for low WAL. In other words, as WAL increases the strength of association between SCL_{prior_cent} and $SCL_{current}$ decreases.

Exploratory findings

In addition to physiological measures used for evaluating our main variables, for exploratory purposes, we asked our participants to also self-report emotions indicating how they felt, after completion of the WAL scale and the leadership task 1 – leadership role performance (see Fig. 1). Self-reporting emotions were intended for exploratory analysis to compare self-reported feelings with physiological indices of emotions during task performance (Boucsein, 2012; Kreibig, 2010; Levenson, 2014; Mauss & Robinson, 2009). We wanted to see whether physiological and self-report measures would converge. After each task, a list of emotion words was shown on the screen. To evaluate their emotional state, participants could select their answers on a scale ranging from 0 (not at all) to 4 (to a large extent) (e.g., Etzel et al., 2006). The regression coefficient of self-reported anxiety on $RMSSD_{prior}$, controlling for the baseline was marginally significant (B = −2.71, SE(B) = 1.456, β = −.18, p =.067) – greater change in RMSSD was associated with lower reporting of anxiousness while being in the leadership role in leadership task 1. No other significant correlations were found. Not finding much correlation between self-reported and physiological measures is not an unexpected result. According to the comprehensive review by Mauss and Robinson (2009) “Correlations among multiple measures of emotion are moderate at best, small in typical studies, and inconsistent across studies.” (p. 227). The complete table of descriptive statistics and intercorrelations of all (including exploratory) study variables is provided in the online supplementary material.

Discussion

The primary purpose of this study was to investigate the role of emotions in the decision of individuals to become a leader, more precisely the likelihood of self-nomination for leadership. The decision whether to self-nominate for a leadership role can, arguably, be influenced by a multitude of rational considerations (e.g., availability of time and resources). In this study, we wanted to investigate whether emotions are also part of the decision process. Our primary interest was the emotions that individuals felt at the time of contemplating

Table 5
Linear regression analysis of the Hypothesis 5*b*.

	DV: $SCL_{current}$[a]					
					95 % CI	
	B	SE (B)	β	*p*	lower bound	upper bound
H5*b* – relationship between the interactive term of WAL and prior negative emotions (operationalized as SCL_{prior}) with current negative emotions (operationalized as $SCL_{current}$).						
Constant	−6.67	2.684		.017	−12.072	−1.261
SCL_{base}[b]	.30**	.099	.23**	.004	.100	.500
Leadership experience	.26	.227	.06	.261	−.199	.716
CSE[c]	.50	.380	.06	.197	−.267	1.264
Gender	.32	.342	.05	.352	−.367	1.010
MTL_{aff}[d]	−.05	.295	−.01	.855	−.648	.539
SCL_{prior}[e]	1.20**	.222	1.46**	<.001	.748	1.642
WAL[f]	1.37^{t}	.626	$.20^{t}$	.034	.106	2.627
SCL_{prior} × WAL	−.20*	.074	−.73*	.011	−.345	−.047

Notes.
Statistical significance levels after applying Bonferroni corrections: ^{t} p <.05, * p <.025, ** p <.005.
[a] SCL (skin conductance) index of current emotions (i.e., during leadership task 2).
[b] SCL (skin conductance) index of baseline.
[c] Core self-evaluations.
[d] Affective-identity motivation to lead.
[e] SCL (skin conductance) index of prior emotions (i.e., during leadership task 1).
[f] Worries about leadership.

Table 6
Linear regression analysis of the Hypothesis 5*b* with mean-centered variables.

	DV: $SCL_{current}$[a]					
					95 % CI	
	B	SE (B)	β	*P*	lower bound	upper bound
H5*b* – relationship between the interactive term of the mean-centered WAL and mean-centered prior negative emotions (operationalized as SCL_{prior}) with current negative emotions (operationalized as $SCL_{current}$).						
Constant	5.20	.228		<.001	4.745	5.663
SCL_{base_cent}[b]	.30**	.099	.23**	.004	.100	.500
Leadership $experience_{cent}$	.26	.227	.06	.261	−.199	.716
CSE_{cent}[c]	.50	.380	.06	.197	−.267	1.264
Gender	.32	.342	.05	.352	−.367	1.010
MTL_{aff_cent}[d]	−.05	.295	−.01	.855	−.648	.539
SCL_{prior_cent}[e]	.60**	.063	.74**	<.001	.473	.727
WAL_{cent}[f]	−.06	.317	−.01	.840	−.702	.574
SCL_{prior_cent} × WAL_{cent}	−.20*	.074	−.11*	.011	−.345	−.047

Notes.
Statistical significance levels after applying Bonferroni corrections: ^{t} p <.05, * p <.025, ** p <.005.
[a] SCL (skin conductance) index of current emotions (i.e., during leadership task 2).
[b] SCL (skin conductance) index of baseline (mean-centered).
[c] Core self-evaluations (mean-centered).
[d] Affective-identity motivation to lead (mean-centered).
[e] SCL (skin conductance) index of prior emotions (i.e., during leadership task 1) (mean-centered).
[f] Worries about leadership (mean-centered).

self-nomination for leadership (i.e., current emotions). As our secondary interest, we also investigated the correlates of current emotions – prior emotions during past leadership tasks and other emotion-laden factors, such as affective-identity MTL, and WAL. Our findings, in a nutshell, suggest that, figuratively and literally, people may be listening to their hearts when they choose to become leaders. Let us elaborate on this conclusion and discuss the contributions and limitations of this research.

Self-nomination for leadership

The results provided partial support for the main hypothesis that current emotions would be associated with the likelihood of self-nomination for leadership. Participants who experienced positive emotions, as indexed by the change in their heart rate variability, were more likely to nominate themselves for leadership than those who did not experience positive emotions. No significant relationship could be established between changes in skin conductance, an index of negative emotions, and self-nomination likelihood. The results indicated that experiencing positive emotions was positively associated with individuals' self-nomination, but no association was found for negative emotions.

These findings could be explained in the framework of approach-avoidance motivation (Harmon-Jones et al., 2013), and the two-factor theory of motivation (Herzberg et al., 1959). Self-nomination for leadership is a voluntary choice to *opt-in* or not into a possible future situation (i.e., leadership); there is no need to *opt-out* because there is nothing to opt-out from (the person is not a leader yet). Hence, self-nomination for leadership is an approach (versus avoidance) act and in this situation, positive (but not negative) emotions bear relevance. By signaling safety and attaching a positive value tag to the option (Schwarz, 2011), or encoding positive outcomes of earlier decisions

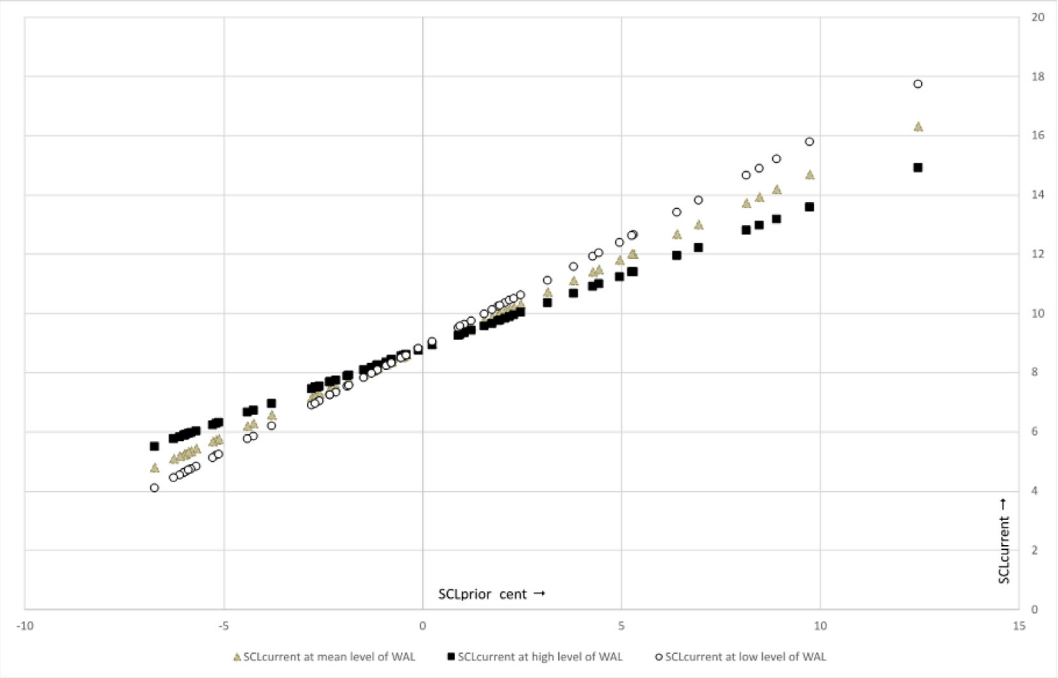


Fig. 2. Simple slopes for $SCL_{current}$ on $SCL_{prior\ _cent.}$ at different levels of WAL.

in a similar context (Reimann & Bechara, 2010), positive emotions contribute to developing an approach motivation by creating an additional impulse to go for self-nomination. Individuals may experience negative emotions, but their role does not seem to be significant for self-nomination. It is not the absence of negative emotions but the presence of positive emotions that seems to be important for individuals' likelihood to self-nominate for leadership.

Herzberg's two-factor theory of motivation (Herzberg et al., 1959) suggests that one set of factors (hygiene factors) causes individuals to be dissatisfied and a different set of factors (motivators) stimulates motivation. Using Herzberg et al.'s (1959) terms, positive emotions may be a facilitator for self-nomination, while negative emotions, like hygiene factors, may be a neutral force. In a similar vein, among individual difference variables affective-identity MTL (but not WAL) was the significant correlate of the likelihood of self-nomination. Higher affective-identity MTL was associated with a higher self-nomination likelihood score, while WAL was an insignificant predictor. Earlier findings confirm the association of MTL with leader emergence (e.g., Hong et al., 2011) and self-nomination for leadership (Aycan & Shelia, 2019).

As an alternative framework for understanding the association of positive emotions with the likelihood of self-nomination for leadership, we could use Schwarz's (2011) feelings-as-information theory, which suggests that experiencing positive emotions affects cognitive processing during decision making (Lerner et al., 2015). Specifically, when individuals experience positive emotions, they employ an explorative and creative approach to processing the information, as compared to negative emotions that may prompt detailed and scrupulous consideration of the options and the related information. From this vantage point, it may be possible that experiencing positive emotions at the time of contemplating whether to self-nominate for leadership allows individuals to see more opportunities and positive challenges (than disadvantages or problems) associated with assuming the leadership role. Therefore, it may be easier for them to decide to self-nominate.

Putting everything together, it seems that opting in for leadership is more likely if (1) individuals enjoy leadership (i.e., have high affective-identity MTL), and (2) they experience positive emotions at the time of contemplating the decision to self-nominate for a new leadership role. It would be an interesting research question to explore under what conditions negative emotional factors such as WAL could be related to opting out of leadership when individuals are not highly motivated, or they do not experience positive emotions.

The concepts of Positive Emotional Attractor (PEA) and Negative Emotional Attractor (NEA) proposed by Boyatzis (2006) could also offer an interesting framework for further investigating this question. "The PEA and NEA are two distinct psychophysiological states comprised of distinct emotional, psychological, physiological, and neurological characteristics…" that trigger different mental foci (Boyatzis et al., 2015, p. 4). PEA is associated with experience of positive emotions (e.g., joy, amusement) and parasympathetic nervous system activation (e.g., higher HRV); it primes thoughts of an ideal self, hopes and activates promotion focus and learning orientation (Howard, 2006). NEA is associated with negative emotional experiences (e.g., anxiety, guilt) and sympathetic nervous system activation (e.g., lower HRV); it focuses individuals on their reality, activates prevention focus, and performance orientation (Howard, 2006). In relatively neutral, non-consequential lab conditions, like in our study, where choosing to self-nominate for leadership or not was not fraught with major ramifications (e.g., social costs of rejecting an offer, passing on career or financial opportunities), self-nomination may only be associated with a state of Positive Emotional Attractor. This is what we see in our results – positive emotions as indexed by higher HRV and affective-identity MTL were linked to the decision to self-nominate, while negative emotions and WAL were not. But it could be different in real-life situations – an opportunity to become a leader may also trigger a Negative Emotional Attractor state in individuals because of different possible (positive and negative) consequences of a decision to self-nominate or not; at that time negative emotions and WAL may become relevant for the final decision.

Motivations and worries about leading

The second major finding of this research is that current emotions are aligned with prior emotions, such that emotional experiences in past leadership roles are associated with individuals' feeling when con-

templating whether to self-nominate for a new leadership role. Results confirmed that participants who experienced positive (negative) emotions during leadership role performance, also experienced positive (negative) emotions during self-nomination. The physiological reactions during leadership role performance and self-nomination correlated positively, indicating a possible "spillover" effect. This means that past leadership experience matters and can be relevant for how individuals feel at the time of considering a new leadership role.

Contrary to our expectations, affective-identity MTL and WAL did not correlate with current emotions. We predicted that affective-identity MTL and WAL would be associated with the appraisal process and predispose individuals to experience positive and negative emotions (respectively) when deciding whether to self-nominate for leadership. This prediction was based on the argument that these two constructs would influence how individuals appraised the self-nomination task in terms of its relevance and congruence with personal goals, and its demands on personal resources. The non-significant findings can be explained in several ways. First, most of the empirical research that established the link between individual difference constructs and experienced emotions measured both variables using (the same) self-report methods (e.g., Rusting & Larsen, 1997; Watson & Naragon-Gainey, 2014). In the present research, current emotions were measured using physiological indices which could be the reason why there was no association. Boucsein (2012) reports that research investigating the relationships between both higher and lower order personality traits and electrodermal activity are inconclusive. There is a lack of *meta*-analytic work that would summarize the pattern of relationships between individual difference variables and heart rate variability. Additionally, it could be that self-nomination for a hypothetical leadership role in the lab situation was not a strong enough stimulus to evoke emotions that would reflect individual differences in terms of affective-identity MTL and WAL. Affective-identity MTL and WAL could have influenced how relevant (in terms of personal goals) participants considered self-nomination for leadership, but the stimulus presented to them may have not been appraised as a demanding situation to evoke strong emotions. It is also possible that, similar to the well-known disconnect between attitudes and behavior (Carruthers, 2018), what individuals think (and report) about the affective aspect of their leadership motivation and WAL, do not necessarily coincide with what they actually experience. People may think they would worry about the negative consequences of being a leader but not experience negative emotions while deciding to assume a leadership role. Findings from emotion research also illustrate the possible asynchrony between individuals' reported expectations and actual experience. It has been found that people may overestimate the intensity of forecasted emotions (both negative and positive) and their actual emotional experiences are not like how they imagine they would be – they are usually less intense (Mellers, 2000).

Interestingly, although WAL did not correlate with current emotions, it did moderate the relationship between prior emotions and current emotions by attenuating it. For participants with higher WAL, the association of prior negative emotions with current negative emotions were weaker than for participants with lower WAL. This finding was opposite to what we predicted. We expected that WAL would strengthen the association of prior negative emotions with current negative emotions. The unexpected direction of WAL's moderating effect could be explained by the specific design of the study. As explained in the Methods section, participants responded to the WAL scale in the lab. WAL was part of the stimulus presentation along with leadership tasks. By making participants respond to WAL items short before asking them to self-nominate for leadership, we may have primed them to become aware of their worries. Responding to WAL items required participants to realize and reflect upon their worries. This way, high WAL participants became better prepared for self-nomination situation and actually experienced less intense emotions than if they had not been prepared. In a study by Lieberman et al. (2007), it was found that labeling emotions actually diminished the emotional response to negative stimuli on a physiological level. For low WAL participants, priming would not make as much difference.

From the emotion regulation perspective, priming high WAL participants and raising awareness of their worries may have caused them to reappraise the self-nomination situation, and thus experience less negative emotions (Lerner et al., 2015). In other words, after becoming aware of their worries about leadership, participants, prompted by their awareness and the desire to avoid negative emotions, could have reframed the self-nomination situation and made it more innocuous, less threatening than it would otherwise be. In either case, the effect would be more pronounced for high WAL participants, and this could explain why WAL moderated the association between prior emotions and current emotions. For future research, it would be interesting to experimentally test whether making individuals aware of their WAL would indeed attenuate their negative emotional responses to self-nomination for leadership. This would not only have a theoretical, but also practical value as a brief intervention strategy in leadership development programs. WAL could be used not only for diagnostic purposes, but also as a means to alleviate the worry about possible negative consequences of leadership among potential candidates by shifting their focus from the emotional domain to the rational one. As a deliberate effort, the training modules or coaching sessions could be built around discussions of the possible unpleasant aspects of leadership and the ways of preventing or handling them constructively.

Theoretical and practical contributions of the study

The findings of this study have implications for leader emergence literature. Traditional leader emergence literature rarely understands leader emergence as an individual's *decision* to pursue or stay away from leadership. Instead, the field narrowly focuses on "…the factors associated with someone being perceived as leaderlike" (Hogan et al., 1994; p. 10). Hence, most leader emergence studies often examine how others perceive a person's leadership potential and overlook the role of self-selection mechanisms (Epitropaki, 2018). This study helps to broaden the construct domain of leader emergence by including one aspect of the self-selection process, namely emotions at the time of deciding to become a leader.

The main conclusion to be drawn, based on the results of this research, is that positive emotions could possibly be associated with self-nomination for leadership. If individuals (a) experience positive emotions in the moment of deciding whether to become a leader, (b) have had positive emotional experiences in their past leadership roles, and (c) have a high affective motivation, their self-nomination is more likely. These findings demonstrate that in addition to stable traits like extraversion (as found in earlier research) a transient state like emotions can also be linked with self-nomination as part of the leader emergence process. This matches the theoretical perspective proposed by Zaccaro and colleagues (2018), who emphasize the role of a subjective evaluative state (like e.g., emotions) of an individual as a precursor of different leadership outcomes (including leader emergence).

Our findings could have implications for leadership practitioners. If we want to attract and encourage competent people to take on leadership roles, training and development designs may be advised to emphasize experiential leadership exercises that will be emotionally positively loaded. These positive emotional experiences may tag being in a leadership role with a positive label; or as demonstrated by the results, they can have a "spillover" effect on emotions experienced at a later stage of self-nominating for leadership. The results of this study also suggest that framing future leadership opportunities should be carefully considered. To motivate and convince candidates to accept leadership roles, it may not be sufficient to only rely on rational arguments; stressing emotionally rewarding aspects may make it easier for them to make a decision.

Limitations

The major limitation of the current research is its ecological validity. The lab design was necessary to be able to collect physiological data by controlling for various environmental and other factors that could affect them in the field. However, a leadership study designed in a lab environment may not be a realistic representation of real-life situations for the following reasons. First, just imagining being a leader and talking about plans in an imagined situation (task 1) is not the same as being a leader, therefore they may not be evoking the same emotions or, more plausibly, emotions of the same intensity. Second, imagining oneself in a task-force and contemplating on a leadership role in that group (task 2) is quite superficial. It would have been ideal to design an experiment featuring a real-time interaction among members of a group in the lab. However, the psychophysiological nature of the measurement required participants wear devices and complete the tasks alone with minimum movement, rather than in the presence of others.

Third, we only considered emotions related to a single brief instance of leadership role performance (i.e., task 1), while in real life, several and longer experiences of being in leadership roles may produce a multitude of diverse emotional experiences and their "spillover" effect on current emotions would be more diffused. To address this limitation, for future research, we recommend including several different tasks in the paradigm. Fourth, the two leadership tasks happened in close proximity in time, which would normally not be the case in real life. It is possible that the time lapse between the previous leadership experience/s and the self-nomination for a new leadership role may affect the strength of the spillover. We believe that the association of prior emotions with current emotions in real-life contexts may not be as strong but would still be present.

Our experiment may not have been free from the experimenter demand effects (EDE), namely the confounding effects of cues inadvertently signaling what constitutes appropriate behavior to the participants (Zizzo, 2010). Participants filled out the MTL scale before coming to the lab and the WAL scale before the measurement of key variables. Both scales might have primed participants to respond in a particular way, rendering it impossible to guess the direction. For some participants, these scales might have signaled the appropriateness of conservative leadership behavior (i.e., feeling worried about leading in the tasks ahead), while for others they might have signaled an opposite message (i.e., feeling motivated and not worried about the tasks ahead). This type of EDE is referred to as cognitive (Zizzo, 2010). We acknowledge the possible EDE effects in our experiment. We also adopt Zizzo's (2010, p. 92) *magnifying glass argument* to suggest that giving MTL and WAL scales to participants ahead of time might have magnified the relevance and salience of *motivation and emotion* in decision making, which already exist in real life but not consciously accessible to individuals unless being asked.

In respect to the measurement of the variables, as explained in the Methods, self-nomination was measured using a single item responded using a scale. While for measurement purposes it might have been more convenient to use a scale, when the self-nomination decision is also used as an emotion inducing situation (as in our research) – an *either/or* formulation of the answer would have been a better option (Aycan & Shelia, 2019). It would emulate the real-life decision making situation better and would thus create a stronger stimulus to evoke emotions. In terms of the content of the self-nomination for leadership tasks, the task was framed so that the context would be familiar and relevant for our student samples. Nevertheless, self-nomination for leadership in this context could still be differentially attractive for each student participant based on their interests and engagement in university life, thus differentially affecting their emotional responses.

On a more general note, it is important to acknowledge the issues pertaining to causality and endogeneity in our study. Finding a significant relationship between our independent (i.e., current emotions) and dependent variables (i.e., likelihood of self-nomination for leadership) is a required but not a sufficient condition for claiming the causality between these two variables (Antonakis et al., 2014). To identify causality, the dependent variable has to follow the independent variable temporally, which was not the case in our research (specifically, Hypothesis 1). Considering that we measured current emotions and the likelihood for self-nomination for leadership almost simultaneously (see, Fig. 1), we cannot claim that emotions necessarily preceded the decision of our participants to self-nominate (it could have been a reverse relationship). Additionally, our study was not designed to manipulate the independent variable (e.g., we did not purposefully elicit positive or negative emotions in the leadership tasks).

The study sample (i.e., students) and the sampling strategy (i.e., the non-random sampling) could raise questions about external validity and endogeneity. The findings based on students may not be generalized to working adult populations or to people with extensive leadership experiences. Work and leadership experiences may be factors that could alter the emotional responses of participants during both leadership role performance and self-nomination tasks. The non-random sampling could exacerbate the possibility of a confounding effect of some unknown variable/s (e.g., need for course credit or money in exchange for participation). Such variables, unaccounted for, in our model could eliminate the relationship between our dependent and independent variables, hence the problem of endogeneity (Antonakis et al., 2014). While planning our research, we tried to carefully consider these variables and controlled for them (e.g., CSE, past leadership experiences, gender, health condition checks). However, for example, higher order personality trait such as extraversion or certain biological attributes could have also been influential on both emotions or the decision to self-nominate for leadership.

To address the issues of causality and endogeneity, future research can consider implementing one or more of the following strategies (Antonakis et al., 2014). First, the positive or negative emotional valence in a leadership task could be experimentally induced in leadership tasks prior to assessing self-nomination. Second, a temporal distance could be built into the experiment between the leadership task (and resulting emotions) and the assessment of the impact of emotions on the likelihood of self-nomination for leadership. Third, the proposed causal link between emotions and decisions could be further tested by comparing the experimental group with a control group in which there is either no leadership task or a task to elicit neutral emotions in time 1 (rather than positive or negative emotions). Finally, exogenous effects by other individual-difference variables can be controlled for statistically or through sampling of participants (random or purposeful sampling).

Conclusion

Our findings demonstrate that along with stable traits like extraversion, a transient state like emotions can also be associated with leader emergence. This resonates with the theoretical frame proposed by Zaccaro and colleagues (2018), where the role of a subjective evaluative state (e.g., emotions) of an individual, as a precursor of different leadership outcomes (including leader emergence) is highlighted.

These findings can have specific implications for organizational practices. Knowing that emotions can play a role in the decision to accept a leadership position, calls for training and development designs that not only strengthen the skill base but also incorporate activities that build positive emotional experiences associated with leadership. This may enable organizations to attract more talent to leadership roles. For many reasons, leadership may be strongly associated with stress for candidates (Harms et al., 2017), while these positive emotional experiences may tag being in a leadership role with a positive label; or as demonstrated by the results, they can have a "spillover" effect on emotions experienced at a later stage of self-nominat-

ing for leadership. Based on the results of this study, organizations may also reconsider how future leadership opportunities are framed and presented to the candidates. Offers to accept a leadership role can be made appealing to both the mind and the heart. Rather than just relying on rational arguments, it may make an offer more motivating and compelling if emotionally rewarding aspects of leadership are also put forward.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.leaqua.2022.101643.

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