AMERICAN PSYCHOLOGICAL ASSOCIATION

Journal of Applied Psychology

ISSN: 0021-9010

2023, Vol. 108, No. 12, 1952–1978
https://doi.org/10.1037/apl0001114

When "Who I Am" Is Under Threat: Measures of Threat to Identity Value, Meanings, and Enactment

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Although scholars across fields have studied threats to individuals' identities for their impact and ubiquity, the absence of standard scales has hindered the advancement of this research. Due to the lack of identity threat measures, the myriad existing propositions and models remain untested which may generate skepticism of the field. In the comparatively rare instances where deductive models have been tested, studies often suffer from methodological shortcomings related to the absence of a standard measure (e.g., the use of scales that tap into adjacent constructs) or an assumption of unidimensionality, despite recognition that identity threat can take various forms. Such shortcomings can yield inaccurate conclusions and threaten content validity. In response to these issues, we followed recommended steps to develop three measures capturing threats to identity value, meanings, and enactment. We rigorously validated these measures across different contexts: threats to teachers' work-related identity, to pregnant women's leader identity, and to organizational members' lesbian, gay, bisexual, transgender, queer or questioning identities. Our results provide evidence of the psychometric validity of the three measures and their applicability to different types of identities individuals hold. Using our measures, scholars will be able to further explore identity threat triggers and outcomes, the mechanisms underlying the effects of the three different types of threat on outcomes, and temporal dynamics. Researchers can also use our measures in designing interventions. Ultimately, this will allow management and applied psychology scholars to develop better guidance for organizations and employees dealing with the commonplace, yet difficult experience of identity threat.

Keywords: identity threat, measurement, scale, validity

Supplemental materials: https://doi.org/10.1037/apl0001114.supp

Identities are people's perceptions of who they are, based on their personal and demographic characteristics, the groups they belong to, the relationships they have, and the roles they play in society (Ashforth et al., 2008). Identity threats—"experiences indicating potential harm to the value, meanings, or enactment of an identity" (Petriglieri, 2011, p. 644)—are pervasive in modern society. Identity-threatening experiences result in outcomes relevant to individuals (e.g., decline in well-being; see Boyce et al., 2007), groups (e.g., intergroup conflict; see Fiol et al., 2009), organizations (e.g., blocking organizational change; see Nag et al., 2007), and society at large (e.g., social change; see Lyons et al., 2017). For their ubiquity and impact, identity threats have garnered scholarly attention across fields like applied psychology (e.g., Kinias & Sim, 2016; Liu et al., 2021; Selenko & De Witte, 2021), management (e.g., Leigh & Melwani, 2022; Lyons et al., 2017; Rawski et al., 2022), marketing (e.g., White et al., 2018), and political science (e.g., Ben David et al., 2017).

Despite this widespread scholarly interest, "a significant limitation to the advancement of [this] research is the absence of a standard measurement scale" (Petriglieri, 2011, p. 657). The absence of a measure that is valid and reliable across contexts is problematic for several reasons. First, while extant studies have advanced our understanding of the triggers and outcomes of identity threat, to date, many existing theoretical propositions and models have not been tested. For example, field researchers relying on

This article was published Online First July 27, 2023.
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This research received funding from the ESSEC Research Center. The authors would like to thank Jennifer Petriglieri for her feedback on scale items and IESE Business School's brownbag seminar participants for their suggestions on an earlier version of this work. The authors are also grateful to the 33 subject-matter experts for their help. A previous version of this article was presented at the 81st Annual Meeting of the Academy of Management, 2021. The authors have no known conflicts of interest to disclose.

The processed data for Stages 2–6 on which our conclusions are based and code for temporal consistency analyses is available at https://osf.io/b5hrt/?view_only=c1f17b92103c47c8abc9fb795056cbb9. Other syntax and any additional data and materials are available by emailing the corresponding author. This article is partly based on George's (2021) doctoral dissertation, completed under the guidance of Karoline Strauss.

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qualitative data have generated propositions regarding how people cope with identity threats in various contexts (e.g., during organizational change, Fiol et al., 2009; or during pregnancy, Ladge et al., 2012), but these have rarely, if ever, been tested. Specifically, quantitative papers often use identity threat as an untested mediator for their arguments. For example, Paustian-Underdahl et al. (2017) posited that identity threat explains why female supervisors provide more support to male subordinates when working in organizations with high levels of gender equity. Yet, the role of identity threat was not directly tested. In a similar vein, Markoczy et al. (2020) theorized (but did not test) that identity threat explains why previous interlocking ties with male/female directors lead to higher proportions of female directors on company boards. In other survey-based designs, researchers measure antecedents and claim to capture identity threat even though it is not assessed (e.g., stigma—McGonagle & Barnes-Farrell, 2014; age and gender stereotypes—Manzi et al., 2021). In addition, laboratory experiments of stereotype threat have manipulated threat (Nguyen & Ryan, 2008; Ryan & Nguyen, 2017; Zigerell, 2017), but these findings lack external validity. Generalization of the stereotype threat effect to real-life settings (e.g., personnel selection tests) remains a concern and a priority for future research (Shewach et al., 2019). The paucity of theory testing of identity processes is a lost opportunity that may even cause skepticism of the field (Caza, Vough, & Puranik, 2018).

Second, where deductive models have been tested, studies often suffer from methodological shortcomings related to the absence of a standard measure. In the lab, there is no standard manipulation check to verify whether research participants are indeed experiencing identity threat (Petriglieri, 2011). In the field, researchers deploying surveys have either used idiosyncratic, context-specific measures (e.g., items capturing ethnic identity threat; see Ethier & Deaux, 1994; Leach et al., 2008) or utilized scales reflecting tangential constructs (e.g., Aquino & Douglas's, 2003 adaptation of the Workplace Harassment scale; Lyons et al.'s 2020 use of items tapping into identity conflict and identity suppression; Craig et al.'s 2019 items that embed the identity threat trigger). The use of different scales makes it difficult to determine whether differences in findings across studies are attributable to measurement inconsistency or to other aspects of the studies such as the research context and sample (Bruner, 2003), or the type of identity that is under threat (e.g., one's identity as a parent vs. one's professional identity). In other words, at present, we are unable to assess what elements of threat are universal versus what elements may be idiosyncratic. Further, the use of items that capture content from adjacent constructs threatens content validity (L. S. Lambert & Newman, 2022). As a result, we may be drawing inaccurate conclusions about individuals' experience of identity threats. Table 1 provides an overview of existing survey measures and their limitations. Combined, the methodological shortcomings and measurement inconsistencies in extant quantitative research on identity threat have prevented researchers from conducting meta-analyses, thereby foregoing the opportunity to draw more systematic conclusions and identify moderators and areas for future research (Geyskens et al., 2008).

Finally, despite recognition that there are various forms threat can take (e.g., Branscombe et al., 1999; Petriglieri, 2011; Shapiro, 2011), existing measures attempting to capture identity threat tend to be unidimensional, not taking into consideration the possibility of distinct forms of threat. With such general measures, we miss out on important nuances that may differentiate between different experiences of threat. This is important because there may be varying antecedents and outcomes of each form of threat that are currently overlooked.

In response to above issues, we developed and validated identity threat measures assessing three distinct types of identity threat: threat to identity value, threat to identity meanings, and threat to identity enactment (Petriglieri, 2011). Threats to identity value refer to experiences in which a given identity is devalued. Threats to identity meanings are experiences suggesting that one's understandings of an identity are no longer sustainable. Threats to identity enactment concern experiences that limit or prevent an individual from expressing an identity. Importantly, these types of threats may concern any of an individual's identities (e.g., professional, personal, social). Our goal is to offer the field measures that are adaptable to different identities and can therefore be used across research contexts.

The development of three measures capturing three identity threat types represents an important contribution to the applied psychology and management literatures because it addresses the various concerns noted above. First, wide adoption of the scales will allow for consistency across manuscripts that will enable the field to develop a more cohesive body of knowledge and will lay the basis for eventual meta-analytical studies. These measures can be used not only in the lab but also in field research, increasing the external validity of this concept. Second, our scales can be used to compare across different types of identities to deepen understandings of similarities and dissimilarities in identity types. Third, a distinct advantage of the scales we produce is that they can serve multiple purposes. Scholars can use the three scales to get a general understanding of identity threat in their target population, or they can focus on theorizing and measuring specific types of threat. Accordingly, knowledge can accumulate regarding identity threat broadly, but also in terms of the specific forms identity threat can take.

Defining Identity Threat

Identity

The first step in developing a scale is to define the construct of interest (Hinkin, 1998). Individuals' identities are answers to the question: "Who am I?" (Ashforth et al., 2008) and are premised on personal characteristics that are seen as unique (Brewer, 1991; Kreiner, Hollensbe, et al., 2006), social roles and the related role-relationships (Sluss & Ashforth, 2007), and membership in collectives (Mael & Ashforth, 1992).

Identity Threat

Building upon the transactional model of stress and coping (Lazarus & Folkman, 1984), Petriglieri (2011) defined identity threats as "experience[s] appraised as indicating potential harm to the value, meanings, or enactment of an identity" (Petriglieri, 2011, p. 644). Identity threat is inherently subjective (Elsbach, 2003) and rooted in people's experiences (Weiss & Rupp, 2011). While particular situations have a strong potential to trigger identity threat (e.g., when a person is attacked because their identity is tied to membership in a group and the event is highly publicized; see Leigh

Table 1
Existing Measures of Identity Threat in Surveys

Reference	Focal threat to identity	Example items	Limitations
Ethier and Deaux (1994)	Ethnic identity threat: Perceptions that the value or meaning of one's ethnicity (e.g., Hispanic) is challenged in a given environment (e.g., university)	• I feel that my ethnicity is incompatible with the new people I am meeting and the new things I am learning. • I cannot talk to my friends at school about my family or my culture.	Items specific to ethnic identity; items embed threat trigger
Stephan et al. (1999)	Realistic threats (threats to the existence of the in-group) and symbolic threats (threats to the in-groups' worldview) to one's racial identity	• Immigration from Asia is undermining American culture. • Asian immigrants get more form this country than they contribute.	Items specific to threat to in-group identity; items embed threat trigger
Aquino and Douglas (2003)	Experiencing overt action that challenges, calls into question, or diminishes one's sense of competence, dignity, or self-worth	Report how often one or more coworkers displayed following behaviors toward them in past 6 months: • Made insulting comments about your private life. • Questioned your abilities or judgments.	Items tap into adjacent construct (workplace harassment)
Leach et al. (2008)	Dutch people's sense that their in-group is threatened	• The increased tension makes me worry that my group receives little respect. • The tension threatens my sense of being Dutch.	Items specific to threats to in-group identity; items embed threat trigger
Henderson and O'Leary-Kelly (2012)	Employees' perceptions that they are not valued, respected, and have low standing in the organization	The way I am treated by this organization makes me feel: • Devalued. • Disrespected.	Items tap into adjacent construct (workplace respect)
Craig et al. (2019)	IT identity threat: The anticipation of harm to one's self-beliefs, caused by the use of an Information Technology (ePortfolio)	• ePortfolio makes me feel less respected by others in my peer group. • ePortfolio makes me feel displeased with who I am.	Items embed threat trigger
Lyons et al. (2020)	Heterosexual individuals' appraisal of lesbian, gay, bisexual, transgender, queer or questioning individuals' disclosure as harmful to the value, meanings, and enactment of their heterosexuality identity	• Me being heterosexual was incompatible with my gay/lesbian colleague. • I could not talk to my gay/lesbian colleague about my personal and romantic relationships.	Items tap into adjacent constructs (identity conflict and identity suppression)
Breakwell and Jaspal (2022)	Perceived reductions in the overall level of four identity motives (esteem, efficacy, continuity, distinctiveness) associated with a negative experience	Please think carefully about the experience you just described. • It undermines my sense of self-worth. • It makes me feel less competent. • I feel that my identity has changed. • It makes me feel less unique as a person.	Items specific to identity motives; one item per motive
Leigh and Melwani (2022)	Embodied threat: Perceptions of an increased likelihood of encountering physical harm because of one's social identity	• I worry about my personal safety because of my race. • I have been concerned about the safety of my community.	Items specific to racial identity; items focus on physical harm

& Melwani, 2019), there is variance in terms of when identity threat is perceived. For example, faced with discrimination, some individuals may experience identity threat while others may not (Major & O'Brien, 2005). It is therefore important to assess individual perceptions rather than assume threat will consistently occur in a given context (Petriglieri, 2011). When an individual evaluates an experience as self-relevant and potentially harmful to their identity (Lazarus & Folkman, 1984), they can face three different types of threat: threat to identity value, to identity meanings, and/or to identity enactment (Petriglieri, 2011). Below, we define the three types of threat in turn.

A threat to identity value is an experience in which the esteem, status, or worth of an identity is being called into question. A devaluation is threatening because individuals are motivated to hold and sustain positive identities (Sedikides, 1993). Threat to identity value typically stems from negative or less favorable than usual evaluations of an identity. For example, shifts in public attitudes and increasing negative media coverage can cause a given occupation to become stigmatized and its members to feel that their occupational identity is devalued (e.g., policing; see Chatterjee & Ryan, 2020). With regards to nonwork identities, cues that one's gender, ethnic, or religious identity are negatively evaluated (e.g., organizational norms, in-group favoritism) can also be threatening (Branscombe et al., 1999; Davies et al., 2005; Steele & Aronson, 1995).

A threat to identity meanings is an experience suggesting that the association between an identity and its meanings is unsustainable (Petriglieri, 2011). Meanings reflect people's understandings and interpretation of a given identity (Shamir, 1991). For example, an individual may attach the meanings of charisma and inspiration to their leader identity (Bataille & Vough, 2022). People are motivated to preserve and maintain the meanings of their identities because these provide a sense of self-continuity and guide their behaviors (Shamir, 1991; Wittman, 2019). Threat to identity meanings typically originates in undesired change or the unwanted continuation of the status quo. For example, blacksmiths experiencing a slow marginalization of their craft were no longer able to associate the

meanings of "independent worker" and "technician" with their professional identity (Anteby, 2008). The absence of desired change (e.g., a promotion) can also be threatening. For example, observing that one's career is stalling can clash with the meanings of professional growth many people attach to their work identity (Vough & Caza, 2017).

A threat to identity enactment is an experience that limits or prevents an individual from engaging in activities and interactions that express an identity (Petriglieri, 2011). People are motivated to express who they are by engaging in actions and interactions that allow them to claim and to be granted their identities (DeRue & Ashford, 2010; W. B. Swann, 1983). Threats to identity enactment arise when individuals are faced with constraints that limit their ability to behave the way they would like to express their identity. For example, time constraints can reduce individuals' ability to enact a particular identity: When work demands take people's time away from their personal life, enactment of one's nonwork identity can be threatened (Dahm et al., 2019; Kreiner et al., 2009). Life events can also threaten identity enactment. For instance, musicians suffering a physical injury were limited in their ability to play their instrument and enact their musician identity (Maitlis, 2009).

While these three types of threat can co-occur, many situations will only result in the individual experiencing one or two types of threat. For example, changes in status hierarchies can cause an individual to feel a threat to the value of their identity (Roberts, 2005), but do not necessarily indicate potential harm to the meanings or enactment of the person's identity. As such, identity threat is not an overarching construct made of multiple subdimensions (MacKenzie et al., 2005). Instead, it is a domain, that is, a coherent group of experiences (Netemeyer et al., 2003)—consisting of three distinct categories or types of experience. Operationally, each category is a separate latent construct with its respective reflective items (MacKenzie et al., 2011). Correspondingly, we developed three sets of items and modeled threat to identity value, threat to identity meanings, and threat to identity enactment as separate variables.

Nomological Network of Identity Threat

Having defined threat to identity value, meanings, and enactment, we now examine previously studied triggers and outcomes to identify appropriate variables for nomological validation.

Triggers of Identity Threat

Identity threat triggers are the individual, interpersonal, organizational, and social "contexts in which [identity] threat is likely to be encountered or induced" (Branscombe et al., 1999, p. 36; Petriglieri, 2011). As illustrated in the examples provided above, potential triggers of identity threat are quite varied (e.g., negative performance feedback, S. Kang & Kim, 2022, unfavorable media coverage, Eury et al., 2018, stigma, Major & O'Brien, 2005, etc.). Fundamentally, however, triggers of threat are experiences, cues, or changes in the environment that individuals recognize as lastingly harmful to who they are, how they should act, or their value in a social context (e.g., Higgins, 1987; Stets & Burke, 2005). Importantly, however, these triggers in and of themselves are not identity threat. Rather, identity threat is the result of an appraisal process in response to the potential trigger.

Outcomes of Identity Threat

Identity threats have been studied for their impact on individuals' affect, behaviors, and cognitions, which are relevant to individuals, their employing organizations, and society.

With regards to affective outcomes, a consistent theme is that facing identity threat can be emotionally exhausting and, if persistent, lead to the experience of burnout (Bedyńska & Żołnierczyk-Zreda, 2015). This is reflected in studies that have documented the effects of identity threats on individuals' well-being (Boyce et al., 2007), their experience of negative emotions (e.g., anger, guilt, or shame; see Greenbaum et al., 2022; Vescio et al., 2021), as well as affective distress and feelings of inauthenticity (Pachankis, 2007).

Among behavioral outcomes of identity threat, a central outcome is decreased performance (Leslie et al., 2014; Manzi et al., 2021; McGonagle & Barnes-Farrell, 2014; Shewach et al., 2019), a reduced proficiency in carrying out a given task. For example, Greenbaum et al. (2022) found that working parents experiencing parental identity threat due to the need to attend to parental identities at work become less productive.

Individuals can also respond to threat with cognitive coping mechanisms that help them deal with the threat. Specifically, they may respond through identity restructuring (Petriglieri, 2011) which involves changes to an identity or its importance. For example, individuals may form intentions to exit a threatened identity through a transition out of their job or occupation (intended identity exit; Ebaugh, 1988; Trevor & Nyberg, 2008).

Differentiation From Orbiting Constructs

Having delineated the construct's nomological network, we next distinguish identity threat from other constructs that overlap conceptually (Hinkin, 1998). In line with recommendations for scale development (Shaffer et al., 2016), we reviewed the literature and identified four constructs that share the most substantial overlap with and are most frequently discussed alongside identity threat[1]: self-esteem (Rosenberg, 1979), self-verification striving (Cable & Kay, 2012), identity suppression (Madera et al., 2012), and identification (Cameron, 2004; Petriglieri, 2011). We selected these constructs because they are similar to yet different from identity threats, they can be expected to correlate with one or more of the three threat types but are not in a causal relationship with them, they do not share a part-whole relationship with identity threats, they are measured at the level of the threatened individual, they are self-referential, and they have well-known definitions and commonly utilized scales (Colquitt et al., 2019). Below, we provide a description of the similarities and differences between these four constructs and the three threat types.

Self-Esteem

Self-esteem is a trait that reflects an individual's overall subjective evaluation of their personal worth (Rosenberg, 1979). Self-esteem

[1] As an anonymous reviewer pointed out, another orbiting construct is self-efficacy, a person's belief in their capability to execute behavior required to meet situational demands. Because of its close relationship with self-esteem (Chen et al., 2001), we did not originally include it in our studies. We did, however, include two measures of self-efficacy in an additional study (see supplemental material G) and found that they correlate with but differ from threat to identity value, meanings, and enactment.

and identity threat are conceptually similar because they pertain to identities' subjective value. While this relationship is most evident in the case of threat to identity value (e.g., in research where value threat and esteem threat are used interchangeably; see, e.g., Craig et al., 2019), scholars typically assume a negative relationship between self-esteem and identity threat broadly (e.g., Ethier & Deaux, 1994; Ferris et al., 2012; Taylor & Brown, 1988). We would correspondingly expect a negative correlation between all three types of identity threat and this orbiting construct.

Despite their similarities, self-esteem and identity threat are conceptually distinct. Self-esteem is a trait whereas identity threat is a transient appraisal of potential harm to an identity. Moreover, identity threats are appraisals specific to a given identity while self-esteem is a global assessment of the self (Gecas, 1982). Finally, identity threats need not come with diminished self-esteem. This is apparent in the observation that individuals who belong to stigmatized groups and often experience threats do not score lower than individuals from less stigmatized groups in self-esteem (Crocker & Major, 1989). In sum, the three types of threat relate to, yet differ from self-esteem.

Self-Verification Striving

Self-verification striving describes people's tendency to promote the survival of their self-conceptions (i.e., the meanings attached to identities; see Gecas, 1982), regardless of whether they are positive or negative (W. B. Swann, 1983, 1987). Like identity threat, self-verification striving pertains to the sustainability of self-conceptions. As with self-esteem, we expect self-verification striving to be negatively correlated with all three types of threat. Evidence from qualitative studies (e.g., Caza, Moss, & Vough, 2018) and propositions in theory papers (e.g., Thatcher & Zhu, 2006) provide some support for this assumption: Scholars have suggested that situations in which a person struggles to self-verify can be threatening for their identity (e.g., when telecommuting disrupts self-verification; see Thatcher & Zhu, 2006). While they are conceptually related, identity threat and self-verification striving differ. Self-verification striving is an individual trait that involves a tendency to preserve one's self-conceptions (Cable & Kay, 2012) while threat is not a trait but reflects a more or less transient subjective experience (Petriglieri, 2011).

Identity Suppression

Identity suppression refers to an individual's conscious decision to hold back from expressing an identity in a given context (Clair et al., 2005), for example, by concealing signs of this identity in their workspace and refraining from discussing it with coworkers (Madera et al., 2012). Identity suppression is conceptually most similar to threat to identity enactment as both constructs pertain to identity expression. Additionally, prior empirical studies found a negative association between threat to identity value and individuals' tendency to express their identity (Mackey et al., 2021; Madera et al., 2012). Further, qualitative findings point to a positive relationship between threat to identity meanings and identity suppression: Middle managers who perceived the label "middle" as a threat to the meanings of their work identity concealed their subordination to top managers from others (Alvesson & Willmott, 2002). Albeit conceptually similar, identity threat and suppression differ. The latter involves a conscious decision not to express the identity, whereas threatened people may still wish to express their identity but may be or feel limited in their ability to do so.

Identification

Individuals identify with a social category or target (e.g., a workrole, an occupation, an organization) when they have internalized it as a valid (partial) definition of self (Ashforth et al., 2013; Greco et al., 2022). Identification shares some overlap with identity threat. Petriglieri (2011) proposed that identification is positively related to identity threat: Individuals who strongly identify with a target are also more likely to feel threatened in an adverse experience. Illustratively, in a series of studies, ethnic identity threat was positively related to identification with one's ethnicity (Leach et al., 2008). Conversely, frequent exposure to threat can be associated with lower levels of identification over time as individuals may actively reduce their identification with the target to decrease the odds of feelings threatened (Crocker & Major, 1989). Even though identification is conceptually close to identity threat, the two constructs differ. Identification is about the importance of an identity to one's self-concept and threat is about concerns that an identity will be harmed (Leach et al., 2008).

Developing and Validating Measures of Threat to Identity Value, Meanings, and Enactment

The identity threat measures were developed and validated in six stages, following Hinkin's (1998) method and its application in recent articles (Djurdjevic et al., 2017; Yoshikawa et al., 2020), and in line with J. M. Cortina et al.'s (2020) recommendations. Stage 1 involved item generation and scale reduction using subject-matter experts' (SMEs) ratings. In Stage 2, we conducted exploratory factor analyses to further reduce the measures and assess their dimensionality for a work-related identity. In Stage 3, we evaluated the scales' psychometric properties—including factor structure, internal and temporal consistency, convergent and discriminant validity, and nomological network—for the same work-related identity as in Stage 2. To ensure that our scales were applicable to other types of work identities, in Stage 4, we conducted a study investigating a different type of work identity. Stage 5 demonstrates our scales' applicability to nonwork identities. Finally, Stage 6 illustrates the usefulness of our scales for examining existing yet untested models, focusing specifically on the moderating influence of frequent exposure to the potential identity threat trigger.

Transparency and Openness

For all our studies, research materials are presented in supplemental material A. For each study, we describe our sampling plan, all data exclusions, and all measures. We adhered to the *Journal of Applied Psychology* methodological checklist. The processed data for Stages 2–6 on which our conclusions are based and code for temporal consistency analyses are available at https://osf.io/b5hrt/?view_only=c1f17b92103c47c8abc9fb795056cbb9. Other syntax and any additional data and materials are available by emailing the corresponding author. Data were processed and analyzed using SPSS (Version 23), R (Version 4.2), and MPlus (Version 8.1). For all our studies, design and analyses were not preregistered.

Stage 1: Item Generation and Initial Scale Reduction

Item Generation

We used a deductive approach to item generation. Based on Petriglieri's (2011) theoretical definition and on extant literature, three of the authors independently created items corresponding to each of the three types of identity threat. We then revised these for redundancy and representativeness, and ensured that there were no double-barreled items (Hinkin, 1998). This yielded a total of 36 items, with 17 items for threat to identity value, 12 items for threat to identity meanings, and seven items for threat to identity enactment.

The first step in establishing construct validity is to assess content adequacy, that is, the degree to which items reflect the intended theoretical domain (Colquitt et al., 2019; Hinkin & Tracey, 1999). To evaluate the substantive validity of our 36 items and remove items not consistent with the constructs' definitions, we designed an item-sort task (MacKenzie et al., 2011).

Participants and Procedure

Data collection was approved by the ESSEC Research Ethics Committee (Study Title: Individual Identity Threat: The Development and Validation of a Scale). We invited 40 SMEs with knowledge of the identity literature to participate in the task. Our final sample consisted of 33 SMEs (17 professors, 14 PhD students, two postdoctoral researchers)—an adequate sample size for such tasks (Hinkin & Tracey, 1999). The item-sort task was designed to assess the degree of consistency between our items and the constructs' definitions and to ensure that our items were not tapping into related constructs (Hinkin & Tracey, 1999; MacKenzie et al., 2011). Participants viewed definitions of each of the seven constructs (the three threat types and the four orbiting constructs) one by one, each followed by 67 items in randomized order. The 67 items comprised the 36 identity threat items, and items measuring self-esteem (10 items; Schmitt & Allik, 2005), self-verification striving (eight items; Cable & Kay, 2012), identity suppression (10 items; Madera et al., 2012), and identification (three items; Cameron, 2004). SMEs rated how consistent each item was with the presented definition (1 = *not at all consistent*, 5 = *extremely consistent*). To account for possible order effects (Strack, 1992), participants were randomly assigned to one of two survey versions in which construct definitions were presented in a different order.

Results

We analyzed the data in three steps. We first used a procedure that combines analyses of variances with Duncan's Multiple Range Tests (Hinkin & Tracey, 1999). The analyses of variances allowed us to identify whether the mean rating for each item differed significantly across the seven constructs. Duncan's multiple range tests, in turn, enabled us to determine which means were significantly different from one another. We aimed to only retain items whose mean rating for the intended definition was significantly higher (one-tailed) than the mean rating for any of the six other definitions. As a result, we discarded four of the initial 17 items designed to assess threat to identity value. The remaining 32 items (13 for value, 12 for meanings, and seven for enactment) were rated as significantly more consistent with their respective definition than with any of the other six constructs. F ratios for these items ranged between 13.11 and 43.07 ($df = 6$; 222–224; $p < .001$).

In the second step, we tested for potential order effects using a multivariate analysis of variance with the survey version as a between-subjects factor and the 32 items as dependent variables. One item reflecting threat to identity meanings had a mean that marginally significantly ($p = .07$) differed depending on the ordering of the definitions. We therefore discarded it.

Finally, in the third step, we examined each item's definitional correspondence—the item's degree of correspondence to the construct definition—and definitional distinctiveness—higher degree of correspondence with the focal construct than with the orbiting constructs (Colquitt et al., 2019). On definitional correspondence, we aimed to retain items whose scores were comparable with those of the items of the four established scales (self-esteem, self-verification, identity suppression, and identification) that our sample also rated. We discarded two items that had a definitional correspondence score lower than 1 *SD* below the mean correspondence score of the established scales ($M = 0.84$, $SD = 0.09$), that is lower than 0.75. On definitional distinctiveness, we retained items whose definitional distinctiveness was at least moderate (distinctiveness score of 0.18 and higher; Colquitt et al., 2019).

In sum, following the SME item-sort task, we eliminated seven items. Twenty-nine items remained after our analyses: These items were rated as consistent with the definition of threat to identity value (12 items), threat to identity meanings (10 items), and threat to identity enactment (seven items). To further reduce scale length, we conducted additional scale purification in Stage 2.

Stage 2: Scale Purification and Dimensionality

In Stage 2, our purpose was to further reduce our scales and verify their dimensionality. To reach this goal, we scanned the literature for a context in which all three types of threat would be prevalent. We decided to study teachers, in line with research suggesting that the introduction of technology in their daily work can potentially trigger all three types of threat to their professional identity (Craig et al., 2019). Specifically, technological changes can reduce the power and prestige associated with the teaching profession, leading to a threat to the value of teachers' identity. In addition, technology changes the content of the work, creating "IT-infused meanings" that may threaten what it means to be a teacher (Craig et al., 2019, p. 266). Technological changes can also threaten the enactment of teachers' identity owing to a reduction in interactions: This decrease in face-to-face interactions can make it difficult to claim a teacher identity and likely reduces the opportunities for self-verification and identity granting processes (DeRue & Ashford, 2010; Thatcher & Zhu, 2006). Given that teachers vary in their perceptions about the role of technology in teaching (Spiteri & Chang Rundgren, 2020; Tondeur et al., 2017), we expected that there would be variation in the extent to which the teachers we surveyed appraised the introduction of technology as threatening to their teacher identity value, meanings, and enactment.

Participants and Procedure

Data collection was approved by the ESSEC Research Ethics Committee (Study Title: Identity threat: the development and validation of a scale [Samples 1 and 2]). We recruited 507 teachers via the online research platform Prolific (e.g., Palan & Schitter, 2018).

Respondents received £2 for completing a 10-min survey. We excluded 13 respondents who failed to pass one of the two attention filters in our survey, resulting in a final sample of 494 teachers (343 [69.4%] female, 151 [30.6%] male). Average age was 39.05 years (SD = 10.91), and average organizational tenure was 7.96 years (SD = 6.92). The teachers in our sample held a diverse array of teaching-related jobs: 22.1% were elementary school teachers, 7.3% were middle school teachers, 19.8% were high school teachers, 24.3% were college/university professors or lecturers, and 26.5% held other teaching-related jobs, for example, tutor, teaching assistant, private teacher, and adult educator.

The identity threat items were presented in randomized order: The goal was to avoid order biases (Strack, 1992) and to see which factors naturally emerge when the items corresponding to one type of threat are not grouped. The instructions were:

> Please take a moment to think about technological change and the rise in online teaching. The following questions are concerned with how your identity as a teacher is affected by this experience. Please indicate the extent to which you agree or disagree with the following statements.

Results

Item means, standard deviations, and the covariance matrix among items can be found in Table 1 of supplemental material B. An exploratory factor analysis (EFA) was employed to purify our scales and determine their dimensionality. Analyses were conducted in SPSS (Version 28). We expected the three identity threat scales to be correlated because technological change likely invokes all three types of threat in teachers. Consequently, we ran a principal axis EFA on the 29 identity threat items retained after Stage 1, using a Promax rotation. Three factors had eigenvalues above one and explained 68.30% of the variance in identity threat, exceeding the cutoff point of 60% (Hinkin, 1998). After two iterations removing items with loadings below .60 (Hair et al., 2010), the EFA with 19 items resulted in a three-factor model which explained 71.06% of the variance in identity threat. The three factors corresponded to threat to identity value, meanings, and enactment, with all items showing factor loadings above .60 and no cross-loadings above .35. Table 2 presents the resulting items, their factor loadings, and the correlations between the three components.

Stage 3: Psychometric Properties

In Stage 3, using a different sample of teachers, we scrutinized the psychometric properties of our measures, including factor structure, internal and temporal consistency, convergent and discriminant validity, and nomological network. With the 19 items from Stage 2, we examined the three-factor model and conducted chi-square difference tests to compare it to alternative nested models (e.g., a model with all the identity threat items loading onto one factor). Throughout the article, we base our evaluation of model fit on Kline's (2016) guidelines. As he notes, there is currently no clear consensus around the exact cutoff to evaluate a model's comparative fit index (CFI), but it is common practice to consider models where it is below .90 as poorly fitting. With regards to other model fit indices, standard mean square residuals (SRMRs) and root-mean-square error of approximations (RMSEAs) that exceed .10 are considered problematic.

We also assessed internal consistency using α and ω (J. M. Cortina et al., 2020). Next, we gauged our scales' temporal consistency following DeSimone (2015). We then verified convergent validity (i.e., how closely related the threat measures and the orbiting constructs' measures are) and discriminant validity (i.e., whether the

Table 2
Exploratory Factor Analyses Results for the Three Identity Threat Scales

Item	Component 1	Component 2	Component 3
I feel that there is a negative value attached to my identity as a [teacher].	−.06	.12	**.83**
Being a [teacher] is worth less in the eyes of others than before.	.26	−.17	**.78**
I feel that others attach a negative value to my identity as a [teacher].	−.13	.14	**.88**
I feel that my identity as a [teacher] is devalued by others.	.09	.06	**.80**
I feel that others see little value in my identity as a [teacher].	.05	.14	**.73**
I am no longer sure what it means to be a [teacher].	**.66**	.35	−.13
I am questioning what it means to be a [teacher].	**.81**	.19	−.14
I find myself questioning what it means to be a [teacher].	**.85**	.10	−.11
The core of what it means to be a [teacher] is changing in a way I do not like.	**.78**	.03	.05
What it means to be a [teacher] is changing in a way I do not like.	**.74**	.06	.09
What it means to be a [teacher] is being called into question.	**.64**	.03	.23
Being a [teacher] used to mean something different.	**.65**	−.20	.33
I feel that being a [teacher] does not mean the same thing anymore.	**.73**	−.16	.31
I am limited in my ability to express my identity as a [teacher].	.20	**.66**	.02
I may no longer be able to engage in activities that express my identity as a [teacher].	.22	**.64**	.01
I may no longer be able to show that I am a [teacher].	.04	**.82**	.01
I worry about no longer being able to express my identity as a [teacher].	.08	**.70**	.08
I worry that I cannot behave in the way a [teacher] behaves.	.12	**.66**	.02
I worry that I cannot show people that I am a [teacher].	−.23	**.94**	.10

Note. N = 494. Factor loadings above .35 are in bold. Component 1 corresponds to threat to identity meanings, Component 2 to threat to identity enactment, and Component 3 to threat to identity value. The placeholder [teacher] can be replaced with another identity that is the focus of the specific study (e.g., "leader" and "woman"). The correlations of Component 1 with Components 2 and 3 are .66 and .69, respectively. The correlation between Components 2 and 3 is .56.

identity threat scales were empirically distinct from the scales used to measure the orbiting constructs; Rönkkö & Cho, 2022). As outlined in the literature review, we expected the three types of identity threat to correlate with, but be distinct from, self-esteem, self-verification striving, identity suppression, and identification.

We utilized several tests to evaluate discriminant validity. First, we conducted a series of confirmatory factor analyses and used chi-square difference tests to determine whether the identity threat items and the orbiting constructs pertained to the same latent factor. Second, we employed the CI_{CFA} technique to examine the factor correlations between the threat items and the orbiting constructs (Rönkkö & Cho, 2022). The third discriminant validity assessment aimed at demonstrating that identity threat is uncorrelated with a construct with which it is not theoretically linked (Hinkin, 1995). For this analysis, we examined employees' voluntary green behaviors (Norton et al., 2017). Employees' voluntary green behaviors (EGBs), defined as individual actions that contribute to sustainability goals, evolve from strong and stable proenvironmental values (Norton et al., 2015). It is therefore unlikely that experiencing identity threat would lead to changes in people's voluntary green behaviors.

Finally, we verified nomological validity, the extent to which the focal construct correlates with antecedents and outcomes (Hinkin, 1998). We focused on technological change as a potential trigger of threat to teachers' identity (Craig et al., 2019). We included two measures that capture the key characteristics of change events, namely transformational change—people's perceptions of the extent to which change affects the organization's values, strategy, structure, and ways of working—and frequent change—perceptions of how often change is occurring (Rafferty & Griffin, 2006). With regards to outcomes, we expected threat to teachers' identity to predict exhaustion (Bedyńska & Żołnierczyk-Zreda, 2015), decreases in task proficiency (e.g., Steele, 1997), and identity exit intentions (Petriglieri, 2011).

Participants and Procedure

Data collection was approved by the ESSEC Research Ethics Committee (study title: Identity threat: the development and validation of a scale [Samples 1 and 2]). At Time 1, 509 teachers completed our survey via Prolific. Respondents received £1.80 for completing the first 10-min survey and were invited to participate in a second, shorter survey, 2 weeks later. The goal of the second survey was to assess our measures' temporal consistency. Time 2 participants received £0.60 for their participation.

At Time 1, we excluded nine respondents who did not pass our two attention checks, resulting in a final sample of 500 (195 [39%] male, 298 [59.6%] female, 7 [1.4%] other). Average age was 38.19 years (SD = 11.07), and average organizational tenure was 7.51 years (SD = 6.99). Among the participants 20.8% were elementary school teachers, 10.0% were middle school teachers, 21.4% were high school teachers, 27.4% were college/university professors or lecturers, and 20.4% held other teaching-related jobs.

Out of the initial 509 participants, 447 teachers completed our second survey (response rate: 87.8%). Of these 447 teachers, 426 respondents (167 [39.2%] male, 252 [59.2%] female, 7 [1.6%] other) passed both attention checks at the Time 2 survey. Average age in this subsample was 38.60 years (SD = 11.07), and average organizational tenure was 7.62 years (SD = 6.97). Within the Time 2 sample, 21.8% were elementary school teachers, 10.1% were middle school teachers, 21.6% were high school teachers, 26.3% were college/university professors or lecturers, and 20.2% worked in another teaching-related job.

Measures

All the measures described below were included in the Time 1 survey. At Time 2, we invited participants to take part in a second survey comprised of only the identity threat measures. Unless otherwise noted, participants responded to all the below items on a 5-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Supplemental material A presents items and instructions. Means, standard deviations, and the covariance matrix among identity threat items can be found in Table 2 of supplemental material B. Cronbach's α coefficients for the below measures can be found in Table 3.

Identity Threat. We measured identity threat using the 19 items developed in Stages 1 and 2, with five items capturing threat to identity value, eight items gauging threat to identity meanings, and six items to assess threat to identity enactment. We used the instructions detailed in Stage 2.

Self-Esteem. We assessed global self-esteem using Rosenberg's 10-item scale (Rosenberg, 1979; Schmitt & Allik, 2005). A sample item is: "On the whole, I am satisfied with myself."

Self-Verification Striving. To measure people's tendency to self-verify, we used Cable and Kay's (2012) eight-item scale. A sample item is: "I like to be myself rather than trying to act like someone I am not."

Identity Suppression. To gauge the extent to which people suppress who they are, we adapted and shortened Madera et al.'s (2012) identity suppression scale. Some items of the original scale did not make sense in the teacher context, and we retained five items. A sample item is: "I refrain from talking about my identity as a teacher."

Identification. We measured the extent to which our participants identified with their profession as a teacher using Cameron's (2004) three-item scale.[2] A sample item was: "In general, being a teacher is an important part of my self-image."

Transformational Change. To capture the degree to which the teachers were exposed to technological change, we used Rafferty and Griffin's (2006) three-item transformational change scale, adapting its instructions to the following: "Think about technological changes affecting the work environment of teachers, such as the rise in online teaching. To what extent have you experienced …" Sample items included: "Changes that affect the values of your school" and "Large scale changes significantly changing your school."

Frequent Change. To assess teachers' perceptions of change frequency, we employed Rafferty and Griffin's (2006) three-item scale, for example, "It feels like change is always happening." The

[2] We chose Cameron's (2004) measure of identification over another well-known measure of identification by Ashforth et al. (2013; Mael & Ashforth, 1992). Ashforth et al.'s measure taps into the feeling of being personally attacked when someone criticizes one's occupation. As such, this scale is conceptually close to perceptions of others' negative and positive attitudes toward one's occupation (Kreiner, Ashforth, et al., 2006). Additionally, in line with Leach et al. (2008), we view this measure as tapping more than one dimension of identification, including solidarity and satisfaction with other members of one's occupation. We included this measure of identification in an additional study, and it, too, was distinct from identity threat (see supplemental material G for detailed results).

Table 3

Means, Standard Deviations, Cronbach's α, and Correlations of Variables (Stage 3, Teachers)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age	38.19	11.07	—																
2. T1 threat to identity value	2.48	1.05	.02	(.92)															
3. T1 threat to identity meanings	2.61	0.99	.05	.72	(.93)														
4. T1 threat to identity enactment	2.01	0.80	.02	.57	.69	(.90)													
5. T2 threat to identity value	2.55	1.06	.07	.75	.58	.46	(.92)												
6. T2 threat to identity meanings	2.66	0.99	.13	.64	.76	.57	.75	(.93)											
7. T2 threat to identity enactment	2.15	0.88	.13	.55	.62	.71	.63	.75	(.90)										
8. Self-esteem	3.78	0.74	.20	−.26	−.27	−.35	−.25	−.25	−.32	(.90)									
9. Self-verification striving	4.00	0.57	.09	−.13	−.14	−.21	−.09	−.12	−.20	.36	(.80)								
10. Identity suppression	2.04	0.72	−.05	.23	.25	.42	.23	.28	.36	−.34	−.27	(.82)							
11. Identification	3.89	0.94	.11	.03	.01	−.04	.04	−.02	.01	.13	.27	−.29	(.86)						
12. Frequent change	3.50	0.88	.08	.31	.30	.22	.25	.29	.26	−.04	.02	.02	.18	(.77)					
13. Transformational change	2.98	0.94	.06	.19	.25	.19	.15	.22	.20	.02	.15	.06	.21	.43	(.79)				
14. Emotional exhaustion	3.48	1.20	.04	.39	.40	.33	.37	.43	.34	−.29	−.06	.13	.01	.32	.16	(.92)			
15. Task proficiency	3.98	0.69	.09	−.14	−.20	−.29	−.11	−.18	−.27	.41	.29	−.32	.20	−.05	.04	−.06	(.90)		
16. Identity exit intentions	2.44	1.31	.01	.38	.45	.39	.29	.41	.32	−.31	−.16	.29	−.21	.15	.04	.42	−.12	(.93)	
17. Green behaviors	3.49	1.00	.02	−.03	.00	−.05	−.09	−.09	−.11	.21	.19	−.12	.12	.06	.19	−.07	.21	−.05	(.95)

Note. $N = 500$ for all variables apart from the T2 threat measures. $N = 426$ for all the three T2 threat measures (Variables 5–7). Cronbach's αs are in parentheses. For all pairs not involving T2 threat measures, correlations $\geq |.09|$ are $p < .05$ and correlations $\geq |.12|$ are $p < .01$. For all pairs involving T2 threat measures, correlations $\geq |.10|$ are $p < .05$ and correlations $\geq |.13|$ are $p < .01$. Supplemental material H presents the correlation table with all the demographics described in Stage 3. T = time.

instructions were: "Think about technological changes affecting the work environment of teachers, such as the rise in online teaching. To what extent do you agree with the following?"

Identity Exit Intentions. Our proxy for people's intentions to exit their teacher identity was career turnover intentions, the extent to which people think about leaving their current line of work. We used a three-item measure capturing people's willingness to take on a new profession (Barthauer et al., 2020). An example item is: "I frequently think about abandoning my current line of work."

Task Proficiency. We assessed task performance using the three-item Task Proficiency scale (Griffin et al., 2007). Participants rated the extent to which, in the past few weeks, they, for example, "Carried out [their] tasks well."

Emotional Exhaustion. To gauge emotional exhaustion, we employed Iverson et al.'s (1998) three items, for example, "I feel emotionally drained from my work."

Employee's Voluntary Green Behaviors. Teachers were asked to rate the extent to which they "Act in environmentally friendly ways," alongside two additional items (Norton et al., 2017).

Confirmatory Factor Analysis Results

We examined the factor structure of the identity threat measures using confirmatory factor analyses (CFAs) in MPlus (Version 8.1). The hypothesized model in which threat to identity value, threat to identity meanings, and threat to identity enactment loaded onto three separate factors showed an acceptable fit with the data, Time 1: $\chi^2(149) = 732.71$; CFI = .91; RMSEA = .09; SRMR = .05; Time 2: $\chi^2(149) = 550.99$; CFI = .94; RMSEA = .08; SRMR = .04, and a significantly better fit than other models (see Table 4). We also compared this model in which items load onto the same latent variable but to differing extents (congeneric model) with a model in which items share the same true score (tau-equivalent model) and a model in which they share the same true score and variance (parallel model). The results can be found in supplemental material C. Given our finding that the congeneric model fits the data best and in keeping with recent recommendations (Rönkkö & Cho, 2022), we therefore supplement estimates of Cronbach's α (which rely on the assumption of tau-equivalence) with estimates of omega.

Internal Consistency

The α coefficients for the identity threat measures ranged between .87 and .93 across both time points (see Table 3), substantially exceeding the recommended .80 cutoff for research that focuses on correlations and group mean differences (Lance et al., 2006; Nunnally, 1978). For threat to identity value, omega total was .90 at Time 1, and .92 at Time 2. For threat to identity meanings, omega total was .92 at Time 1 and .93 at Time 2. And, for threat to identity enactment, omega total was .87 at Time 1 and .95 at Time 2. Taken together, these results provide evidence for good internal consistency.

Temporal Consistency

As discussed above, the three types of identity threat are not stable traits but rather more or less transient subjective experiences (Petriglieri, 2011). All the same, we would expect that the experience of identity threat in response to a relatively stable identity threat trigger should also be relatively stable. Therefore, we sought to

Table 4
Model Comparison for Confirmatory Factor Analyses (Stages 3–5)

Model	Stage	Time	χ^2	*df*	$\Delta\chi^2$	CFI	RMSEA	SRMR
Congeneric three-factor model	3	Time 1	732.71	149		.91	.09	.05
	3	Time 2	550.99	149		.94	.08	.04
	4	Time 1	318.32	149		.94	.08	.04
	4	Time 2	371.31	149		.92	.10	.04
	5		888.49	149		.87	.10	.06
One-factor model	3	Time 1	1,575.21	152	842.50***	.77	.14	.08
	3	Time 2	1,326.76	152	775.77***	.81	.14	.07
	4	Time 1	468.06	152	149.74***	.88	.11	.05
	4	Time 2	546.95	152	175.64***	.85	.13	.05
	5		1,689.70	152	801.21***	.74	.14	.09
Two-factor Model 1 (threat to identity value vs. else)	3	Time 1	1,102.82	151	370.11***	.85	.11	.06
	3	Time 2	861.33	151	310.34***	.89	.11	.06
	4	Time 1	428.45	151	110.13***	.89	.10	.05
	4	Time 2	477.40	151	106.09***	.88	.12	.05
	5		1,525.77	151	637.28***	.77	.13	.09
Two-factor Model 2 (threat to identity meanings vs. else)	3	Time 1	1,335.55	151	602.84***	.81	.13	.07
	3	Time 2	1,114.05	151	563.06***	.84	.12	.07
	4	Time 1	370.74	151	52.42***	.92	.09	.04
	4	Time 2	416.43	151	45.12***	.90	.11	.05
	5		1,045.97	151	157.48***	.85	.11	.07
Two-factor Model 3 (threat to identity enactment vs. else)	3	Time 1	1,147.69	151	414.98***	.84	.12	.06
	3	Time 2	960.24	151	409.25***	.87	.11	.06
	4	Time 1	389.44	151	71.12***	.91	.09	.04
	4	Time 2	489.17	151	117.86***	.88	.12	.05
	5		1,300.66	151	412.17***	.80	.12	.08

Note. In three-factor models, threat to identity value, meanings, and enactment are modeled as separate factors; Stage 3: Time 1 N = 500, Time 2 N = 426; Stage 4: Time 1 N = 186, Time 2 N = 157; Stage 5: N = 506. *df* = degrees of freedom; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standard mean square residual.
*** $p < .001$, two tailed.

establish to what extent threat to identity value, meanings, and enactment in response to perceptions of technological change were stable across two test administrations separated by a 2-week period.

We first examined the overall test–retest correlations (i.e., bivariate correlations between threat scales over time): These were .75, .76, and .71 for threat to identity value, threat to identity meanings, and threat to identity enactment, respectively. Such values indicate relative similarity in test-level scores across test administrations. Next, in line with DeSimone's (2015) recommendations, we inspected the results of a G-study and found that the proportion of variance attributable to the time-related components (e.g., the variance attributable to the person by time interaction) was moderate (see Table 5 in supplemental material D, for the full results), indicating the relevance of using the D^2_{ptc} technique to remove temporally inconsistent respondents before further analyses. D^2_{ptc} scores ranged from 0 to 40.61 ($M = 4.99$, $SD = 5.12$) for threat to identity value, from 0 to 43.98 ($M = 7.98$; $SD = 6.43$) for threat to identity meanings, and from 0 to 49.84 for threat to identity enactment ($M = 5.99$; $SD = 6.07$).

As per DeSimone's (2015) recommendations, we removed 107 respondents whose D^2_{ptc} score exceeded the χ^2 95% critical value for at least one of the scales, leaving a sample of 319 teachers to reassess temporal consistency. The subsequent overall test–retest correlations were .84, .84, and .79 for threat to identity value, threat to identity meanings, and threat to identity enactment, respectively. For threat to identity value, the item-level test–retest correlations were .73, .72, .67, .71, and .68. For threat to identity meanings, the item-level test–retest correlations were .67, .70, .67, .70, .73, .69, .64, and .65. For threat to identity enactment, the item-level test–retest correlations were .57, .58, .63, .66, .57, and .61. These values point to similarity in the test-level and item-level scores across our two test administrations. $SRMR_{TC}$ values of .03, .05, and .05 for threat to identity value, meanings, and enactment, respectively, are all below the .08 cutoff, indicating temporal consistency in item interrelationships (DeSimone, 2015). A component $loadings_{temporal\ consistency}$ (CL_{TC}) value of .63 for threat to identity meanings suggests relatively low temporal consistency in component loadings (taking the .70 cutoff point as reference, see DeSimone, 2015), which is in keeping with the potentially fluctuating nature of identity threat. CL_{TC} values of .75 and .78 for threat to identity value and threat to identity enactment, respectively, point to adequate temporal consistency in component loadings. The proportions of observed variance attributable to persons, items, time, and their interactions are reported in supplemental material D. The components involving time were associated with a relatively small proportion of variance. Taken together, these analyses indicate that our measures of threat to identity value, meanings, and enactment reliably capture these constructs across time and that the three types of threat are relatively temporally stable in this context.

Convergent Validity

Convergent validity refers to how closely related the focal construct is to theoretically linked constructs. Here, all three types of identity threat should relate to self-esteem, self-verification striving, identity suppression, and identification. As Table 3 shows, bivariate correlations between the three types of threat and these four

variables provide evidence for convergent validity. The three identity threat measures were negatively related to self-esteem and self-verification striving and positively related to identity suppression. The bivariate correlations between identification and the three types of identity threat were not significant. Overall, with the exception of identification, the correlations between identity threat measures and their theoretically linked constructs were significant and moderate (i.e., below |.50|), demonstrating convergent validity (Hinkin, 1998).

Discriminant Validity

We conducted three tests to assess discriminant validity. First, we ran a series of CFAs for each orbiting construct (self-esteem, self-verification striving, identity suppression, and identification), comparing the hypothesized four-factor model with the three threat scales and the respective orbiting construct loading onto separate factors to alternative models (one-factor model, two-factor models with the threat scales on one hand and the related construct on the other, and three separate three-factor models with the orbiting construct and a first type of threat loading onto one factor, the second type of threat loading onto another factor, and the third type of threat loading onto the last, to better assess how orbiting constructs relate to each threat type; see Table 5, for the detailed results). For all orbiting constructs, the four-factor models were preferable to the alternative models, providing evidence for discriminant validity.

Second, we employed the CI_{CFA} technique and inspected the 95% confidence intervals for every possible factor pair (e.g., threat to identity value and self-esteem), based on the four-factor models presented in Table 5. Discriminant validity is supported when the confidence interval for the factor correlation does not include the |.80| cutoff (Rönkkö & Cho, 2022). All the confidence intervals were strictly less than this cutoff, providing further evidence of the threat scales' discriminant validity (see supplemental material E for the full results).

Finally, we examined the bivariate correlations between the three identity threat scales and voluntary green behaviors. As expected, threat to identity value, meanings, and enactment at Time 1 did not correlate with voluntary green behaviors. Together, these results provide evidence for the threat scales' discriminant validity.[3]

Nomological Network

To examine the relationships of identity threat with the theorized antecedents (i.e., frequent change and transformational change) and outcomes (i.e., emotional exhaustion, identity exit intentions, and task proficiency), we ran a series of path models using MPlus 8.1 (see supplemental material F for the full modeling process in which we fit an initial model which we subsequently improved based on modification indices). The final model is shown in Figure 1 and fits the data very well, $\chi^2(df = 5) = 10.45$; CFI = 1.00; RMSEA = .05; SRMR = .02, providing evidence for nomological validity. Teachers who reported higher frequency of change also displayed higher levels of threat to identity value, threat to identity meanings, and threat to identity enactment. Teachers who reported higher levels of transformational change also displayed higher levels of threat to identity meanings and threat to identity enactment. Moreover, threat to identity value and threat to identity meanings were positively related to emotional exhaustion, threat to identity meanings and threat to identity enactment were positively related to identity exit intentions, and threat to identity enactment was negatively related to task proficiency.

Stage 4: Measures' Applicability to Other Work-Related Identities

Having validated our measures' psychometric properties and dimensionality in two samples of teachers and with a focus on threats to their professional identity as teachers, we next investigated the scales' applicability to other work-related identities. To do so, we evaluated the scales' psychometric properties in a different context: Threats to the role identity as a leader experienced by pregnant leaders.

Pregnant women often encounter workplace incivility (Gloor et al., 2018; Morgan et al., 2013) and unsupportive workplace norms (Little et al., 2018). Drawing on role congruity theory (Eagly & Karau, 2002), researchers have suggested that pregnant women in leadership positions receive hostile treatment (e.g., incivility, discrimination) because pregnancy evokes traditional feminine traits that are at odds with the more stereotypically masculine traits associated with leadership (Hebl et al., 2007). The incongruity between stereotypical traits associated with pregnancy and leadership may also render masculine workplace norms and other unsupportive workplace norms more salient for pregnant managers.

In turn, when women perceive that the norms of their organization are unsupportive of their pregnancy or when they are victims of workplace incivility because of their pregnancy, they can experience a threat to their leader identity (Ladge et al., 2012; Little et al., 2015, 2018; Paustian-Underdahl et al., 2019). Specifically, workplace incivility and masculine organizational norms may signal that pregnancy is viewed negatively in the work setting and this negative evaluation may carry over to the leader identity (see Little et al., 2015), effectively threatening the value of this identity (Little et al., 2018). Additionally, workplace incivility and masculine norms suggest that others at work view the woman primarily according to stereotypically feminine traits (e.g., being nurturing and emotional); this may threaten women's previous understandings of what it means to be a leader (Ladge et al., 2012; Little et al., 2015; Paustian-Underdahl et al., 2019). Workplace incivility and masculine norms may also make women more worried about their ability to enact their leader identity due to others' decreased perceptions of their competence (Arena et al., 2023). Pregnant leaders who feel threatened will be more likely to experience higher levels of burnout (Bedyńska & Żołnierczyk-Zreda, 2015), lower perceived task proficiency, and higher intentions to exit their leader identity (Petriglieri, 2011).

Participants and Procedure

Data collection was approved by the ESSEC Research Ethics Committee (sudy title: Pregnancy and leadership: Studying the work experiences of pregnant women whose job involves leadership duties). We recruited 195 pregnant women in leadership positions

[3] Beyond the results presented here, to better account for various sources of measurement error, we conducted a supplementary study with a separate third sample of teachers and ran three additional analyses as recommended by Shaffer et al. (2016) to further establish the discriminant validity of our scales. A detailed description of these analyses and the full results can be found in supplemental material G.

Table 5

Results of Chi-Square Difference Tests Between the Three Types of Threat and Orbiting Constructs (Stages 3 and 5)

Model comparisons Stage	Statistic	Orbiting construct: Self-esteem Stage 3	Self-esteem Stage 5	Self-verification striving Stage 3	Self-verification striving Stage 5	Identity suppression[a] Stage 3	Identity suppression[a] Stage 5	Identification Stage 3	Identification Stage 5
Four-factor model (threat to identity value, meanings, enactment, and orbiting construct modeled separately)	χ^2	1,403.55	1,501.26	1,091.62	1,222.93	883.6	1,056.68	812.53	993.97
	df	371	371	318	318	246	224	203	203
	CFI	.89	.88	.90	.87	.91	.89	.92	.88
	RMSEA	.08	.08	.07	.08	.07	.09	.08	.09
	SRMR	.06	.05	.05	.06	.05	.06	.05	.06
One-factor model	χ^2	4,207.6	4,699.52	2,986.11	3,017.38	2,512.76	3,050.97	2,494.62	2,494.49
	df	377	377	324	324	252	230	209	209
	CFI	.58	.52	.65	.63	.69	.62	.68	.65
	RMSEA	.14	.15	.13	.13	.13	.16	.15	.15
	SRMR	.14	.16	.12	.11	.10	.12	.10	.11
Two-factor model (all three types of threat loading on one factor, orbiting construct on the other)	χ^2	2,254.94	2,307.65	1,944	2,034.98	1,773.71	1,916.17	1,656.85	1,828.73
	df	376	376	323	323	251	229	208	208
	CFI	.79	.79	.78	.76	.79	.78	.80	.75
	RMSEA	.10	.10	.10	.10	.11	.12	.12	.12
	SRMR	.07	.07	.07	.07	.08	.09	.07	.09
Three-factor Model 1 (threat to identity value and orbiting construct loading on the first factor, threat to identity meanings, and enactment on the second and third)	χ^2	3,077.67	2,726.24	2,163.99	2,178.52	1,727.42	2,178.02	1,649.84	1,684.80
	df	374	374	321	321	249	227	206	206
	CFI	.70	.74	.76	.74	.80	.74	.80	.78
	RMSEA	.12	.11	.11	.11	.11	.13	.12	.12
	SRMR	.17	.16	.11	.10	.10	.10	.09	.10
Three-factor Model 2 (threat to identity meanings and orbiting construct loading on the first factor, threat to identity value, and enactment on the second and third)	χ^2	3,379.79	3,585.23	2,156.64	2,292.76	1,707.95	2,435.34	1,652.91	1,680.91
	df	374	374	321	321	249	227	206	206
	CFI	.67	.64	.76	.73	.80	.71	.80	.78
	RMSEA	.13	.13	.11	.11	.11	.14	.12	.12
	SRMR	.14	.19	.11	.11	.09	.12	.09	.10
Three-factor Model 3 (threat to identity enactment and orbiting construct loading on the first factor, threat to identity value, and meanings on the second and third)	χ^2	2,679.02	3,171.64	2,078.14	2,146.63	1,502.32	2,005.94	1,652.44	1,690.15
	df	374	374	321	321	249	227	206	206
	CFI	.75	.69	.77	.75	.83	.76	.80	.78
	RMSEA	.11	.12	.11	.11	.10	.12	.12	.12
	SRMR	.15	.17	.10	.10	.09	.10	.09	.09

Note. Stage 3: $N = 500$; Stage 5: $N = 506$. *df* = degrees of freedom; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standard mean square residual.

[a] Identity suppression was measured with five items in Stage 3, and with four items in Stage 5.

for a 20-min survey on Prolific for a compensation of £3. Of these, 186 passed all three attention checks and were included in the analyses. The mean age of respondents was 31.81 years ($SD = 4.87$). Participants had been working in their current organization for 5.47 years ($SD = 3.30$) and had an average of 9.93 direct reports ($SD = 16.04$). On average, women were 22 weeks pregnant ($SD = 9.82$), and the majority (90.9%) were not yet on maternity leave. One hundred sixty-four respondents also completed a second shorter survey 2 weeks later and received £2.25 for their participation. Of these, 157 passed all three attention checks and were retained in the final sample.

Measures

All the measures described below were included in both surveys. Unless otherwise noted, participants responded to all the below items on a 5-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Supplemental material A presents instructions and items. Table 6 shows Cronbach's α coefficients.

Identity Threat. Participants rated the 19 items developed in Stages 1 and 2 to capture the three types of identity threat, prefaced by the item stem "Since becoming pregnant …" Across items, we replaced "teacher" with "leader" (see Table 2).

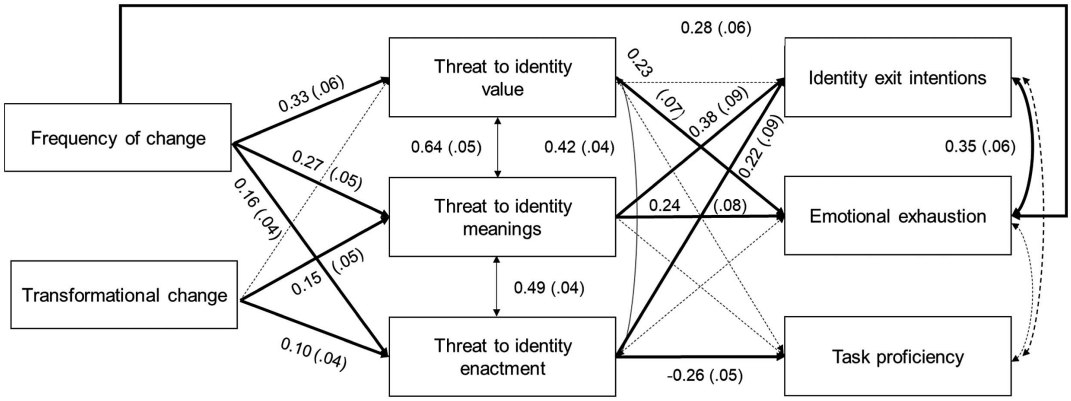
Orbiting Constructs. Self-esteem, self-verification striving, identity suppression, and identification were assessed with the same measures as in Stage 3. Where items explicitly referred to a particular identity, we replaced "teacher" with "leader."

Workplace Incivility. To measure the first potential antecedent to leader identity threat, we employed L. M. Cortina et al.'s (2001) seven-item workplace incivility scale as used by Gloor et al. (2018) in the pregnancy context. Participants reported how often, since being pregnant, they had experienced a situation where any of their supervisors or coworkers had displayed incivility (e.g., put them down or was condescending to them), on a scale ranging from 0 = *never* to 4 = *many times*.

Workplace Norms. To capture workplace norms that may be threatening to pregnant leaders, another potential antecedent to identity threat, we used Glick et al.'s (2018) masculinity contest culture measure which captures the extent to which the organization values an ideal worker image that is based on stereotypically masculine traits. As pregnancy is inconsistent with this ideal worker image, this feature of organizational culture can cause pregnant women to feel threatened (Paustian-Underdahl et al., 2019). A

Figure 1

Path Analysis Model of Threat to Identity Value, Meanings, and Enactment and Their Nomological Network—Final Model (Stage 3, Teachers)



Note. Numbers shown are unstandardized path estimates. Numbers in parentheses are standard errors. Nonsignificant paths included in the model are shown as dashed lines. Full model results are shown in supplemental material F.

sample item is "In my work environment admitting you don't know the answer looks weak."

Identity Exit Intentions. To assess pregnant women's intentions to exit their leader identity, we adapted Barthauer et al.'s (2020) measure of career turnover intentions into a three-item measure including "I frequently think about abandoning my leadership role."

Other Outcomes. Task proficiency and emotional exhaustion were assessed with the same measures as in Stage 3.

Confirmatory Factor Analysis Results

We examined the factor structure of the identity threat measures using confirmatory factor analyses. The hypothesized model in which threat to identity value, threat to identity meanings, and threat to identity enactment loaded onto three separate factors showed an acceptable fit with the data, Time 1: $\chi^2(149) = 318.32$; CFI = .94; RMSEA = .08; SRMR = .04; Time 2: $\chi^2(149) = 371.31$; CFI = .92; RMSEA = .10; SRMR = .04, and a significantly better fit than other models (see Table 4).

Internal Consistency

The α coefficients for the identity threat measures ranged between .89 and .94 across the two time points (see Table 6). Omega total was .90 (Time 1) and .92 (Time 2) for threat to identity value, .92 (Time 1) and .95 (Time 2) for threat to identity meanings, and .91 (Time 1) and .91 (Time 2) for threat to identity enactment. Together, these results indicate good internal consistency.

Temporal Consistency

To evaluate our scales' temporal consistency, we followed the same steps as in Stage 3 (DeSimone, 2015). Because the progression of pregnancy can alter the exposure to and experience of identity threat triggers even within 2 weeks, identity threat likely varies more over time in this context than in the context of our Stage 3 temporal consistency analysis. However, given the relatively short time frame, we expected at least moderate temporal consistency of identity threat between measurement occasions.

We first assessed the overall test–retest correlations: These were .63, .70, and .66 for threat to identity value, meanings, and enactment, respectively, reflecting relative similarity in test-level scores across the two time points. We next examined the results of a G-study and found that the proportion of variance attributable to the time-related components was relatively high (see Table 6 in supplemental material D, for the full results). In line with DeSimone's (2015) recommendations, we thus used the D^2_{ptc} technique to remove temporally inconsistent respondents before further analyses. D^2_{ptc} scores ranged from 0 to 35.90 ($M = 4.97$, $SD = 6.05$) for threat to identity value, from 0 to 37.56 ($M = 7.95$; $SD = 7.12$) for threat to identity meanings, and from 0 to 24.86 for threat to identity enactment ($M = 5.96$; $SD = 5.91$).

As per DeSimone's (2015) recommendations, we removed 49 respondents whose D^2_{ptc} score exceeded the χ^2 95% critical value on any of the three scales, leaving a sample of 108 leaders to reassess temporal consistency. The subsequent overall test–retest correlations were .78, .82, and .79 for threat to identity value, threat to identity meanings, and threat to identity enactment, respectively. For threat to identity value, the item-level test–retest correlations were .72, .54, .64, .62, and .67. For threat to identity meanings, they were .57, .78, .71, .70, .69, .67, .59, and .59. For threat to identity enactment, they were .63, .70, .59, .64, .69, and .68. These results point to similarity in the test-level and item-level scores across the two time points. $SRMR_{TC}$ values of .05 and .04 for threat to identity meanings and enactment indicate temporal consistency in item interrelationships, while the $SRMR_{TC}$ value of .09 for threat to identity value slightly exceeds the .08 cutoff (DeSimone, 2015). CL_{TC} values of .13, .41, and .60 for threat to identity value, meanings, and enactment, respectively, all point to low temporal consistency in component loadings. The proportions of observed variance attributable to persons, items, time, and their interactions are reported in supplemental material D. The components involving time were associated with a relatively small proportion of variance. Taken together, these analyses indicate that the three types of threat are moderately stable over time in this context.

Table 6

Descriptive Statistics, Cronbach's α, and Correlations of Variables (Stage 4, Pregnant Leaders)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1. Age	31.81	4.87	—																								
2. T1 threat to identity value	1.97	0.86	−.17	(.90)																							
3. T1 threat to identity meanings	2.16	0.93	−.16	.80	(.92)																						
4. T1 threat to identity enactment	2.14	0.96	−.14	.80	.77	(.91)																					
5. T1 self-esteem	3.89	0.71	.11	−.36	−.40	−.42	(.88)																				
6. T1 self-verification striving	4.00	0.62	−.02	−.12	−.13	−.21	.38	(.83)																			
7. T1 identity suppression	2.72	0.84	.00	.13	.16	.14	−.40	−.19	(.83)																		
8. T1 identification	3.75	0.92	.07	.02	.01	−.01	.18	.24	−.25	(.88)																	
9. T1 incivility	1.65	0.78	−.20	.56	.48	.43	−.27	−.15	.13	.06	(.91)																
10. T1 workplace norms	2.17	0.88	−.10	.49	.46	.43	−.23	−.16	.09	.32	.55	(.86)															
11. T1 emotional exhaustion	3.22	1.34	−.04	.38	.38	.44	−.42	−.31	.19	−.09	.39	.40	(.94)														
12. T1 task proficiency	4.32	0.71	−.01	−.16	−.21	−.20	.28	.28	−.31	.10	−.02	−.08	−.15	(.90)													
13. T1 identity exit intentions	2.08	1.17	.00	.44	.47	.46	−.29	−.21	.03	−.10	.29	.34	.46	−.09	(.89)												
14. T2 threat to identity value	2.10	0.97	−.09	.63	.59	.54	−.48	−.33	.28	−.01	.50	.55	.48	−.24	.43	(.92)											
15. T2 threat to identity meanings	2.28	1.00	−.16	.57	.70	.59	−.49	−.30	.15	−.07	.47	.49	.38	−.19	.46	.81	(.94)										
16. T2 threat to identity enactment	2.24	0.99	−.03	.56	.58	.66	−.50	−.35	.26	−.03	.42	.48	.49	−.25	.44	.82	.81	(.91)									
17. T2 self-esteem	3.87	0.75	.06	−.35	−.39	−.37	.85	.33	−.38	.16	−.28	−.28	−.38	.27	−.24	−.47	−.50	−.53	(.90)								
18. T2 self-verification striving	4.01	0.66	−.01	−.20	−.13	−.19	.31	.68	−.20	.11	−.17	−.09	−.17	.28	−.15	−.26	−.20	−.31	.35	(.84)							
19. T2 identity suppression	2.79	0.81	.08	.14	.20	.15	−.42	−.21	.59	−.26	.12	.09	.22	−.17	.20	.21	.14	.21	−.42	−.17	(.90)						
20. T2 identification	3.68	0.94	−.07	.06	.03	−.01	.21	.28	−.14	.73	.14	.28	−.10	.12	−.15	.04	−.01	−.00	.20	.23	−.24	(.88)					
21. T2 incivility	1.63	0.71	−.09	.49	.48	.42	−.38	−.31	.21	.07	.67	.46	.41	−.13	.37	.58	.52	.58	−.41	−.31	.20	.09	(.92)				
22. T2 workplace norms	2.22	0.91	−.06	.42	.40	.39	−.27	−.21	.13	.20	.49	.75	.42	−.11	.45	.60	.52	.54	−.32	−.20	.19	.14	.60	(.87)			
23. T2 emotional exhaustion	3.11	1.36	−.06	.30	.31	.37	−.33	−.31	.21	−.08	.38	.44	.73	−.21	.47	.51	.42	.50	−.36	−.19	.20	−.09	.45	.54	(.94)		
24. T2 task proficiency	4.27	0.72	.01	−.19	−.17	−.19	.44	.32	−.40	.07	−.10	−.09	−.19	.48	−.05	−.26	−.21	−.26	.42	.34	−.23	.07	−.22	−.10	−.15	(.90)	
25. T2 identity exit intentions	2.21	1.18	−.12	.35	.42	.33	−.25	−.16	.09	−.12	.40	.38	.39	−.11	.76	.49	.52	.48	−.27	−.09	.14	−.13	.43	.47	.53	−.08	(.90)

Note. For all T1 variables, $N = 186$. For all T2 variables, $N = 157$. For all pairs not involving T2 measures, correlations ≥ |.15| are $p < .05$ and correlations ≥ |.20| are $p < .01$. For all pairs involving T2 threat measures, correlations ≥ |.16| are $p < .05$ and correlations ≥ |.21| are $p < .01$. Cronbach's α are in parentheses. Supplemental material H presents the correlation table with all the demographics described in Stage 4. T = time.

Convergent Validity

We examined bivariate correlations between the three types of threat and the four orbiting constructs at the two points in time, finding evidence for acceptable convergent validity (Hinkin, 1998). Of a total of 48 correlations, 27 were significant (see Table 6). Again, the correlations between the three types of threat and identification were not significant. The remaining correlations not involving identification ranged between |.16| and |.53|.

Nomological Network

To examine the relationships of identity threat with the theorized antecedents (i.e., workplace incivility and workplace norms) and outcomes (i.e., emotional exhaustion, identity exit intentions, and task proficiency), we ran a series of path models with the antecedents (assessed at Time 1) predicting the three types of identity threat (assessed at Time 2), and the three types of identity threat predicting Time 2 outcomes (see supplemental material F for the full modeling process). Results provide evidence for nomological validity, $\chi^2(6) = 13.11$; CFI = .99; RMSEA = .09; SRMR = .04. As shown in Figure 2, women who reported higher levels of incivility and higher levels of unsupportive workplace norms also experienced higher levels of threat to identity value, meanings, and enactment. Moreover, threat to identity value and threat to identity enactment were positively related to exhaustion, and threat to identity meanings was positively related to identity exit intentions. None of the three threat types were significantly related to task proficiency.

Stage 5: Measures' Applicability to Nonwork Identities

Having demonstrated our measures' applicability to two work-related identities, in Stage 5, we investigated the scales' appropriateness to capture threats to nonwork identities, that is, identities not tied to participation in work activities, teams, organizations, and occupations (Ramarajan & Reid, 2013). Examples of nonwork identities include parental roles, ethnicity, and sexual orientation. Using qualitative methods, researchers have explored how workplace experiences can threaten the value (e.g., Prokos & Padavic, 2002), meanings (e.g., Ashcraft, 2005), and enactment (e.g., Dahm et al., 2019) of various nonwork identities.

Incorporating insights from quantitative and qualitative research, we studied how workplace values and discrimination can threaten lesbian, gay, bisexual, transgender, queer or questioning (LGBTQ) individuals' identity and subsequently impact affective, behavioral, and cognitive outcomes. Evidence abounds that LGBTQ individuals are regularly discriminated against in the workplace, be it overtly or subtly (Lyons et al., 2020; Mohr et al., 2019; Ragins et al., 2007). Workplace values that denigrate nonheterosexual individuals (e.g., heterosexism; Resnick & Galupo, 2019), microaggressions, and workplace discrimination, can, in turn, result in threats to LGBTQ identity (Breakwell & Jaspal, 2022).

As in Stages 3 and 4, in addition to variables capturing potential triggers of threat, we included measures of exhaustion and task proficiency to assess threat outcomes. However, we did not gauge identity exit intentions because, like other demographic identities (Clair et al., 2019), LGBTQ identities cannot easily be left. Instead, we assessed organizational turnover intentions, another proposed outcome of threat (Trevor & Nyberg, 2008).

Participants and Procedure

Data collection was approved by the ESSEC Research Ethics Committee (Study Title: Workplace experiences of LGBTQ individuals). We recruited 516 individuals who identified as members of the LGBTQ community for a 15-min survey on Prolific for a compensation of £2.5. Of these, 506 passed all three attention checks. Out of 506 participants, 58.9% identified as bisexual, 15.2% as lesbian, 11.5% as gay, and the remaining individuals identified as questioning, queer, asexual, pansexual, transgender, nonbinary, or a combination of labels. Within the sample, 70.0% of respondents identified as female or as a cis woman, 23.3% identified as male or as a cis man, 3.3% identified as nonconforming, 1.8% identified as transgender, and the remaining participants identified as nonbinary, or chose to provide their own label. Respondents worked in a range of sectors, such as the arts and education (16.8%), business-related services (15.8%), health care (14.2%), information technology (5.9%), and hospitality (5.7%). The average age of participants was 30.63 years ($SD = 8.44$), and the average organizational tenure was 3.78 years ($SD = 4.46$).

Measures

Unless otherwise noted, participants responded to all the below items on a 5-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Items and instructions can be found in supplemental material A. Table 7 shows Cronbach's α coefficients.

Identity Threat. Participants rated the 19 identity threat items prefaced by the instruction to indicate how they relate to their LGBTQ identity at work. We replaced "teacher" with "LGBTQ" or "identity as LGBTQ" in all items.

Orbiting Constructs. Self-esteem, self-verification striving, and identification were assessed with the same measures as in Stage 3. Where items explicitly referred to a particular identity, we replaced "teacher" with "LGBTQ."

Identity Suppression. To gauge identity suppression, we employed four items from Madera et al.'s (2012) scale, as not all the items used in Stages 3 and 4 were adapted to this context. A sample item is "I refrain from talking about my identity as LGBTQ at work."

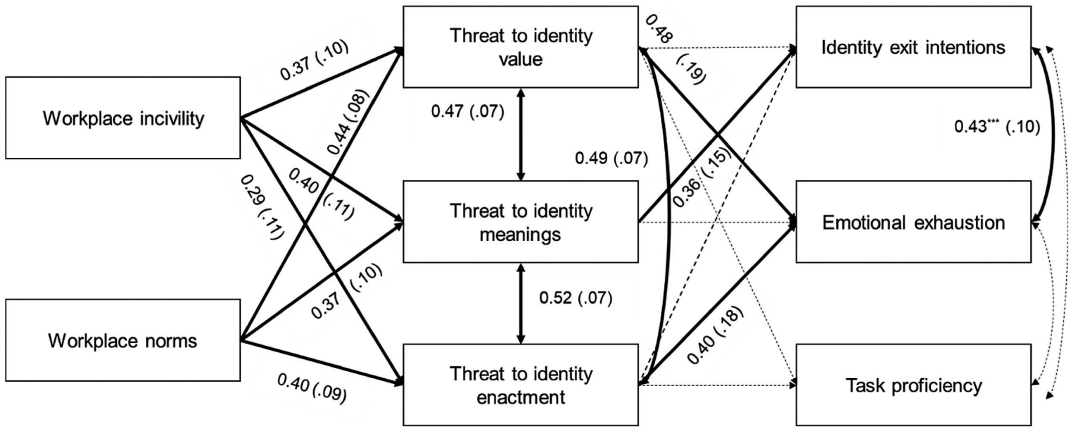
Workplace Microaggressions. The first antecedent we measured was LGBTQ individuals' microaggression experiences. We used 11 items from Resnick and Galupo's (2019) workplace values subscale which pertains to their microaggression experiences at work scale. This subscale captures experiences of microaggressions that are related to the organization's values and norms. Participants indicated, on a scale from 1 = *never* to 5 = *a great deal*, how often they had experienced microaggressions during the past 12 months at work, such as "Not getting paid as much because of [their] LGBTQ identity," and "Having [their] behaviors mimicked in a joking way due to [their] LGBTQ identity."

Workplace Discrimination. Following Ragins and Cornwell (2001), we modified the workplace discrimination inventory to measure another potential antecedent to LGBTQ identity threat (James et al., 1994). We chose items that were suitable to our context and eliminated redundant items, resulting in seven items including, for example, "At work, I have sometimes been unfairly singled out because I identify as LGBTQ."

Turnover Intentions. We measured turnover intentions (Mobley et al., 1978) with three items, including "I often think about leaving my current employer."

Figure 2

Path Analysis Model of Threat to Identity Value, Meanings, and Enactment and Their Nomological Network—Final Model (Stage 4, Pregnant Leaders)



Note. Numbers shown are unstandardized path estimates. Numbers in parentheses are standard errors. Nonsignificant paths included in the model are shown as dashed lines. Full model results are shown in supplemental material F.

Other Outcome Variables. Task proficiency and emotional exhaustion were assessed with the same measures as in Stage 3.

Employee's Voluntary Green Behaviors. As in Stage 3, we measured employees' voluntary green behaviors (Norton et al., 2017) to assess discriminant validity.

Confirmatory Factor Analysis Results

We verified the factor structure of the identity threat measures using confirmatory factor analyses. There was mixed support for the fit of our hypothesized three-factor model with the data, $\chi^2(149) = 888.49$; CFI = .87; RMSEA = .10; SRMR = .06. However, the hypothesized model fit significantly better than other models (see Table 4).

Internal Consistency

The α coefficients for the identity threat measures ranged between .84 and .91. Omega total was .85, .91, and .89 for threat to identity value, meanings, and enactment, respectively. These results indicate good internal consistency.

Convergent Validity

As in Stages 3 and 4, we examined the correlations between the three types of threat and our orbiting constructs. Results provide evidence for convergent validity. Of the 12 correlations, 10 were significant and in the expected direction, ranging between |.11| and |.54| (see Table 7). The exceptions were the correlation between threat to identity enactment and identification which was not significant and the correlation between threat to identity meanings and identification, which was significant, but in the opposite direction (negative).

Discriminant Validity

As in Stage 3, we conducted three tests to assess discriminant validity. First, we ran a series of CFAs with chi-square difference tests. For all four orbiting constructs, a four-factor model (three identity threat types and orbiting construct) was preferable to the alternative models, illustrating discriminant validity (see Table 5, for the detailed results).

Second, we used the CI_{CFA} technique and examined the 95% confidence intervals for every possible factor pair (e.g., threat to identity value and self-esteem), based on the four-factor models presented in Table 5. All the confidence intervals were strictly less than the |.80| cutoff (Rönkkö & Cho, 2022), providing additional evidence of the identity threat scales' discriminant validity (see supplemental material E, for a table with the full results).

Finally, as expected, threat to identity value, meanings, and enactment did not correlate with voluntary green behaviors. Together, these results provide evidence for the threat scales' discriminant validity.

Nomological Network

To examine the relationships of identity threat with the antecedents and outcomes, we estimated a series of path models (see supplemental material F for the full modeling process). The final model shown in Figure 3 fit the data well, $\chi^2(5) = 24.11$; CFI = .99; RMSEA = .09; SRMR = .04, providing evidence for nomological validity. As Figure 3 shows, LGBTQ individuals reporting more discrimination experienced higher levels of threat to identity value, meanings, and enactment. Similarly, LGBTQ employees reporting higher levels of microaggressions also experienced higher levels of threat to identity value. Additionally, threat to identity value was positively related to exhaustion and threat to identity enactment to turnover intention. None of the three threat types were associated with task proficiency.

Stage 6: Moderating Influence of Frequent Exposure to Threat Trigger

In Stage 6, our goal was to demonstrate that the scales can be used to test models that have previously been proposed but not yet examined. We chose to investigate the moderating role of frequent exposure to the potential threat trigger in the relationship between the three types of

Table 7

Descriptive Statistics, Cronbach's α, and Correlations of Variables (Stage 5, LGBTQ Organizational Members)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	30.63	8.44	—													
2. Threat to identity value	2.15	0.95	.04	(.84)												
3. Threat to identity meanings	2.10	0.94	.09	.63	(.91)											
4. Threat to identity enactment	2.17	1.01	.02	.73	.60	(.89)										
5. Self-esteem	3.44	0.85	.11	−.26	−.21	−.31	(.92)									
6. Self-verification striving	3.75	0.67	−.04	−.23	−.17	−.29	.25	(.81)								
7. Identity suppression	3.13	1.18	.00	.35	.26	.54	−.24	−.32	(.91)							
8. Identification	3.57	1.01	−.05	.11	−.13	.04	−.03	.18	−.16	(.83)						
9. Workplace discrimination	1.84	0.80	.09	.58	.30	.50	−.22	−.15	.22	.20	(.88)					
10. Workplace microagressions	1.24	0.50	.01	.41	.24	.24	−.06	.00	−.01	.18	.58	(.91)				
11. Turnover intentions	2.61	1.40	−.01	.28	.16	.29	−.21	−.14	.22	−.02	.41	.25	(.93)			
12. Emotional exhaustion	3.31	1.36	−.04	.35	.20	.30	−.36	−.16	.26	.05	.37	.23	.62	(.93)		
13. Task proficiency	4.38	0.73	.01	−.07	−.07	−.11	.22	.15	−.07	.02	−.03	.05	−.09	−.13	(.92)	
14. Green behaviors	3.44	1.07	−.05	−.09[a]	−.08	−.06	.15	.22	−.02	.06	−.01	.06	−.07	−.14	.13	(.96)

Note. $N = 506$. Correlations ≥ |.90| are $p < .05$ with the exception of [a] the correlation between variables 2 and 14 ($r = .085$, $p = .055$). All correlations ≥ |.13| are $p < .01$. Cronbach's α are in parentheses. Supplemental material H presents the correlation table with all the demographics described in Stage 5. LGBTQ = lesbian, gay, bisexual, transgender, queer or questioning.

identity threat and threat outcomes, as proposed by Petriglieri (2011). She suggested that when exposure to the potential trigger of threat is frequent, individuals experiencing threat are less likely to discount it as an anomaly. We argue that, therefore, they will be more likely to feel distressed and exhausted, to experience task proficiency decrements, and to engage in identity-restructuring responses such as forming intentions to exit the identity by changing jobs or occupations.

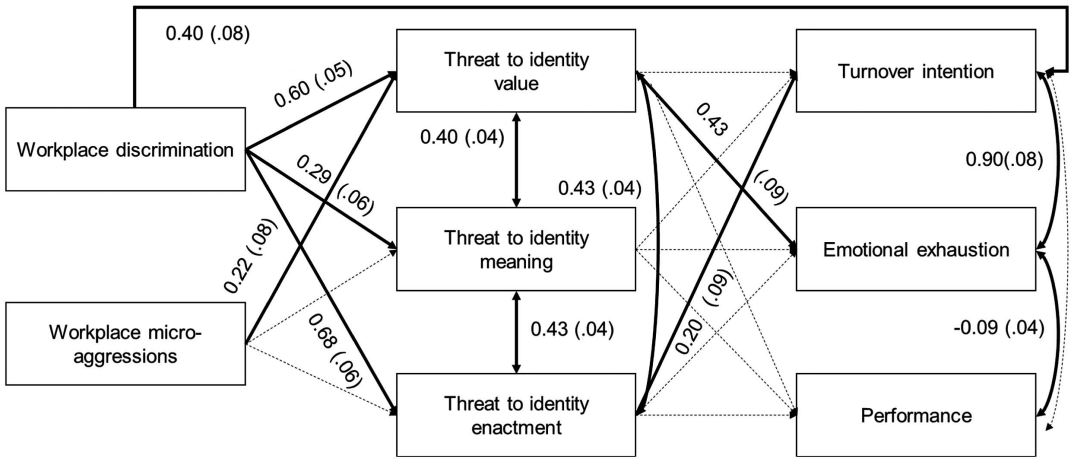
Specifically, we investigated whether frequent online teaching during the COVID-19 pandemic in Spring 2020 amplified the effects of initial threat perceptions (before the pandemic; Time 1) on our three affective, behavioral, and cognitive outcomes (5 months later, during the pandemic). Due to the pandemic, in Spring 2020, schools and higher education institutions closed in many countries, forcing educators to move their teaching online (Aperribai et al., 2020; König et al., 2020), exposing them to the very technological change that can potentially threaten their identity as a teacher. This context therefore presented an opportunity to test the moderation hypothesis described above.

Participants and Procedure

Data collection was approved by the ESSEC Research Ethics Committee (study title: Technology as a Threat to Teachers' Professional Identity: A Longitudinal Study). We invited the 500 teachers who took our Stage 3 survey (in November 2019) to participate in another survey in April 2020 for a compensation of £3.4. Of the initial 500 participants, 362 took this survey. We excluded 12 participants who failed one or more of our three attention checks, resulting in a final sample of 350 (106 [30.3%] male, 244 [69.7%] female). Average age was 39.59 years (*SD* =

Figure 3

Path Analysis Model of Threat to Identity Value, Meanings, and Enactment and Their Nomological Network—Final Model (Stage 5, LGBTQ Organizational Members)



Note. Numbers shown are unstandardized path estimates. Numbers in parentheses are standard errors. Nonsignificant paths included in the model are shown as dashed lines. Full model results are shown in supplemental material F.

11.10), and average organizational tenure was 8.34 years (*SD* = 7.07). Of the participants, 22.9% were elementary school teachers, 6.9% were middle school teachers, 19.7% were high school teachers, 19.7% were college/university professors or lecturers, and 25.4% people held other teaching-related jobs.

Measures

Threat to identity value, meanings, and enactment was assessed with our measures of identity threat, as specified in Stages 2 and 3, at Time 1. Five months later, we surveyed teachers' frequency of exposure to online teaching during COVID-19, their prior experience teaching online, and their emotional exhaustion, task proficiency, and identity exit intentions, with the same measures used in Stage 3. Table 8 shows Cronbach's α for the measures. Omega total in this subsample was .92, .93, and .91 for threat to identity value, meanings, and enactment respectively.

Frequency of Online Teaching During COVID-19. We asked teachers to report how frequently they used technology in their teaching in the past few weeks on a 5-point Likert scale (1 = *never*, 5 = *very frequently*). We included four items capturing the breadth of technology-enabled teaching activities during the COVID-19 pandemic (Lee et al., 2022): "used technology to communicate with students (e.g., sending email updates or meeting virtually)," "used e-learning platforms to deliver content to students (e.g., uploading study materials or assignments)," "recorded video lectures," and "taught online in real time (for example, delivering a 'live' online lecture or facilitating a 'live' discussion online)."

Control Variables. Since higher education instructors were more exposed to online teaching than others during the COVID-19 pandemic (United Nations, 2020), we controlled for teaching job (i.e., elementary school teachers, middle school teachers, high school teachers, college/university professors or lecturers, and other teaching-related jobs). Additionally, we controlled for previous experience using technology in teaching practice. We reasoned that the pandemic and the resulting move to online teaching would be less surprising and would require less sensemaking for teachers with more previous experience teaching online. We captured prior experience with online teaching using the same four items and scale as above but asking teachers to report how frequently they had used technology in their teaching practice before the COVID-19 pandemic.

Results

Table 8 presents the descriptive statics, reliability, and correlations. We tested our model using a series of regression-based path analyses in MPlus 8.1, based on guidelines by Hayes (2018) and following Stride et al. (2015). For better interpretability, identity threat variables and frequency of online teaching were mean centered prior to calculating interaction terms. As expected, in the model predicting emotional exhaustion, the interaction term between frequency of exposure to online teaching and threat to identity enactment was significant (see Table 9). Figure 4 shows the pattern of the interaction. To further probe this interaction, we conducted a simple slope analysis on lower (1 *SD* below the mean) and higher (1 *SD* above the mean) frequency of exposure to online teaching. We found that the relationship between threat to identity enactment and emotional exhaustion was significant only for teachers who were more frequently exposed to online teaching (simple effect: $b = .55$, $p = .002$), but not if they were less frequently exposed to online teaching (simple effect: $b = -.16$, $p = .34$). In other words, teachers who felt that the introduction of technology threatened the enactment of their teacher identity prior to the COVID-19 pandemic were more likely to experience higher levels of emotional exhaustion when they frequently had to teach online during the COVID-19 pandemic. We neither found significant interactions between the other two types of threat and frequency of exposure to online teaching on emotional exhaustion nor did we find significant interactions in the models predicting task proficiency and intention to exit the teacher identity.

These results demonstrate the usefulness of our scales in testing relationships proposed in the identity threat literature. Specifically, we found initial support for the proposition that frequent exposure to a threat may exacerbate the relationship between identity threat and its outcomes.

Discussion

Even though identity threats have attracted scholarly attention for their pervasiveness, the absence of an established measure has stymied the advancement of this research field. To address this issue and stimulate research into untested and poorly understood aspects of identity threats, we developed and validated three measures gauging individuals' perceptions of threat to identity value, meanings, and enactment. The development and validation of scales capturing the

Table 8

Descriptive Statistics, Cronbach's α, and Correlations of Variables (Stage 6, Moderation)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Age	39.59	11.08	—								
2. Frequency of online teaching during COVID-19	3.23	1.15	−.08	(.79)							
3. Frequency of online teaching before COVID-19	2.04	0.90	.05	.49	(.77)						
4. Threat to identity value T1	2.41	1.06	.07	−.01	−.01	(.92)					
5. Threat to identity meaning T1	2.61	1.04	.08	.01	−.00	.77	(.93)				
6. Threat to identity enactment T1	1.90	0.80	.02	.01	.04	.63	.75	(.91)			
7. Identity exit intentions T2	2.32	1.20	.06	−.11	−.02	.29	.34	.35	(.92)		
8. Emotional exhaustion T2	3.30	1.28	−.06	.03	.02	.33	.32	.30	.42	(.95)	
9. Task proficiency T2	3.61	0.86	−.05	.19	.10	−.11	−.14	−.17	−.08	−.08	(.93)

Note. $N = 350$. Correlations ≥ |.11| are $p < .05$ and correlations ≥ |.16| are $p < .01$. Cronbach's α are in parentheses. Supplemental material H presents the correlation table with all the demographics described in Stage 6. T = time.

Table 9

Regression-Based Moderated Path Analysis of Affective, Behavioral, and Cognitive Outcomes (Stage 6, Teachers)

Variable	Intention to exit teacher identity		Emotional exhaustion		Task proficiency	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Control variables						
Prior experience online teaching	.06 (.09)	.04 (.09)	.05 (.08)	.04 (.08)	.04 (.06)	.04 (.06)
Job dummy 1[a]	.07 (.19)	.03 (.19)	.77 (.18)***	.75 (.18)***	.04 (.14)	.05 (.14)
Job dummy 2[b]	.12 (.27)	.05 (.27)	.36 (.29)	.32 (.30)	.05 (.22)	.04 (.23)
Job dummy 3[c]	−.11 (.18)	−.10 (.18)	.46 (.20)*	.47 (.20)*	−.13 (.14)	−.12 (.14)
Job dummy 4[d]	.06 (.18)	.07 (.17)	.43 (.19)*	.41 (.18)**	−.33 (.12)	−.12 (.12)
Independent variables						
Frequency of online teaching (during COVID-19)	−.15 (.06)*	−.14 (.06)*	−.00 (.07)	.01 (.07)	.14 (.05)**	.14 (.05)**
Threat to identity value	.06 (.10)	.06 (.10)	.21 (.10)*	.20 (.10)*	.02 (.08)	.02 (.08)
Threat to identity meanings	.17 (.11)	.18 (.11)	.12 (.11)	.12 (.12)	−.04 (.08)	−.04 (.08)
Threat to identity enactment	.30 (.12)*	.29 (.12)*	.20 (.12)	.20 (.12)	−.17 (.08)*	−.16 (.08)*
Interaction terms						
Threat to Identity Value × Frequent Online Teaching		.09 (.09)		−.08 (.09)		−.02 (.07)
Threat to Identity Meanings × Frequent Online Teaching		−.12 (.10)		−.03 (.11)		−.06 (.08)
Threat to Identity Enactment × Frequent Online Teaching		.18 (.10)		.31 (.11)**		.09 (.08)
Intercept	1.51 (.28)***	2.31 (.12)***	1.61 (.27)***	2.90 (.12)***	3.47 (.21)***	3.65 (.09)***
R^2	.16***	.17***	.17***	.20***	.07*	.08*

Note. $N = 350$. Standard errors are in parentheses.
[a] Coded 1 = elementary school teacher, 0 = other. [b] Coded 1 = middle school teacher, 0 = other. [c] Coded 1 = high school teacher, 0 = other. [d] Coded 1 = university/college lecturer or professor, 0 = other.
* $p < .05$. ** $p < .01$. *** $p < .001$.

three types of identity threat answers a longstanding call for rigorously tested and standardized measurements of this ubiquitous experience (Petriglieri, 2011). In departure from existing context-specific scales, our measures were designed for adaptability to different identities and different research contexts.

Theoretical Implications

The research described in this article contributes to a better theoretical and empirical understanding of identity threat. Most fundamentally, the development of three identity threat scales allows for greater knowledge accumulation about this important organizational phenomenon. At present, scholars are using a variety of scales that are often idiosyncratic to the context (e.g., the heterosexual identity threat scale, Lyons et al., 2020) or scales that were originally developed to measure other constructs (e.g., the adapted Workplace Harassment scale, Aquino & Douglas, 2003). As such, it is difficult to compare results across studies, meaning that what we know about identity threat is fragmented and later works are not always building directly on earlier works. Our scales will enable scholars to easily compare findings from different contexts and expedite the accumulation of knowledge around identity threat.

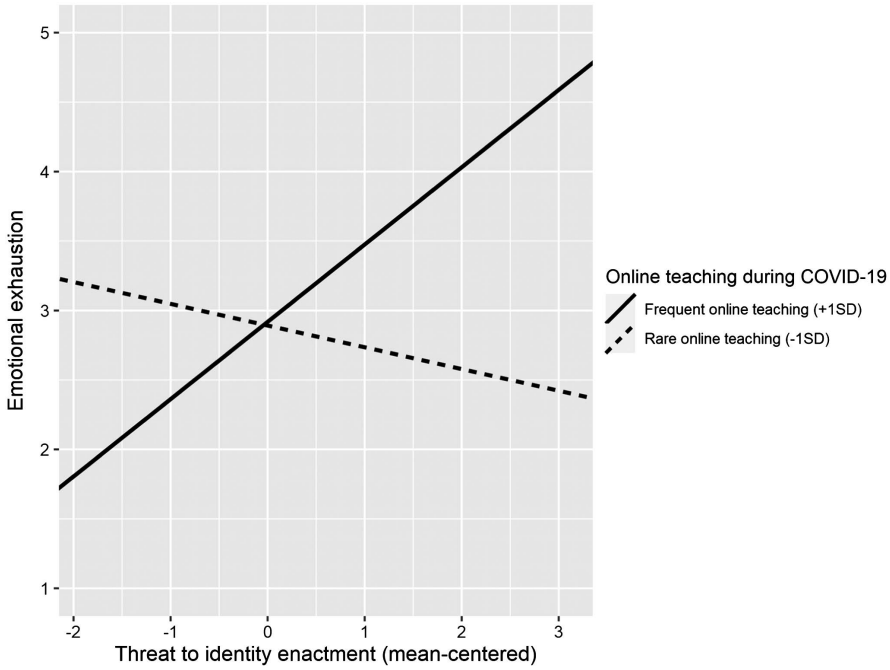
To this point, our work also contributes to greater construct clarity by showing that identity threat differs from self-esteem, self-verification striving, identity suppression, and identification. As identity continues to be a popular topic of research in management and applied psychology, it is important that we avoid the proliferation of terms and that we build a solid understanding of how the construct measures that we use relate to one another (Caza, Vough, & Puranik, 2018). By differentiating the three types of identity threat from other identity-related constructs, we illustrate that identity threat plays its own unique role in relation to other identity processes.

Further, in providing empirical evidence for the relationship between identity threat and theoretically relevant antecedents and outcomes, this research represents a first rigorous validation of existing theories and qualitative insights. With few exceptions (e.g., stereotype threat experiments and studies that deploy context-specific scales), the considerable body of research focusing on identity threat has offered propositions that have largely remained untested. Using our measures, we established that transformational and frequent technological change, workplace incivility, workplace norms, discrimination, and microaggressions were related to identity threat and, in turn, threat-predicted emotional exhaustion, task proficiency decrements, intentions to exit the threatened identity, and intentions to exit the organization. Additionally, our results provide support for the moderating role of frequent exposure to the potential trigger of threat in the relationship between threat to identity enactment and emotional exhaustion. This evidence for identity threat's nomological network provides a point of departure for more theory testing and a jumping-off point for future research on the role identity threat plays in organizational settings.

In addition to now being able to measure identity threat in general, our scales also allow us to get into some important nuances around identity threat. Building on Petriglieri's (2011) framework, we delineated clear definitions of the three types of threat and empirically demonstrated that these are three separate variables. This is important because, as our studies have shown, these different types of threat may occur under different circumstances and have varying implications for outcomes. This suggests a need for more

Figure 4

Interaction Between Threat to the Enactment of One's Teacher Identity (Time 1) and Frequent Online Teaching During COVID-19 (Time 2) on Emotional Exhaustion (Time 2)



fine-grained hypotheses regarding the differential effects of threat to identity value, meanings, and enactment. In the absence of established measures of the three types of identity threat, extant studies have either focused on stereotype-induced identity threat or on the experience of identity threat broadly speaking. For this reason, there are no existing propositions regarding the specific ways in which each type of identity threat influences outcomes. By including all three types of identity threat in our analyses, we were able to isolate each type of threat's effect on outcomes. For example, threat to identity value was related to exhaustion in all three samples, unlike the other two types of threat. Throughout our studies, threat to identity meanings was consistently related to intentions to exit the threatened identity, but the other two types of threat were not. Additionally, the relationship between the three types of threat and task proficiency was not significant, except for threat to identity enactment in the teacher sample.

Following from these patterns, it is possible that each type of threat affects outcomes through different mechanisms. For example, threat to identity value could be a stronger predictor of emotional exhaustion because it disrupts emotional regulation more than the other two types of threat. Similarly, when meanings are threatened, people may experience a breach in self-continuity which may compel them to rethink who they want to be and potentially exit the identity, more so than when identity value or enactment are threatened. Last, because it implies a potential limitation in one's ability to express their identity, threat to identity enactment may have a stronger effect on people's behaviors than threat to identity value and meanings. In the future, researchers could explore how the different types of threat relate to various outcomes to develop new theory and a more precise understanding of how each type of threat affects individuals.

Directions for Future Research

Although our findings broadly point to the generalizability of the framework across identity types, some results suggested that there may be idiosyncrasies in how identity threat-related processes unfold depending on characteristics of the identity under threat. For example, we did not find evidence for a relationship between identity threat and identification in our studies focusing on teacher identity and the leader identity of pregnant women. In contrast, small yet significant correlations in the LGBTQ study suggest that organizational members who strongly identified as LGBTQ were more likely to experience threat to the value of their LGBTQ identity, but less likely to experience threat to its meanings. These findings point to two potential avenues for future research.

First, identification may play out differently with different identities. For example, the relationship between identity threat and identification may differ depending on whether the identity can easily be exited. When identities can be relinquished, identification may not necessarily affect the individual as much because they have a "way out." The relationship between identification and identity threat may also differ depending on social evaluations of the identity (i.e., whether the identity is stigmatized). It is plausible that individuals who hold stigmatized identities they strongly identify with develop a sensitivity to or an awareness of identity threats because they are exposed to negative evaluations in various settings and on a regular basis. Researchers should investigate whether identity threat operates differently depending on the studied identity. As our measures can be adapted to different identities, they will make such comparisons possible.

Second, the finding that identification was negatively related to threat to identity meanings but positively related to threat to identity

value in Stage 5 suggests that different types of threat have differential relationships with other concepts. One explanation might be that people who more strongly identify with an identity are more certain of the meanings they associate with it, such that these meanings are less easily shaken. Future research should examine how each type of threat relates with various constructs, including identification.

We also hope to stimulate research into other potential threat triggers. Our measures could prove useful in a variety of contexts. For example, researchers and managers alike might administer the scales in the aftermath of a corporate scandal (Petriglieri, 2015), and before and during mergers and acquisitions (Lensges et al., 2016) as well as other forms of organizational change (Petriglieri & Devine, 2016; Ravasi & Schultz, 2006). Using our measures which can be adapted to different types of identities will contribute to building a body of evidence that, over time, will allow for insights into identity threat across research areas. In addition to testing propositions derived from qualitative findings, researchers could also investigate identity threat in areas where it has not yet been considered. Scholars could, for example, study how positive events such as getting a promotion may threaten people's identity (Dahm et al., 2019). Additionally, exploring whether (and how) another person's promotion or another person's role transition generate identity threat in employees might also prove insightful (George et al., 2022; Vough & Caza, 2017).

In the same vein, having examined relevant outcomes, we encourage researchers to investigate a broader set of variables. For example, researchers could explore the unanticipated upsides of identity threat (e.g., positive deviance, see Lyons et al., 2017). Scholars have documented unexpected positive consequences of threat, including promotive voice, relationship building with dissimilar others, and social change (Leigh & Melwani, 2019). In future, researchers could use our scales in examining a wider array of outcomes.

The availability of the identity threat measures could also stimulate more research into the role of time in how threat develops and unfolds. Scholars have proposed that people's responses to threat change over time (Bataille & Vough, 2022). Qualitative studies have suggested that, as time passes, people may recast identity threats into opportunities by reframing them as a chance to learn (Kreiner & Sheep, 2009): An event which is initially appraised as an identity threat can catalyze positive identity change and subsequent identity growth (Roberts et al., 2009). For example, through a long learning and recovery process, injured musicians seemed to build new, positive identities, and grow out of the traumatic experience (Maitlis, 2009). While our studies offer some initial insight into the relative temporal stability of threat perceptions over a period of 2 weeks (in Stages 3 and 5), researchers could use our scale in longitudinal designs to assess changes in threat perceptions and subsequent outcomes over longer periods of time, for example, over the first few weeks or months after a traumatic event or organizational change.

Additionally, with standard measures in place, scholars will be able to explore whether and how individual and contextual aspects amplify or buffer the relationship between identity threat, triggers, and outcomes. Specifically, under what circumstances are certain triggers more likely to lead to identity threat? And which variables may affect the extent to which identity threat leads to specific outcomes? For example, Petriglieri (2011) proposed (but did not test) that identification may amplify the relationship between threat appraisals and identity protection responses. In the stereotype threat literature, there is some evidence that identification with the stereotyped domain amplifies threat outcomes (Nguyen & Ryan, 2008). However, a recent meta-analysis failed to confirm this hypothesis (Shewach et al., 2019). Our measures will allow researchers to more rigorously test moderating effects, enriching our understanding of identity threat's nomological network.

Relatedly, our scales could also be used in research into how identity threat can be mitigated. Current interventions tend to focus on reducing threat perceptions in student populations and focus specifically on stereotype-induced identity threat (B. K. Lambert et al., 2022). For example, Shapiro et al. (2013) developed a series of studies using self-affirmation interventions (i.e., reflections about aspects of one's identity that are not subject to threat) and role model interventions (i.e., providing access to in-group role models). Students in the treatment conditions performed significantly better on stereotype threat-inducing tasks than students in the control groups. As B. K. Lambert et al. (2022) noted, the next step in this research is to examine such interventions in the field. Further, we suggest the need for broadening the set of triggers, outcomes, and the types of threat that are explored in such intervention studies. Taking up this proposition would ultimately allow us to gain a more complete understanding of the different types of identity threats and their nomological network, as well as to develop effective interventions to reduce the deleterious effects of identity threat in organizations.

Finally, we hope our endeavor inspires scholars to develop and validate scales for other identity-related constructs. For example, our identity threat scales would be nicely complemented by corresponding identity opportunities scales (Bataille & Vough, 2022) and we hope that as scholarship on that topic expands such measures will be developed. In addition, while there are scales that tap into identity conflict (Horton et al., 2014), they are often specific to a context or not fully validated. As such, we see identity conflict as another construct that would benefit from scale validation. Finally, there may be potential to develop a scale measuring identity work, perhaps drawing on the distinction between cognitive, discursive, physical, and behavioral forms of identity work (Caza, Vough, et al., 2018).

Limitations

The research reported in this article has several limitations. First, our scales are explicit measures that require an awareness of threat (Echebarria Echabe, 2013) and may therefore be particularly useful in study designs where individuals are consciously experiencing identity threat (e.g., when a negative evaluation is explicitly conveyed). In contrast, when threat occurs subliminally, such as in laboratory experiments containing subtle identity threat cues (i.e., cues that do not involve conscious operation; see Shewach et al., 2019), our explicit measures risk bringing threat into awareness and may initiate processes that would otherwise not occur, such as a change in participants' emotional states (Hauser et al., 2018). This does not mean, however, that our scales would not be useful in experimental research. In fact, recent work suggests that, while subtle threat activation produces larger performance decrements in the laboratory as compared to more explicit activation (Nguyen & Ryan, 2008), in conditions closer to real-life settings, moderately explicit and blatant stereotype threat cues produce the largest effects (Shewach et al., 2019). In this vein, our measures could be used in

laboratory experiments that use explicit threat cues or that focus on real-life settings. Broadly speaking, more research is needed to examine the usefulness of our scale in experiments, and more specifically in experiments that use subtle identity threat cues.

In this research, we relied on self-report data to capture individual perceptions and individual outcomes over time. Self-reports are most appropriate to capture identity threat, and triggers of threat arguably only result in identity threat when they are perceived as such by the focal individual (Petriglieri, 2011). The outcomes of emotional exhaustion and identity exit or turnover intentions are also likely to be most accurately assessed through self-reports. In addition, the longitudinal data employed in Stages 3, 4, and 6 provides a way to mitigate common method bias (Podsakoff et al., 2012). With regards to task proficiency, while using self-reports is not inherently problematic and presents several advantages over managers and peer reports of task-related ability and performance (Koopmans et al., 2014; Ramos-Villagrasa et al., 2019), complementing these data with other reports (e.g., supervisory ratings) would have been ideal. Field researchers studying specific groups or organizations could include other reports in assessing the effects of identity threats.

Finally, we captured individuals' intentions to exit their work identity. Yet, people may contemplate exiting a role and never actually do it (Verbruggen & De Vos, 2020). To capture actual role-identity exit (Petriglieri, 2011), future research could investigate turnover, that is, career transitions that stem from identity threat. This would present the added benefit of answering the call for more research into the role of identity threats in causing role transitions (Petriglieri, 2011).

Practical Implications

Our findings and those from previous research suggest that identity threat predicts important outcomes with relevant implications for individuals and organizations. Managers and organizations have a key role to play in dealing with threats (Petriglieri, 2011). Many organizations implement diversity and inclusion policies and training to reduce incidences of identity threats stemming from discrimination. Such initiatives are costly, yet they are not always effective (Leslie, 2019). Using our scales would allow organizations to gauge identity threat before and after an initiative is implemented in order to understand whether it results in an actual change for the individuals it aims to benefit and whether it results in any unintended consequences for individuals outside the intended beneficiary group. Measuring progress and keeping track of the impact of diversity practices would present the added advantage of creating individual, team, and organizational accountability for the initiative's success (S. K. Kang & Kaplan, 2019).

In the same vein, managers looking to introduce a change—be it a change in the spatial configuration of the workplace (Elsbach, 2003), a merger (Sveningsson & Alvesson, 2003), or a technological change (Craig et al., 2019)—could also use our scales to assess employees' identity threat before and after the change is implemented. In other words, our scales can be utilized as diagnostic tools to uncover "pain points" of a change initiative. In addition to establishing whether a given change has resulted in threat perceptions, our measures can also provide indications as to which aspects of identity threat practitioners can focus on in subsequent threat-reducing interventions.

Conclusion

Identity threats, experiences that may cause harm to identity value, meanings, and/or enactment, are pervasive and unsettling. Because of their ubiquity, threats to people's identity have drawn scholarly attention across fields. Yet, the absence of standard measures has hindered the advancement of this literature. The availability of scales capturing the three types of identity threat opens avenues for future research aimed at exploring underresearched areas and extending existing models. Ultimately, this will allow management and applied psychology scholars to develop better guidance for organizations and employees dealing with this commonplace, yet difficult experience.

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Received June 6, 2022
Revision received April 4, 2023
Accepted April 22, 2023 ■