

# FIRST ENCOUNTERS OF THE COLD KIND: PSYCHOLOGICAL PERSPECTIVES ON LANGUAGE-BASED INFERIORITY IN ENGLISH-MEDIUM INSTRUCTION AND STUDENT-PROFESSOR INTERACTION DYNAMICS

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English proficiency is necessary for success in the global business economy, which poses a significant hurdle for nonnative English speakers. This challenge, combined with pressure on non-Anglophone business schools to internationalize, has led many schools to offer English-medium instruction (EMI) courses, in which English is used to teach academic subjects other than English. While past research has predominantly taken a skill-based approach, focusing on how English proficiency affects EMI effectiveness, we take a psychological perspective, drawing on sociometer theory to explore how student self-perceptions of threats to self-esteem may undermine student-professor interactions from the outset. Across four experiments (and two posttests), we demonstrate that self-ascribed nonnative English-speaking business students experience a threat to their self-esteem when anticipating taking EMI courses taught by native English-speaking professors. In response, students self-protect against this threat by making less warm first impressions. Paradoxically, these defensive actions trigger the very reaction students fear: a reduced desire from native English-speaking professors to interact with them. This language-based inferiority threat attenuates when students communicate in their native language or engage in self-affirmation. Our results contribute to the management education literature by highlighting an overlooked psychological dimension of EMI courses and proposing interventions to improve student-professor interaction dynamics.

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English, as the common global language, streamlines international communication and data access but poses significant challenges for individuals not proficient in the language. Nonnative English speakers, who outnumber native speakers six to one, face considerable disadvantages, forcing them to improve their English fluency and intercultural communication skills to compete effectively (Lyons, 2021; Smit & Dafouz, 2012; Spector-Cohen, Amdur,

Barth, Sitman & Weinberg, 2019; Woolston, 2019). The widespread use of English has also placed formidable pressure on non-Anglo universities to increase their institutional internationalization to be competitive (Lasagabaster, 2016). In response, many institutions have implemented EMI courses, where English is used to teach academic subjects other than English (Dearden, 2016; Lueg & Lueg, 2015; Macaro, 2018).

Business stands out as one of the largest EMI-employing fields in higher education (Thompson, Takezawa & Rose, 2022). EMI courses in business schools offer several advantages. First, business students recognize the importance of English proficiency for career advancement in global markets, unlike fields where it may be less critical (Inbar-Lourie & Donitsa-Schmidt, 2013; Neeley & Dumas, 2016; Rose, McKinley, Xu & Zhou, 2020). Survey data also show higher satisfaction with EMI courses among business students than engineering or nursing students (Byun et al., 2011). Second, EMI boosts internationalization, improving media rankings that help schools secure funding, attract top students and faculty, and gain recruitment attention from global companies (Corley & Gioia, 2000; Devinney, Dowling & Perm-Ajchariyawong, 2008). Finally, EMI attracts higher-paying international students, offering financial benefits while fostering a multicultural environment that enhances creativity, intercultural sensitivity, and job market readiness (e.g., Leung & Chiu, 2010; Maddux, Bivolaru, Hafenbrack, Tadmor & Galinsky, 2014; Tadmor, Hong, Chao, Wiruchnipawan & Wang, 2012; Tadmor, Satterstrom, Jang & Polzer, 2012).

Although EMI has emerged as a significant trend in 21st-century higher education, its effectiveness remains a topic of debate (Deroey, 2023; Ismailov, Chiu, Dearden, Yamamoto & Djalilova, 2021; Macaro, 2018; Macaro, 2020; Macaro, 2022; Macaro & Aizawa, 2024). Research highlights that English proficiency is the primary predictor of success in EMI settings, with students possessing higher proficiency levels achieving superior outcomes, while those with lower proficiency see limited improvement (Macaro, Curle, Pun, An & Dearden, 2018). Teacher preparedness and English skills are also critical factors, yet professional development programs often fall short in addressing the unique pedagogical and linguistic demands of EMI (Macaro & Aizawa, 2024). Affective challenges, such as anxiety and lack of confidence, further hinder student engagement (Ismailov et al., 2021), but existing reviews mainly emphasize linguistic challenges and the need for improved teaching strategies.

However, these professional development initiatives primarily focus on improving teachers' English

proficiency and their ability to integrate English into their teaching methods, often neglecting the psychological factors that shape student-teacher interactions in EMI settings. While English proficiency is often regarded as the main predictor of success, this skill-based perspective only tells part of the story. A crucial aspect of these interactions lies in students' self-perceptions and expectations of how their professors will perceive them. Research beyond EMI shows that positive student-teacher relationships are critical for fostering student engagement (Pianta, 1999; Quin, 2017). Conversely, when students fear being devalued by their teachers, their level of engagement tends to decrease (Jussim & Harber, 2005; Wentzel, 1997).

In this paper, we propose that a key factor influencing students' self-perceptions in EMI emerges even before meeting their professors: students' self-ascribed status as nonnative English speakers relative to that of their professors. The necessity to communicate in English amplifies this comparison, making it particularly salient in the EMI context. When students know their professor is a native English speaker, they may perceive themselves as linguistically inferior, regardless of their actual English proficiency. Drawing on sociometer theory (Leary, 1999, 2005; Leary & Baumeister, 2000; Stinson, Cameron, Wood, Gaucher & Holmes, 2009), which posits that self-esteem monitors social acceptance or rejection, we argue that such perceptions of linguistic inferiority activate self-esteem threats. These threats lead students to adopt self-protective behaviors, such as displaying less warmth in initial interactions, anticipating potential rejection from native English-speaking professors.

Paradoxically, these defensive actions can lead to negative perceptions from professors, reducing their desire to engage with the students. This cycle of self-protection and disengagement reveals a critical cost to student-professor interactions, particularly given the importance of warmth for fostering future collaboration (e.g., Fox & Spector, 2000; Pianta, 1999; Quin, 2017; Rivera, 2015; Roorda, Koomen, Spilt & Oort, 2011; Wentzel, 1997). To address these self-esteem threats, we explore native language use and self-affirmation (Cohen & Sherman, 2014) as strategies to mitigate the negative effects of perceived linguistic inferiority. By adopting a psychological perspective, we move beyond the skill-based focus of EMI research and uncover disengagement as a critical but overlooked consequence of EMI. We also offer practical implications for improving teacher training by integrating psychological theories.

To test our theoretical framework, we present an experimental, face-valid approach that fosters an

empirically driven conversation about how students psychologically approach EMI professors. Unlike most prior research, which has relied on self-reports, interviews, and observational data (e.g., Curle, Alqarni, Mahdi, Al-Nofaie & Ali, 2024; Macaro et al., 2018; Macaro, 2022), our method establishes causal pathways and deepens understanding of the mechanisms shaping these dynamics.

## THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

### Existing Research on EMI and the Domination of a Skill-Based Explanation

The introduction of mainstream courses taught in a foreign language has rapidly gained popularity in many countries that traditionally used their dominant or national language for education (Smit & Dafouz, 2012). In these courses, students not only acquire the subject matter but also learn the foreign language concurrently. Given the prominence of English as the primary global language of communication and as the leading language in scientific research, governments and educational systems have increasingly adopted English as the preferred language for these integrated content and language courses. As Lasagabaster (2016: 315) notes, the “belief is that by combining meaningful academic content and [English] language learning, EMI can help to accomplish two objectives—content and language learning—at the same time.” The number of EMI courses has mushroomed, becoming widespread across Europe, Asia, and the Middle East (e.g., Inbar-Lourie & Donitsa-Schmidt, 2020; Sahan et al., 2022).

And yet, systematic reviews of this topic suggest that research on EMI is still in its adolescence (Macaro et al., 2018). Findings frequently point to challenges such as ineffective course content delivery, limited improvements in English proficiency, and low student motivation to participate in class. Ongoing studies continue to explore these issues and propose more effective strategies for implementing EMI courses (for reviews, see Macaro, 2022; Macaro et al., 2018; Sahan et al., 2020). Most of the empirical research, however, seems to have taken a skill-based approach, focusing on the English proficiency of faculty, students, or both—an achieved characteristic that people can work to improve—as the critical determinant of EMI learning processes and outcomes.

To empirically substantiate the extent to which EMI research focuses primarily on English proficiency of faculty, students, or both, we conducted a

search on Web of Science for articles with “English Medium Instruction” in their titles, which resulted in 664 articles. We aimed to include only empirical studies carried out in higher education and published in peer-reviewed journals. As a result, we excluded theoretical articles, policy-related papers, studies on digital or online learning, meta-analyses, and review articles, narrowing our selection to 169 articles. As shown in the accompanying Excel table (<https://docs.google.com/spreadsheets/d/1WSvabFwFeiXi9T6PmxKfjPS9KjzY3Vbk/edit?usp=sharing&ouid=102704668865174913581&rtpof=true&sd=true>), we systematically reviewed each article, identifying key elements such as the main research question, independent and dependent variables, and principal findings.

We then aimed to identify major research themes by grouping recurring topics and issues across the 169 articles, drawing from themes highlighted in prior reviews (e.g., Ismailov et al., 2021; Macaro et al., 2018; Macaro, 2020; Macaro, 2022; Macaro & Aizawa, 2024; Zhu & Wang, 2024). This process revealed seven key themes: (1) English proficiency, (2) perception of EMI, (3) motivation and engagement, (4) class participation, (5) academic performance, (6) pedagogical approaches and teacher strategies, and (7) institutional and cultural challenges. We coded each article based on the themes it addressed and then analyzed their primary findings to identify core insights. To assess the emphasis on English proficiency within each theme, we counted the number of articles that were classified under both the specific theme and the “English proficiency” theme.

As summarized in Table 1, our analysis confirms that a significant portion of empirical EMI research focuses on English proficiency, with nearly 70% of the studies addressing this theme. Most of these studies emphasize the role of both faculty and student English proficiency in shaping EMI outcomes. Even within other themes, such as perceptions of EMI, motivation and engagement, and class participation, many studies tie their findings to English proficiency, suggesting that this skill-based explanation is viewed as a core factor across various aspects of EMI. However, this predominant focus on English proficiency overlooks other possible explanations for student reactions to EMI. Psychological factors, particularly those related to student-teacher interaction dynamics and independent of English proficiency, could provide an additional layer of understanding of student EMI experiences.

The importance of student-teacher interaction dynamics is well established outside the realm of EMI.

**TABLE 1**  
**Overview of Theme Counts, Summary Findings, and English Proficiency Percentages**

Theme	Count (out of 169)	%	Summary of Main Findings	Number of Articles Explicitly Connecting Their Findings to English Proficiency
English Proficiency	118	69.8	The articles within this theme explore the role of English language ability in both students and teachers in EMI contexts. The main findings show that English proficiency is often linked to better comprehension, participation, and academic performance. It also impacts confidence in using English in academic settings and influences overall perceptions of EMI. Some studies indicate that limited proficiency poses challenges to understanding course content and participating fully. The findings also emphasize the need for language support for both students and teachers to enhance EMI effectiveness.	100% of articles within this theme focus on English proficiency.
Perception of EMI	54	31.9	The articles within this theme explore attitudes, beliefs, and experiences of EMI among students and teachers. Findings suggest that perceptions vary widely: some view EMI positively, as beneficial for English skill development and future opportunities, while others see it as a barrier to learning, particularly if English proficiency is low. Positive perceptions are often tied to greater language competency, while challenges with EMI are frequently linked to insufficient English language skills.	Approximately 63% (34 out of 54) of these articles connect the perception of EMI to English proficiency.
Motivation and Engagement	48	28.4	Studies within this theme focus on how EMI impacts students' motivation to learn and their engagement in class activities. Findings show that EMI can both positively and negatively affect motivation: some students are motivated to improve their English skills, while others are demotivated by the difficulties they face due to limited proficiency. Engagement often hinges on students' confidence and ability to understand and use English effectively.	67% (32 out of 48) of the articles within this theme link motivation and engagement directly to English proficiency.
Class Participation	22	13.0	The main results show that student participation in EMI classes is often hindered by limited English proficiency. Students are less likely to speak up, ask questions, or engage in discussions when they lack confidence in their language skills. Teaching strategies and pedagogical approaches significantly shape participation, as teachers must navigate varying language abilities and find methods to actively involve students.	Approximately 54% (12 out of 22) of these articles find that class participation issues are tied to English proficiency.
Academic Performance	52	30.8	This theme explores how EMI influences academic outcomes, with many studies finding a correlation between higher English proficiency and better academic performance. Students with strong English skills tend to understand content better, perform well on assessments, and report fewer challenges in EMI courses. Conversely, those with limited proficiency face difficulties in both comprehension and expressing their knowledge. However, the findings are mixed and insufficient to conclusively assert that EMI significantly benefits language learning or that it hinders content learning.	Approximately 83% (43 out of 52) of the articles indicate that English proficiency significantly influences academic performance in EMI settings.
Pedagogical Approaches and Teacher Strategies	109	64.5	The research highlights a range of pedagogical techniques and strategies that teachers use to accommodate EMI, including code-switching, simplified language, and visual aids to support understanding. Teacher proficiency in English also plays a role, as it influences how effectively they can teach content and facilitate learning. Both student and teacher perceptions of successful strategies are shaped by their respective English abilities. A notable issue within this theme is the lack of sufficient training for teachers to adapt to EMI, affecting their ability to employ effective strategies.	Approximately 70% (76 out of 109) of articles within this theme link pedagogical approaches and teacher strategies to English proficiency.
Institutional and Cultural Challenges	50	29.6	The main findings indicate that institutional policies, cultural attitudes toward EMI, and support structures significantly affect EMI implementation. Challenges include a lack of resources for language support, differing expectations around language use, and varying levels of institutional commitment to EMI success. A recurring issue is the insufficient institutional support for teacher training, which hinders effective EMI teaching practices. English proficiency is often noted as a cultural and institutional hurdle, particularly where language support may be insufficient.	Approximately 68% (34 out of 50) of the articles within this theme highlight English proficiency as a contributing factor to institutional and cultural challenges.

For example, meta-analyses have demonstrated that a warm connection between teacher and students is associated with greater student motivation, higher engagement with learning, a better ability to handle course demands, and more positive course outcomes (Pianta, 1999; Quin, 2017; Roorda et al., 2011). This positive affective connection addresses a fundamental human need for belonging (Baumeister & Leary, 1995) and consequently increases students' identification with the study domain and increases their willingness to put effort into their studies (Wigfield, Eccles, Schiefele, Roeser & Davis Keane, 2006; Zhou, 2021). Beyond the *actual* warmth demonstrated by teachers, longitudinal research has found that students' *perceptions* of their teacher's care for them significantly predict engagement, even when accounting for previous academic achievement. These perceptions make students feel valued, encouraging greater engagement with the teacher, a stronger commitment to academic goals, and an increased internal drive to succeed (Wentzel, 1997).

What factors impact students' perceptions of being valued by teachers? Although many factors can play a role, we propose that within the context of EMI, one key element is the native English-speaking status of the professor. This perceived language status can trigger an anticipatory psychological mindset that shapes the student-professor dynamic even before any direct interactions occur.

### **Self-Ascribed Native English-Speaking Status as an Important Psychological Factor in EMI Settings**

An important distinction exists between native English-speaking status, which is an ascribed characteristic, and English proficiency, which is an achieved characteristic. Native English-speaking status is ascribed to people who were born into speaking English "as their mother tongue from birth" (Karakas, 2017: 129; also see Doerr, 2009; Mauranen, 2005; Moussu & Llorca, 2008; Pennycook, 1994). In contrast,

a nonnative speaker is considered to be "someone who has learned a particular language as a child or adult rather than as a baby" in an ESL or EFL environment (Cambridge Dictionary Online). Therefore, a nonnative speaker is excluded from being a member of the speech community having acquired the language from birth. In a sense, such an understanding of the term deprives nonnative speakers of the ownership of the language. (Karakas, 2017: 129)

In contrast, English proficiency is considered an achieved characteristic, reflecting a skill that

individuals can significantly improve over time. In fact, nonnative speakers can reach near-native levels of proficiency or even exceed the abilities of the average native speaker (Medgyes, 1992). However, they can never attain the ascribed status of a native speaker because they were not born into the language. As Neeley (2013: 479) explains: "one's mother tongue is an ascribed characteristic that people are born into. The term 'native language' connotes a durable, binary characteristic."

More critical than the objective definition of being born into a language is the psychological impact of *self-ascribed* native English status. Although nonnative English speakers can often pass as native speakers to others (Inbar-Lourie, 2005), research has begun to explore how self-ascribed native English status influences psychological experience and resulting behaviors. Within the EMI context, the burgeoning research on this topic has focused almost entirely on how professors' native English-speaking status impacts the perceptions and preferences of self-ascribed nonnative English-speaking students' regarding teaching behavior and EMI course selection.

For example, some studies show that self-ascribed nonnative English-speaking students prefer studying with native English-speaking professors (Inbar-Lourie & Donitsa-Schmidt, 2013; Suviniitty, 2007). However, empirical findings are mixed, with other research suggesting that many students appreciate the value of nonnative English-speaking professors and may even favor them in certain contexts or for specific classroom tasks (Benke & Medgyes, 2005; Moussu & Llorca, 2008). The most consistent finding is that students perceive both advantages and disadvantages in each type of teacher: native English speakers are viewed as more authentic language speakers, while nonnative English speakers are better able to empathize with students' learning difficulties (Medgyes, 1992, 1994). Many students suggest that the ideal teaching scenario would involve a mix of native and nonnative English-speaking teachers (Lasagabaster & Sierra, 2005) or incorporate qualities from both, such as high English proficiency, subject matter expertise, and familiarity with local culture and language (Galloway & Ruegg, 2022; Inbar-Lourie & Donitsa-Schmidt, 2020; Sahan, Galloway & McKinley, 2022; Qiu & Fang, 2019).

Virtually no research has explored how self-ascribed native English-speaking status affects individuals' self-perception or their beliefs about how others perceive them. Two notable exceptions have examined the psychological impact of self-ascribed native English status on the self-perceptions of

teachers and employees. For instance, Reves and Medgyes (1994) demonstrated that self-ascribed nonnative English-speaking teachers felt inferior to their native English-speaking counterparts, were self-conscious about students' judgments, and feared making mistakes. Similarly, Neeley (2013) found that self-ascribed nonnative English-speaking employees, required to use English due to organizational policy, felt their professional worth was reduced, reporting feelings of stupidity and diminished self-worth, regardless of their actual level of English proficiency. Even a high proficiency in English did not shield self-ascribed nonnative English speakers from feelings of inferiority (Neeley, 2013).

What are the psychological implications of self-ascribed native English status on students' self-perceptions in EMI settings? While the requirement to communicate in English makes self-ascribed native English status a salient psychological factor in these contexts, its effect on students remains unexplored. We propose that in EMI settings, self-ascribing as a nonnative English speaker psychologically positions students as inferior to native English-speaking professors, irrespective of their English proficiency. This perceived inferiority leads to a reduction in self-esteem, tapping into the fundamental human need to feel valued (Baumeister & Leary, 1995), and has serious implications for the student-professor interaction dynamic.

Research outside EMI settings indicates that when students feel devalued they are more likely to perceive their teacher as less supportive and caring (Jussim & Harber, 2005). A strong, positive affective relationship between students and teachers is critical for fostering student engagement (e.g., Quin, 2017; Wentzel, 1997). Yet, if students fear being perceived as inferior, they may disengage from their professors to protect their self-worth. This focus on self-esteem moves beyond the traditional skill-based explanation of achieved English proficiency and underscores the importance of understanding how self-ascribed English-speaking status affects students' willingness to engage with professors, particularly at the outset of the student-teacher relationship.

### **Professor Native English Status as a Source of Threat to Students: A Sociometer Theory Perspective**

Sociometer theory (Leary, 1999, 2005; Leary & Baumeister, 2000) provides a framework for understanding how perceptions of value are linked to self-esteem, contextualizing the dynamics of self-ascribed

English-speaking status in EMI settings. This theory assumes that because social group membership has afforded human beings a higher likelihood of survival, people have developed a drive to assess how much they are valued by others to ensure a basic level of social acceptance. According to sociometer theory, the self-esteem system continuously monitors the social environment for cues indicating that an individual may not be sufficiently valued as a relational partner. Those who are the most salient to the individual in the immediate social context will impact this self-evaluation (Leary & Baumeister, 2000).

When there are signs of a potential low relational evaluation, individuals experience a sense of threat to their social acceptance, prompting them to take action to reduce this threat. Even the mere possibility of rejection can activate this response. Thus, the function of self-esteem is to signal and motivate behaviors aimed at reducing the risk of social rejection. People's self-esteem can be altered by *reflected appraisals*—their beliefs regarding *how they think they are perceived and evaluated by others*. These beliefs may be real or imagined and can occur without actual contact with the other person (Cooley, 1902; Mead, 1934). When people believe that they are devalued by others, they experience a threat to their social acceptance, which propels them to respond.

A key attribute contributing to individuals' beliefs of devaluation and subsequent reductions in self-esteem is reflected appraisals of incompetence (Leary, 2005; Leary & Baumeister, 2000). Within the EMI context, nonnative English-speaking status can be a source of reflected incompetence, as it represents an inherent and unchangeable characteristic of perceived linguistic inferiority. This sense of relational inferiority goes beyond the achieved aspect of being a less fluent speaker.

Where does this perception of incompetence originate? Research shows that people perceived as nonnative speakers, whether due to their accents (Gluszek & Dovidio, 2010) or relative language proficiency (Hui & Yan 1987; Olynyk, Sankoff & d'Anglejan, 1983; White & Li, 1991; Wible & Hui, 1985), are consistently judged by native language speakers as less capable, skillful, and intelligent. These perceptions of diminished competence due to linguistic inferiority are commonly shared among self-ascribed nonnative English speakers. When interacting with native English speakers, these perceptions become salient and erode self-confidence (Horn, 2017; Neeley, 2013). In light of this, we propose that in EMI courses taught by native English-speaking professors, self-ascribed nonnative English-speaking students may anticipate

being judged by their professors as relatively incompetent due to their sense of linguistic inferiority, a phenomenon we term *language-based reflected appraisal of incompetence*. Even before the initial interaction, these students may expect native English-speaking professors to perceive them as less competent compared to how they would be perceived if they could communicate in their native language. This expectation is less likely to arise with nonnative English-speaking professors because both students and professors are in the same linguistically inferior boat, potentially fostering a sense of comfort during interactions.

Language-based reflected appraisal of incompetence is likely to alert students to the possibility of relational rejection by their professors. Because the source of this devaluation—their self-ascribed nonnative English-speaking status—is unalterable, students may adjust their behavior along the warmth-coldness continuum to mitigate the risk of rejection (Leary & Baumeister, 2000). Displaying warmth is typically a strong indicator of openness to connection, while coldness signals a desire for distance. We propose that the strategy of behaving warmly is unlikely to be employed in this context because there is no way to counteract the perceived source of relational devaluation, such as in the case of the self-ascribed native-nonnative English-speaking divide. One either self-defines as a native speaker or does not.

Therefore, it is more likely that self-ascribed nonnative English-speaking students will lean toward behaving coldly. Although this response may seem counterintuitive, since it increases the risk of rejection, previous research suggests that expressing warmth only to face rejection can be more painful due to the greater personal investment involved (Murray, Holmes & Collins, 2006; Stinson, Cameron, Hoplock & Hole, 2015; Stinson et al., 2009; Stinson, Logel, Shepherd & Zanna, 2011). Conversely, adopting a cold demeanor allows students to protect themselves by avoiding potential social pain, humiliation, and embarrassment (Stinson et al., 2015). As Stinson et al. (2015: 189) describe, this self-protective strategy of coldness “allows them to remain aloof and unconnected to potentially painful social bonds.” In turn, a reduction in warmth from students is likely to diminish professors’ desire to engage with them, ultimately leading to the very rejection the students were anticipating, thus self-fulfilling the anticipated rejection.

Because students’ perception of anticipated rejection matters more than objective reality, we predict that a professor’s native English-speaking status will

impact students even before they enter the classroom. Any anticipated interaction with a native English-speaking professor—such as sending an email—is likely to be influenced by this self-threat. Moreover, simply knowing that the professor has an Anglophone name and comes from an Anglophone country should be enough to trigger this effect, given the native English-speaking status implied by these attributes.

### **Counteracting Language-Based Reflected Appraisals of Incompetence: Leveraging Native Language and Self-Affirmation**

Resolving the threat to self-esteem is critical because poor rapport with professors severely hinders students’ learning (Meng, 2021; Quin, 2017; Wentzel, 1997; Zhou, 2021), which is especially harmful in business education, where active class participation and interaction with professors are often pivotal. How can this threat be alleviated? While a straightforward approach might involve exclusively employing nonnative English-speaking professors for EMI courses, this strategy could limit non-Anglo business schools’ ability to attract top talent and does not directly address students’ linguistically based self-esteem concerns. We offer two viable alternatives, both of which we test in this research.

First, we suggest that the self-threat resulting from linguistic inferiority could be overridden by permitting students to use their native language. If the source of self-ascribed nonnative English-speaking students’ self-threat is rooted in being judged as less competent by native English-speaking professors due to their English proficiency, then using their native language should alleviate that threat. This approach would enable students to express themselves more accurately and confidently, presenting themselves as competent, skilled, and intelligent. Enhancing communication competence in this manner should reduce the threat associated with potential language barriers because students would feel more capable of representing their true abilities. Of course, implementing this solution in isolation may undermine the primary goal of EMI, which is to improve students’ English proficiency. Avoiding English might disadvantage students in this regard. Nonetheless, we explore this solution as a means of determining whether allowing students to use their native language in combination with English could serve as an effective pedagogical strategy to enhance EMI and foster a more supportive learning environment (Dafouz & Smit, 2020; Sahan et al., 2022).



Second, we propose the use of self-affirmation as a viable solution. Self-affirmation theory posits that psychological threats undermine individuals' positive self-worth, but reminding them of their valued qualities can buffer against these threats (Cohen & Sherman, 2014; Marr & Thau, 2014; McQueen & Klein, 2006; Sherman & Cohen, 2006; Stinson et al., 2011). This intervention works by counteracting the students' sociometer, effectively neutralizing the alert. Widely applied across various contexts, self-affirmation has shown enduring benefits, including improved academic success, better health outcomes, and higher quality interpersonal relations (for a review, see Cohen & Sherman, 2014).

By mitigating the perceived threat, both interventions—using one's native language and engaging in self-affirmation—are expected to help students create warmer first impressions and establish a more positive rapport with their native English-speaking professors. Furthermore, these strategies allow us to test the underlying psychological mechanism of self-threat through a moderation-of-process approach (Spencer, Zanna & Fong, 2005). Specifically, we examine the psychological process of self-threat by manipulating it to moderate the relationship between the professor's native English-speaking status and students' communication warmth, allowing it to vary naturally in one condition and attenuating it in the other. Demonstrating effective interventions through significant moderation from both solutions would offer further evidence that self-esteem threat drives the observed reduction in warmth while also minimizing potential biases from self-reporting or priming effects (for a similar approach, see Marr & Thau, 2014).

Taken together, focusing on self-ascribed nonnative English-speaking students, we hypothesize:

*Hypothesis 1. Professor native English-speaking status negatively affects first impressions of students' warmth. Students writing to a native English-speaking professor are perceived as significantly less warm than those writing to a nonnative English-speaking professor.*

*Hypothesis 2. Professor native English-speaking status negatively affects students' language-based reflected appraisal of incompetence. Students writing to a native English-speaking professor report significantly higher levels of reflected appraisal of incompetence than those writing to a nonnative English-speaking professor.*

*Hypothesis 3. Language-based reflected appraisal of incompetence mediates the effect of professor native English-speaking status on students' warmth.*

*Hypothesis 4a. Professor native English-speaking status negatively affects native English-speaking professors' desire to interact. Specifically, native English-speaking professors desire significantly less interaction with students who write messages intended for a native English-speaking professor compared to those intended for a nonnative English-speaking professor.*

*Hypothesis 4b. Students' warmth mediates the effect of professor native English-speaking status on native English-speaking professors' desire for interaction.*

*Hypothesis 5a. Students' communication language moderates the effect of professor English-speaking status on students' warmth, such that the effect is attenuated for students who communicate in their native non-English language.*

*Hypothesis 5b. Self-affirmation moderates the effect of professor English-speaking status on students' warmth, such that the effect is attenuated for students who engage in self-affirmation.*

Finally, because self-affirmation involves communication in English, unlike native non-English communication, we focus on the effects of self-affirmation on downstream interaction consequences and hypothesize that:

*Hypothesis 6a. Self-affirmation moderates the effect of professor native English-speaking status on native English-speaking professors' desire to interact, attenuating it for students who self-affirm.*

*Hypothesis 6b. Self-affirmation moderates the mediating effect of reduced warmth on the relationship between professor native English-speaking status and native English-speaking professors' desire to interact, attenuating it for students who self-affirm.*

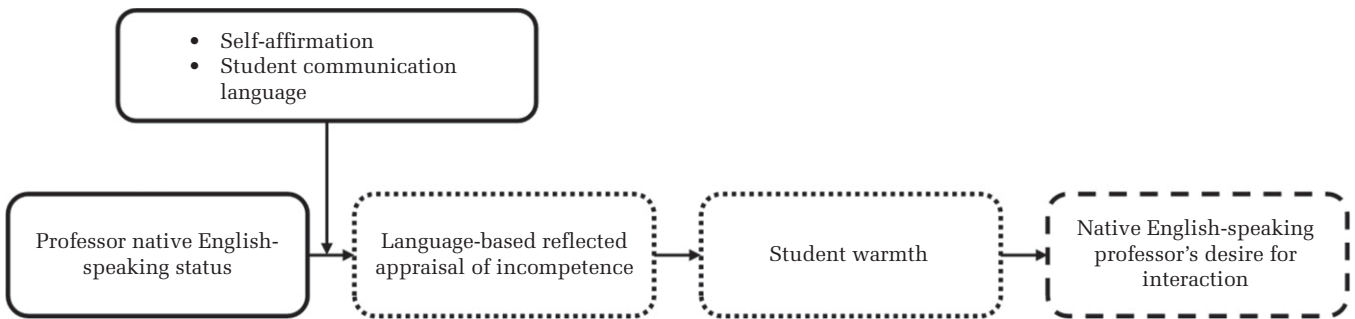
Our conceptual model is illustrated in Figure 1. We anticipate that our proposed solutions of using native non-English language and self-affirmation could improve any first interaction between self-ascribed native and nonnative English-speakers' focus on EMI courses because, despite their popularity, their implementation has produced more challenges than opportunities (Macaro et al., 2018). Consequently, our approach offers business school educators, students, and policymakers simple tools that could help.

## OVERVIEW OF EXPERIMENTS

Unlike previous EMI research that has relied almost exclusively on interviews, observation, and self-report questionnaires (e.g., Macaro, 2022; Macaro et al., 2018), we take an experimental perspective and ground our theory in established psychological



**FIGURE 1**  
**A Conceptual Model of EMI Professor's Native English-Speaking Status on Self-Ascribed Nonnative English-Speaking Students**



*Notes:* The solid line boxes represent our manipulated variables. The dotted line boxes represent the effects on students' language-based reflected appraisal of incompetence and on students' warmth. The dashed line box represents professor's desire to interact with the students based on students' warmth.

paradigms (e.g., Cohen & Sherman, 2014; Leary & Baumeister, 2000; Stinson et al., 2009). By employing experimental manipulation—the gold standard of psychological inquiry—we offer new insights into the pre-course psychological experience of nonnative English-speaking students before they even set foot in the EMI course classroom.

In our first two experiments, self-ascribed nonnative English-speaking undergraduate business students in Israel and France were told that in order to fulfill their EMI requirement, they would be taking an EMI course with a visiting professor and were asked to email him before the course began. The professor's native English-speaking status was manipulated by matching his name, country of origin, and email address with those associated with either Anglophone or non-Anglophone countries. Email communication provides access to the entire content driving first impressions and creates a conservative setting to test our predictions because its asynchronous nature allows students to craft their messages thoughtfully, optimizing self-presentation (Walther, 1996, 2007).

Given that the use of country of origin could potentially introduce alternative explanations, such as in-group identification based on shared linguistic background or attitudes toward country of origin rather than the professor's native English-speaking status driving the effects, we conducted two post-tests. To test potential interventions involving communication language and self-affirmation, as well as a robustness test for the self-threat mechanism, we verify results in a third experiment using a moderation-of-process design (Spencer et al., 2005). In our fourth experiment, employing a yoked design,

we investigate downstream consequences of students' self-esteem threat, replicating results across samples of non-teacher participants and teacher participants, both assuming the role of EMI professors. Across studies, we also report results after controlling for students' self-rated English proficiency because of its key importance in the context of EMI research (e.g., Lueg & Lueg, 2015; Xie & Curle, 2022).

Supplemental materials include the results for manipulation checks, indicating no differences among conditions on additional variables that could pose alternative explanations, including task performance, writing quality, and competence. Table 2 provides an overview of the key findings. Measure reliability estimates are provided in Table S1, and correlation matrices for all experiments are provided in Table S2—both are included in the supplemental materials.

## EXPERIMENT 1

Experiment 1 tests whether self-ascribed nonnative English-speaking students create less warm first impressions based on the professor's native English-speaking status.

### Participants

Two hundred five native French-speaking undergraduate business students studying in Paris who self-ascribed as not being native English speakers participated in exchange for €12. One participant was dropped because she wrote the email in French. The final sample included 204 students (31.9% men, mean age = 22.76,  $SD = 3.23$ ).

TABLE 2  
Overview of Experiments

	Sample Size (After Exclusions)	Participants	Design	Main Findings	Hypothesis Tested
Experiment 1	205 (204)	Native French-speaking undergraduate students	Professor's native English-speaking status: native English (United States, Australia) versus nonnative English speaker (China, Brazil) 4-cell between-subjects design	Nonnative English-speaking students create less warm first impressions when communicating with a native English-speaking professor than with a nonnative English-speaking professor.	H1
Experiment 2	174 (171)	Native Hebrew-speaking Israeli undergraduate students	Professor's native English-speaking status: native English (United States) versus nonnative English speaker (China) 2 cell between-subjects design	Nonnative English-speaking students create less warm first impressions when they communicate with a native English-speaking professor than with a nonnative English-speaking professor, with this effect mediated by language-based reflected appraisal of incompetence.	H1 H2 H3
Experiment 3a	299 (288)	Native Hebrew-speaking Israeli undergraduate students	2 (Email writing language: Hebrew vs. English) X 2 (Professor's native English-speaking status: native vs. nonnative) X 2 (Self-affirmation: yes vs. no) 8 cell between-subjects design	When students could write in their native Hebrew language or in English but given an opportunity to self-affirm, they created similarly warm first impressions, regardless of the professor's native English-speaking status, establishing both as useful tools to neutralize self-threat.	H5a H5b
Experiment 3b	145 (145)	Sample 1: Native English-speaking Mechanical Turk participants Sample 2: Native English-speaking academic teachers	Each participant read a single email written by an Israeli who participated in Experiment 3a and wrote the email in English using a 2 (Professor native English-speaking status: native vs. nonnative) X 2 (Student self-affirmation: yes vs. no) 4-cell between-subjects design	Native English-speaking participants assuming the role of professor indicated having less desire to interact with non-affirmed students who wrote to a native English-speaking professor, and this effect was mediated by reduced student warmth.	H4a H4b H6a H6b

## Materials and Procedure

Students were told that in the upcoming semester, they would be taking an EMI course taught by a visiting professor. The professor, who wished to explore the country before the start of classes, requested assistance in understanding how to use a locally developed travel application. The undergraduate program asked students to send the professor a welcome email, addressing his requests and offering travel recommendations. Because research consistently demonstrates that students perceive male and female faculty members differentially (e.g., Miller & Chamberlin, 2000), across experiments we kept the professor's gender as male to avoid an alternative explanation for the results.

For our travel application, we chose "Next Stop Paris" (RATP), a French-developed app that explains how to explore Paris using public transportation. We only selected experienced app users to refute a lack of familiarity account of our findings. To further ensure sufficient app knowledge across all conditions, participants first viewed a brief instructional video we created in French about the app. Next, we asked participants to read the visiting professor's request and to write to him in English, as he did not speak French. Participants then completed a series of questions. All materials appeared in French.

**Manipulation of professor's native English-speaking status.** The professor's native English-speaking status was manipulated by having half the participants randomly assigned to send their email

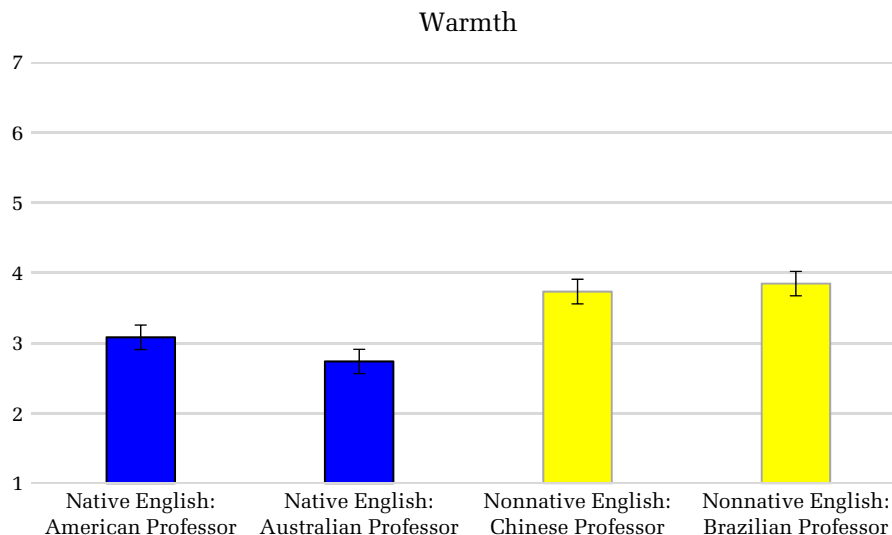
to a native English-speaking professor who was either from the United States (John Smith; J.Smith@yahoo.com) or Australia (John Dundee; J.Dundee@yahoo.au). The other half were randomly assigned to a professor from a nonnative English-speaking country who was either from China (Kaiping Hong; K.Hong@pku.edu.cn) or Brazil (João De Almeida; j.deameida@yahoo.br). We used two different Anglo and non-Anglo countries of origin so we could generalize the effect beyond a specific country.

**First impression of students' warmth.** Following previous work (Abele & Wojciszke, 2014; Fiske, Cuddy, Glick & Xu, 2002; Judd, James-Hawkins, Yzerbyt & Kashima, 2005), two coders blind to the conditions and hypotheses independently rated the emails on 7-point scales based on the extent to which the students appeared (1) friendly, (2) warm, and (3) approachable.

## Results

**First impressions of students' warmth.** As shown in Figure 2 and in line with Hypothesis 1, the professor's native English-speaking status shifted first impressions of students' warmth ( $F[3, 200] = 9.27$ ,  $p < .001$ ,  $\eta^2 = .12$ ). Students who wrote to a native English-speaking professor were rated as significantly less warm (American professor:  $M = 3.08$ ,  $SE = .17$ ; Australian professor:  $M = 2.74$ ,  $SE = .17$ ) than were students writing to a nonnative English-speaking professor (Chinese professor:  $M = 3.73$ ,  $SE = .18$ ; Brazilian professor:  $M = 3.85$ ,  $SE = .17$ ,

**FIGURE 2**  
Mean Values of First Impression Ratings of Students' Warmth as a Function of Professor Native English-Speaking Status, Experiment 1



all  $p$  values were less than .01). There were no differences between the American and Australian professors ( $p = .162$ ) or the Brazilian and Chinese professors ( $p = .645$ ). Collapsing across professors' nationalities, students who wrote to a native English-speaking professor were rated as less warm than were students who wrote to a nonnative English-speaking professor ( $F [1, 202] = 25.60, p < .001, \eta^2 = .11$ ). When students' self-rated English proficiency was added as a control, it significantly predicted rated warmth ( $F [1, 201] = 4.63, p = .03, \eta^2 = .02$ ), but it did not change the significant effect of professor's English language status ( $F [1, 201] = 26.90, p < .001, \eta^2 = .12$ ), alleviating concerns that English fluency underlies the effect.

## EXPERIMENT 2

Experiment 2 conceptually replicates the Experiment 1 results using a different self-ascribed nonnative English-speaking student sample (Israelis) and a different locally developed application (Waze). It further establishes the mediating role of language-based reflected appraisal of incompetence.

### Participants

One hundred seventy-four native Hebrew-speaking Israeli undergraduate business students in Israel who self-ascribed as nonnative English-speakers and who noted that Waze was their favorite navigation app participated for a chance to win prize money. Native Arab-speaking students were excluded a priori because English is their third language, after Arabic and Hebrew, leading to increased difficulty in EMI courses (Inbar-Lourie & Donitsa-Schmidt, 2020). Three participants were removed for not doing the task. The final sample included 171 students (49.1% men, mean age = 27.31,  $SD = 7.34$ ).

### Materials and Procedure

All materials appeared in the students' native Hebrew language. The experiment began with students viewing an instructional video we created in Hebrew about the application. Next, we told students they would be taking an EMI finance course with a visiting professor and asked them to send him an email. Afterward, participants were asked to answer questions about the task (e.g., how hard it was) and about reflected incompetence, followed by demographic questions, questions about their self-perceived English proficiency and knowledge of Waze, and a manipulation check.

**Manipulation of professor's native English-speaking status.** The manipulation was identical to that of Experiment 1 except that we had only two conditions: writing either to a native English-speaking professor (American) or a nonnative English-speaking professor (Chinese).

**First impression of students' warmth.** Two coders coded the impression of students' warmth with the same three items used in Experiment 1.

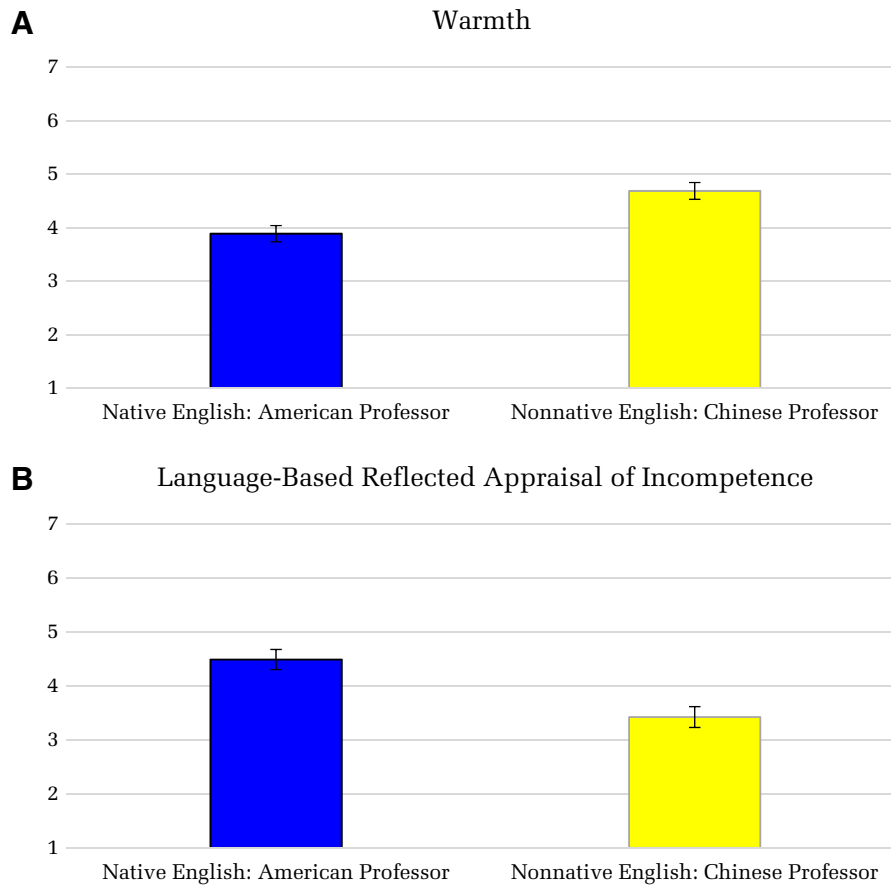
**Language-based reflected appraisal of incompetence.** Inspired by previous work (Abele & Wojciszke, 2014; Fiske et al., 2002; Judd et al., 2005; Leary & Baumeister, 2000), we assessed the mediator by asking students to rate on a 7-point scale the extent to which the professor would have thought of them as more (1) capable, (2) skillful, and (3) intelligent had they written the email in their native language. Higher scores indicate greater reflected appraisals of incompetence due to linguistic inferiority, with students fearing the professor would judge them as less competent because they wrote in nonnative English rather than in their native Hebrew.

## Results

**First impression of students' warmth.** As shown in Figure 3a and in line with Hypothesis 1, the professor's native English status predicted the first impression of students' warmth ( $F [1, 169] = 13.37, p < .001, \eta^2 = .073$ ), with students rated as significantly less warm when they wrote to the native English-speaking professor ( $M = 3.89, SD = 1.49$ ) than to the nonnative English-speaking professor ( $M = 4.69, SD = 1.37$ ). When students' self-rated English proficiency was added as a control, it significantly predicted rated warmth ( $F [1, 168] = 7.52, p = .007, \eta^2 = .043$ ), but the effect of professor English-speaking status on warmth remained significant ( $F [1, 168] = 11.21, p = .001, \eta^2 = .063$ ).

**Language-based reflected appraisal of incompetence.** As shown in Figure 3b and in line with Hypothesis 2, the professor's native English-speaking status significantly predicted students' language-based reflected appraisal of incompetence ( $F [1, 169] = 15.75, p < .001, \eta^2 = .085$ ), with students feeling they would be judged as less competent due to their relative linguistic inferiority when they wrote to a native English-speaking professor ( $M = 4.49, SD = 1.86$ ) than to a nonnative English-speaking professor ( $M = 3.42, SD = 1.64$ ). When students' self-rated English proficiency was added as a control, it significantly predicted reflected appraisal of incompetence ( $F [1, 168] = 12.26, p < .001, \eta^2 = .068$ ),

**FIGURE 3**  
**Mean Values of (A) First Impression Ratings of Students' Warmth and (B) Language-Based Reflected Appraisal of Incompetence as a Function of Professor Native English-Speaking Status, Experiment 2**



but the effect of professor native English-speaking status on language-based reflected incompetence remained significant ( $F[1, 168] = 13.11, p < .001, \eta^2 = .072$ ).

**Mediation analysis.** As predicted in Hypothesis 3, language-based reflected appraisal of incompetence significantly mediated the effect of professor English-speaking status on first impressions of students' warmth (indirect effect =  $-.25, SE = .08$ , bootstrapped 95% CI  $[-.42, -.11]$ ). Adding students' self-rated English proficiency as a covariate did not alter the significant pattern of mediation results (indirect effect =  $-.20, SE = .07$ ; 95% CI  $[-.35, -.07]$ ).

### POSTTESTS

In Experiments 1 and 2, we manipulated the professor's country of origin (e.g., United States vs. China) as a subtle way to vary the students' perceptions of the professor's native English-speaking

status. This also has face validity given that students are much more likely to know the country a professor is from and not whether they are a native English speaker. Our manipulation checks confirmed that participants perceived the professors from native English-speaking countries as significantly more fluent in English than they did the professors from nonnative English-speaking countries. However, our way of manipulating native English-speaking status raises two potential alternative explanations. First, it could be that our results stem not from the threat of writing to a native English-speaking professor but from differing attitudes toward the professor's country of origin. Second, nonnative English-speaking students might feel closer to the Chinese professor than to the American professor because of a shared experience in learning English. This sense of linguistic similarity can foster a feeling of in-group solidarity or closeness. These linguistic in-group dynamics might explain feelings of greater warmth toward

nonnative English speakers, without needing to refer to any experience of threat. To test these alternative explanations, we conducted two posttests. In the first posttest, we directly disentangle the effect of native English-speaking status from the professor's culture of origin by varying only the native English status information students receive. In the second posttest, we assessed potential differences in participants' perceived closeness toward the Chinese professor compared to the American professor.

### Posttest 1

**Participants.** One hundred fifty-six Israeli undergraduate business students in Israel who self-ascribed as not being native English speakers participated in exchange for course credit. Twelve participants were removed: two for writing the essay in Hebrew, one for not doing the task, and nine for using an external source (e.g., ChatGPT) to generate the text for the essay, as evidenced, for example, by all of them using the same structured sentences (e.g., "provides turn-by-turn navigation information" and "provides real-time updates on traffic conditions, accidents, road closures, and police presence"). The final sample included 144 students (43.8% men, mean age = 22.69,  $SD = 6.86$ ).

**Materials and procedure.** The design of the experiment was identical to that of Experiment 2. The only changes are listed below.

**Manipulation of professor's native English-speaking status.** Rather than manipulate the professor's native English-speaking status by altering his country of origin, we directly told participants they would be taking the EMI finance class with an international expert in finance who was either a native English-speaking professor or a nonnative English-speaking professor. To reduce the recognizability of the professor's country of origin, we called the professor "Professor Gershy." We chose the name "Gershy" using ChatGPT, which noted that the surname "Gershy" does not have a widely recognized or documented origin and may be relatively uncommon.

**First impression of students' warmth.** Two coders coded the impression of students' warmth with the same three items used in Experiments 1 and 2.

### Results

**First impression of students' warmth.** In line with Hypothesis 1, the professor's native English status predicted the first impression of students' warmth ( $F[1, 142] = 5.34, p = .02, \eta^2 = .036$ ), with

students rated as significantly less warm when they wrote to the native English-speaking professor ( $M = 4.53, SD = 1.90$ ) than when they wrote to the nonnative English-speaking professor ( $M = 5.18, SD = 1.40$ ). When students' self-rated English proficiency was added as a control, it significantly predicted rated warmth ( $F[1, 133] = 5.76, p = .018, \eta^2 = .04$ ), but the effect of professor English-speaking status on warmth remained significant ( $F[1, 133] = 6.32, p = .013, \eta^2 = .045$ ).<sup>1</sup>

### Posttest 2

**Participants.** Sixty-nine Hebrew-speaking Israeli self-ascribed nonnative English-speaking undergraduate business students in Israel (34.8% men, mean age = 22.41,  $SD = 2.17$ ) participated in exchange for experimental credit.

**Materials and procedure.** As in Experiments 1 and 2, students were told that in the upcoming semester they would be taking an EMI finance course taught by a visiting professor, and they were asked to send the professor a welcome email. Participants were asked to take a minute to think about the email they would be writing.

**Manipulation of professor's native English-speaking status.** Mirroring Experiment 2, we manipulated the professor's native English-speaking status by randomly assigning participants to send their email to either an American or Chinese professor.

**Students' degree of closeness to the professor.** We measured perceived closeness toward the professor using Aron, Aron, and Smollan's (1992) Inclusion of Other in the Self scale. This single-item pictorial measure, which uses six sets of Venn-like diagrams with increasing degrees of overlap, measures people's sense of interpersonal connectedness. Greater overlap suggests viewing the other as more part of one's in-group.

### Results

**Students' degree of closeness to the professor.** Professor's native English-speaking status (American vs. Chinese) significantly impacted the students' degree of closeness to the professor ( $F[1, 67] = 5.85, p = .018, \eta^2 = .080$ ) but in the opposite direction to the alternative prediction. Specifically, students who

<sup>1</sup> The degree of freedom reported when controlling for participants' self-rated English ability is lower than when it is not included because of a technical glitch that did not force participants to respond to these items in Qualtrics. Thus, we have some missing values for this variable.

wrote to the American professor felt significantly closer to him ( $M = 2.89$ ,  $SE = .18$ ) than did the students writing to the Chinese professor ( $M = 2.27$ ,  $SE = .18$ ). When students' self-rated English proficiency was added as a control, it did not significantly predict rated closeness ( $F[1, 66] = 0.69$ ,  $p = .41$ ,  $\eta^2 = .02$ ), nor did it change the significant effect of professor's native English-speaking status on perceived closeness ( $F[1, 66] = 5.95$ ,  $p = .017$ ,  $\eta^2 = .08$ ), alleviating concerns that students' English fluency underlies the effect.

Overall, the results of these two posttests allow us to somewhat alleviate concerns that it is linguistic in-group dynamics or the professor's country of origin—rather than his native English-speaking status—that are driving results. Indeed, we replicate results even when only the professor's native English-speaking status is known to students, and we show that despite students feeling closer to the American professor, they are colder in their communication with him.

### EXPERIMENT 3A

Having initial evidence from Experiment 2 supporting incompetence threat as a mediating mechanism and bolstered by posttest affording us with greater confidence that professor's native English-speaking status is a key psychological factor affecting students' warmth, Experiment 3a investigates the mitigating effects of using students' native non-English language and self-affirmation. Successful implementation of both interventions should reduce the self-threat experienced by students when communicating with native English-speaking professors.

Notably, this type of intervention study uses a moderation-of-process design that allows us to also increase confidence in the results obtained from the measurement-of-process design used in Experiment 2, which identified self-threat as the psychological mechanism (Spencer et al., 2005). Instead of measuring self-threat arising after self-ascribed nonnative English-speaking students write to native English-speaking professors, we directly manipulate self-threat to moderate the relationship between the independent variable of native English-speaking status and the dependent variable of communication warmth. A significant moderation effect would support the proposed causal chain and temporal sequencing while eliminating concerns of social desirability or bias in self-reporting constructs (Marr & Thau, 2014; Spencer et al., 2005).

### Participants

Two hundred ninety-nine native Hebrew-speaking Israeli undergraduate business students in Israel who self-ascribed as nonnative English speakers and indicated Waze was their favorite navigation app participated in the study for course credits and a chance to win prize money. Eleven students were dropped either because they did not write an email or because they copied the content from Wikipedia. The final sample included 288 students (48.6% men; mean age = 22.98,  $SD = 1.89$ ).

### Materials and Procedure

The procedure was like that used in Experiment 2 but with the addition of the two interventions.

**Manipulation of email writing language.** As before, students were asked to write an email to a professor who would be teaching them. Half the participants were told the professor does not speak Hebrew and as such, they had to write the email in English. The other half were also told the professor does not speak Hebrew, but they should write the email in Hebrew, and one of the departmental staff—a native English speaker—would translate. They were not informed of the specific identity of the staff member to avoid any impact of prior interactions the students might have had with this person. The purpose of having a staff member translate was to foster a supportive environment through the collaborative effort of students and staff working together.

**Manipulation of professor's native English-speaking status.** As in Experiments 1 and 2, all students were asked to write an email to a professor who was either a native (American) or nonnative English-speaker (Chinese).

**Self-affirmation manipulation.** Before reading the task instructions, we manipulated the opportunity to self-affirm. Students in the self-affirmation condition received a list of 10 values, which they were asked to rank from most to least important. They were then asked to write an essay explaining three reasons why the value they ranked in first place was important to them and to provide an example of its importance (McQueen & Klein, 2006; Sherman & Cohen, 2006). Students in the control condition were asked to write everything they had eaten or drank in the past 48 hours. This manipulation has been used in previous self-affirmation research as a baseline condition (instead of asking them to write about an unimportant value) (Cohen, Aronson & Steele, 2000) because even when asked to write about an unimportant value, students find a way to



**TABLE 3A**  
**Experiment 3a: ANOVA Predicting First Impression of Students' Warmth**

	<i>F</i>	<i>DF</i>	<i>p</i>	$\eta p^2$
Professor native English-speaking status	.15	1, 280	.695	.001
Self-affirmation	.01	1, 280	.917	.000
Professor native English-speaking status X Self-affirmation	1.47	1, 280	.226	.005
Email writing language	1.89	1, 280	.170	.007
Professor native English-speaking status X Email writing language	1.32	1, 280	.251	.005
Self-affirmation X Email writing language	2.47	1, 280	.117	.009
Professor native English-speaking status X Self-affirmation X Email writing language	4.48	1, 280	.035	.016

turn the self-reflective writing task into a self-affirming one. Writing about a neutral topic such as what they consumed solves this problem. Both groups wrote in their native Hebrew language and were asked to try and write 250 words and to commit at least five minutes to completing the task.

**First impression of students' warmth.** The first impression of students' warmth was coded as in previous experiments.

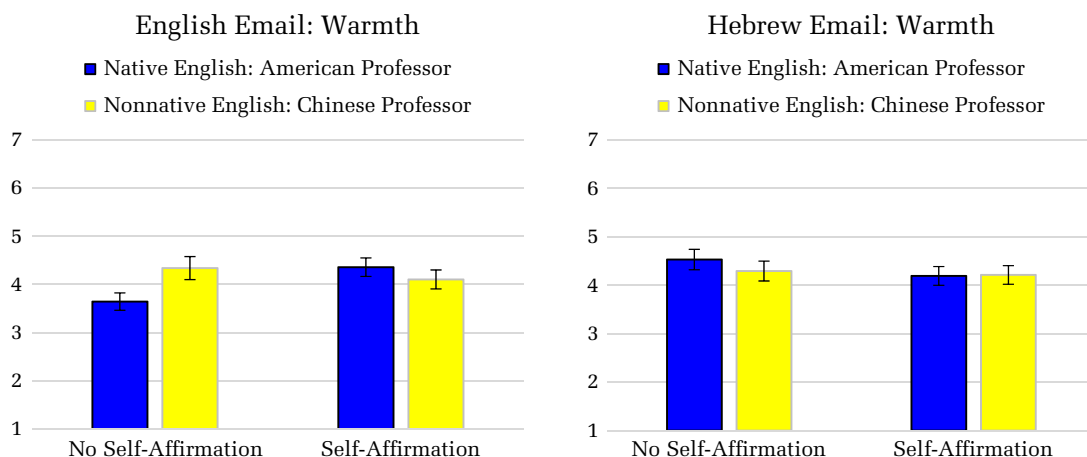
## Results

**First impression of students' warmth.** As shown in Table 3a, we found a significant three-way interaction between email writing language, self-affirmation, and professor's native English status ( $F[1, 280] = 4.48, p = .035, \eta p^2 = .016$ ). As predicted, for the writing in English condition, the conditional interaction between self-affirmation and the professor's native English status on students' warmth was significant

( $F[1, 280] = 5.48, p = .02$ ). For the writing in Hebrew condition, the conditional interaction was not significant ( $F[1, 280] = .41, p = .52$ ).

As shown in Figure 4 and as predicted in Hypothesis 5b, follow-up analysis revealed that among students writing in English, the professor's native English status was a negative and significant predictor of warmth only for students writing in English who did not get an opportunity to self-affirm (native English-speaking professor [ $M = 3.64, SE = .18$ ] vs. nonnative English-speaking professor [ $M = 4.34, SE = .24$ ]; *mean difference* =  $-0.70, SE = .30, p = .02, 95\% CI [-1.29, -.11]$ ). No differences emerged between affirmed students regardless of whether they were writing to a native English-speaking professor ( $M = 4.36, SE = .19$ ) or a nonnative English-speaking professor ( $M = 4.10, SE = .20$ ; *mean difference* =  $0.26, SE = .28, p = .353, 95\% CI [-.285, .796]$ ). Put differently, students writing in English to a native English-speaking American professor created a

**FIGURE 4**  
**Mean Values of First Impression Ratings of Students' Warmth as a Function of Email Writing Language (English vs. Hebrew), Professor Native English-Speaking Status (Native vs. Nonnative), and Self-Affirmation Intervention (Yes vs. No), Experiment 3a**



**TABLE 3B**  
**Experiment 3a: ANOVA Predicting First Impression of Students' Warmth with Control for Self-Rated English Proficiency**

	<i>F</i>	<i>DF</i>	<i>p</i>	$\eta p^2$
Professor native English-speaking status	.16	1, 279	.694	.001
Self-affirmation	.03	1, 279	.853	.000
Professor native English-speaking status X Self-affirmation	1.34	1, 279	.248	.005
Email writing language	2.02	1, 279	.157	.007
Professor native English-speaking status X Email writing language	1.18	1, 279	.279	.004
Self-affirmation X Email writing language	2.63	1, 279	.106	.009
Professor native English-speaking status X Self-affirmation X Email writing language	4.00	1, 279	.046	.014
Covariate: self-rated English proficiency	.97	1, 279	.326	.003

significantly warmer impression when they had an opportunity to self-affirm than when they did not ( $F[1, 280] = 7.38, p = .01, \eta p^2 = .03$ ). In contrast, there were no differences in impressions of warmth when writing in English to the nonnative English-speaking professor, regardless of whether students were self-affirmed or not ( $F[1, 280] = .58, p = .45, \eta p^2 = .00$ ).

As predicted in Hypothesis 5a, among students writing in Hebrew, the professor's native English status was not significantly associated with warmth, regardless of whether participants were affirmed or not (Writing in Hebrew, no self-affirm: native English-speaking professor ( $M = 4.53, SE = .21$ ) vs. nonnative English-speaking professor ( $M = 4.29, SE = .21$ ); *mean difference* = 0.24,  $SE = .30, p = .422$ , 95% CI  $[-.343, .817]$ ; Writing in Hebrew, yes self-affirm: native English-speaking professor ( $M = 4.19, SE = .19$ ) vs. nonnative English-speaking professor ( $M = 4.21, SE = .19$ ); *mean difference* =  $-0.02, SE = .27, p = .940$ , 95% CI  $[-.558, .516]$ ). As shown in Table 3b, controlling for students' self-rated English proficiency did not alter the significance of the three-way interaction ( $F[1, 279] = 4.00, p = .046, \eta p^2 = .014$ ) and it was not significantly associated with warmth ( $F[1, 279] = 0.97, p = .326, \eta p^2 = .003$ ).<sup>2</sup>

### EXPERIMENT 3B

Experiment 3b uses a yoked experimental design where native English-speaking participants assumed

the role of native English-speaking professors to examine a consequential outcome of native English-speaking professors' status: reduced desire to interact due to students' less warm first impressions. We ran this experiment on two different samples. In Sample 1, we used Mechanical Turk (MTurk) participants who self-ascribed as native English speakers. However, because it is possible that these participants would not represent the reactions of professors because they had not previously taught students, in Sample 2, we used self-ascribed native English-speaking participants with professional teaching experience.

To test whether first impressions of students' warmth significantly mediated the effect on the desire to interact, we used first impressions of students' warmth as measured in Experiment 3a. Employing different sets of raters for warmth and desire to interact minimized the likelihood of an alternative explanation, specifically that the association between warmth and desire to interact would be inflated due to same-source method bias, reflecting the similarity in the rating approach rather than an actual association between the two constructs.

### Participants and Design

Sample 1: One hundred forty-five U.S.-born participants (62.8% men; mean age = 33.73,  $SD = 9.54$ ) took part in this study for 50 cents on Mechanical Turk. All participants rated themselves as perfectly fluent in English (mean fluency = 7.00,  $SD = 0.00$  on a 7-point scale). Sample 2: To replicate the results on a sample of people with teaching experience, we first attempted to run the experiment on the Academy of Management listserv. Unfortunately, given the low response rate ( $N = 27$ ), and after trying to collect data for a couple of months, we turned to collect data from Prolific, preselecting only participants

<sup>2</sup> To alleviate concerns that using a member of staff to translate the students' emails could make them feel infantilized or disrespected, results reported in the supplemental materials demonstrate that participants writing in Hebrew wrote longer emails (which were rated as better written), performed the task better, completed the task more effectively, included more features, and were rated as more competent, with large effect sizes across measures.

who indicated in the pre-screen information that their industry was “college university and adult education,” that they were teachers, and that their primary language was English. In the first batch, 85 participants met these requirements, followed by a second batch in which we collected the remaining 33 participants. Overall, 145 participants (44.4% men; mean age = 45.43,  $SD = 15.23$ ) took part in this study. All participants indicated they were native English speakers and had previously taught students. Adding a covariate for the data source did not change the significant pattern of results. To ensure we were able to collect high-quality data from both MTurk and Prolific, we followed Aguinis, Villamor, and Ramani’s (2021) recommendations for how to achieve more robust, reproducible, and trustworthy research. For example, we preselected participants who had high approval rates (e.g., above 90% for their previous HITs on MTurk) and included only native English speakers. We used a yoked design, where each participant read a single distinct essay in a non-common and singular type of assignment, ensuring high levels of participant naivete. Finally, the study had a known sample size of 145 (i.e., the number of essays collected in Experiment 3a), it was short (requiring less than 5 minutes to complete), it provided participants with detailed information about the study, and all information was reported.

## Materials and Procedure

The study, portrayed as a task on impression formation, employed a yoked design in which each email written in English generated in Experiment 3a was randomly yoked to be read by a single native English-speaking participant who was asked to assume the role of the professor and indicate their desire to interact with the student who sent the email (for a similar design, see Anicich, Fast, Halevy & Galinsky, 2016). Specifically, we asked participants to read an email written by an Israeli university student residing in Israel to a visiting professor who would be teaching that student during the next semester in Israel. Participants were asked to put themselves in the professor’s shoes and indicate their reaction toward the individual who wrote the email. Participants read the same instructions used in Experiment 3a, but they were not provided with any information regarding the professor, including his name and country of origin. They were also unaware of the self-affirmation manipulation.

**Desire to interact.** In line with previous research (e.g., Stinson et al., 2009), we measured desire for

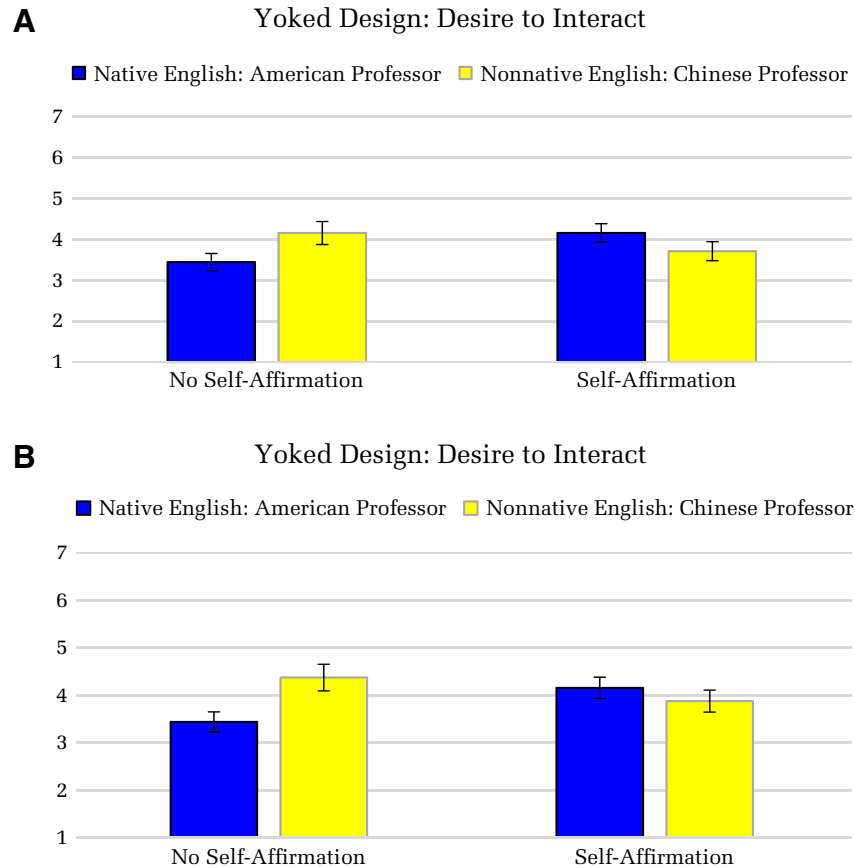
future interactions using five items rated on a 7-point scale. Sample item: “How much would you want to interact with this student in the future?”

## Results

**Desire to interact.** There were no main effects on desire to interact (Sample 1: professor native English-speaking status:  $F [1, 141] = .31, p = .58, \eta^2 = .00$ ; student self-affirmation:  $F [1, 141] = .32, p = .57, \eta^2 = .00$ ; Sample 2: professor native English-speaking status:  $F [1, 141] = 3.44, p = .07, \eta^2 = .02$ ; student self-affirmation:  $F [1, 141] = .40, p = .53, \eta^2 = .00$ ). However, as predicted in Hypothesis 6a, the interaction was significant (Sample 1:  $F [1, 141] = 5.90, p = .02, \eta^2 = .04$ ; Sample 2:  $F [1, 141] = 11.71, p < .001, \eta^2 = .08$ ). Follow-up analysis revealed that as predicted in Hypothesis 4a and as shown in Figure 5a and Figure 5b, the desire to interact with non-affirmed Israeli students was significantly lower when their email was written to a native English-speaking professor (American) than when it was written to a nonnative English-speaking professor (Chinese) (Sample 1:  $F [1, 141] = 4.10, p = .04, \eta^2 = .03$ ; Sample 2:  $F [1, 141] = 12.80, p < .001, \eta^2 = .08$ ). In contrast, there was no significant effect of professor native English status among American participants who read emails written by self-affirmed Israeli students (Sample 1:  $F [1, 141] = 1.92, p = .17, \eta^2 = .01$ ; Sample 2:  $F [1, 141] = 1.35, p = .25, \eta^2 = .01$ ). Decomposing the interaction the other way, American participants were less willing to interact with Israeli students who had written to a native English-speaking professor when these Israelis were not self-affirmed (Sample 1:  $M = 3.44, SE = .21$ ; Sample 2:  $M = 3.44, SE = .16$ ) than when they were (Sample 1:  $M = 4.15, SE = .23, F [1, 141] = 5.34, p = .02, \eta^2 = .04$ ; Sample 2:  $M = 4.16, SE = .17, F [1, 141] = 9.80, p = .002, \eta^2 = .07$ ). In contrast, there were no significant differences in desire to interact with the Israeli students when American participants read an email written to a nonnative English-speaking professor, regardless of whether the Israeli students were self-affirmed (Sample 1:  $M = 3.71, SE = .23$ ; Sample 2:  $M = 3.88, SE = .17$ ) or not (Sample 1:  $M = 4.15, SE = .28, F [1, 141] = 1.50, p = .22, \eta^2 = .01$ ; Sample 2:  $M = 4.38, SE = .21, F [1, 141] = 3.36, p = .07, \eta^2 = .02$ ).

**Mediation analysis.** In line with Hypothesis 4b, first impressions of students’ warmth significantly mediated the effect on the desire to interact (Sample 1: IMM = .23,  $SE = .14$ , bootstrapped 95% CI = [.01, 0.55]; Sample 2: IMM = .27,  $SE = .15$ , bootstrapped

**FIGURE 5**  
**Mean Values of (A) Sample 1 and (B) Sample 2 Desire to Interact as a Function of Reading Emails Written in English by Israeli Students to Native versus Nonnative English-Speaking Professor (American vs. Chinese) and Student Self-Affirmation Intervention (Yes vs. No), Experiment 3b**



95% CI = [.03, 0.62]). In line with Hypothesis 6b, results from the conditional indirect effects indicated that when reading emails from Israeli students who were not self-affirmed, the first impression of their warmth was a significant mediator of American participants' desire to interact (Sample 1: indirect effect =  $-.17$ ,  $SE = .11$ , bootstrapped 95% CI [ $-.42$ ,  $-.003$ ]; Sample 2: indirect effect =  $-.20$ ,  $SE = .11$ , bootstrapped 95% CI [ $-.44$ ,  $-.013$ ]). By contrast, first impression of warmth was not a significant mediator among American participants reading emails from self-affirmed Israeli students (Sample 1: indirect effect =  $.06$ ,  $SE = .07$ , bootstrapped 95% CI [ $-.06$ ,  $0.22$ ]; Sample 2: indirect effect =  $.07$ ,  $SE = .08$ , bootstrapped 95% CI [ $-.06$ ,  $0.24$ ]). Adding Study 3a participants' self-rated English proficiency as a covariate was not significantly associated with the desire to interact in Sample 1 ( $b = .01$ ,  $SE = .14$ ,  $p = .94$ , 95% CI [ $-.26$ ,  $.28$ ]) though it was significant in Sample 2 ( $b = -.77$ ,

$SE = .26$ ,  $p = .003$ , 95% CI [ $-1.27$ ,  $-.26$ ]). Nonetheless, adding this as a covariate did not alter the significant pattern of moderated mediation in either sample (Sample 1: IMM =  $.22$ ,  $SE = .14$ , 95% CI [ $.01$ ,  $.54$ ]; Sample 2: IMM =  $.27$ ,  $SE = .15$ , 95% CI [ $.04$ ,  $.60$ ]).

## GENERAL DISCUSSION

Applying a psychological lens to understand factors influencing interactional dynamics in EMI settings, we explore how students' self-ascribed native English-speaking status relative to that of their professors may threaten their self-esteem and impact student-professor interactions. Across four studies (and two posttests), we demonstrate that when self-ascribed nonnative English-speaking students wrote an email in English to native English-speaking professors—but not to nonnative English-speaking professors—it negatively affected the students' initial

impressions of warmth. This effect was mediated by language-based reflected appraisal of incompetence. However, the effect was mitigated when students wrote in their native non-English language or engaged in self-affirmation.

In scenarios where the self-threat was not buffered, native English-speaking participants acting as professors—both MTurk participants and academic teachers—expressed less desire to interact with these self-threatened students due to their reduced warmth, thereby actualizing the students' anticipated rejection. Notably, unlike previous EMI research that predominantly relied on interview and correlational self-report data (Macaro et al., 2018), our approach utilized random assignment to experimental conditions and a moderation-of-process methodology, replicated across linguistic samples (Israeli and French) and diverse professor nationalities (United States, Australia, China, and Brazil), allowing us to minimize potential confounds and increase confidence in causal processes.

Furthermore, the robustness of the results, even when controlling for students' self-rated English proficiency, supports the conclusion that the psychological experience of language-based self-esteem threat, rather than language proficiency, drives our results. While our findings apply to all self-ascribed nonnative English-speaking students taking EMI courses, we believe the implications hold special significance for business schools, where EMI plays a crucial role in enhancing students' English proficiency for career success, improving school rankings and competitiveness, and attracting international students for both financial and cultural benefits.

### Theoretical Implications

Our research advances the EMI literature by offering new insights into student-professor dynamics through a psychological perspective, moving beyond the traditional skill-based focus. We highlight several key contributions. First, by distinguishing between self-achieved English proficiency and self-ascribed native English-speaking status, our study enriches the existing linguistic focus in EMI research. While prior research has emphasized how inadequate English proficiency can hinder student perceptions of EMI, motivation, engagement, and academic achievement (e.g., Macaro, 2018; Macaro, 2022), we shift the lens to explore how students' self-ascribed native English-speaking status relative to that of their professors affects their self-esteem, independently of English proficiency. This approach highlights a previously

underexplored factor: the psychological anticipation of devaluation when interacting with native English-speaking professors.

Second, we introduce sociometer theory as a novel framework to extend the psychological understanding of student-professor dynamics in EMI contexts. Sociometer theory posits that self-esteem acts as a social gauge, monitoring potential acceptance or rejection in interpersonal interactions (Leary & Baumeister, 2000; Stinson et al., 2009). Applied to EMI settings, the theory suggests that self-ascribed nonnative English-speaking students anticipate a diminished sense of self-worth when they expect to communicate in English with native English-speaking professors. This perceived threat of devaluation triggers a reduction in warmth as a self-protective strategy against potential relational rejection, potentially damaging the student-professor relationship before it even forms. Reduced warmth is problematic because strong teacher-student rapport is critical for student engagement, motivation, and academic success (Pianta, 1999; Quin, 2017). By shifting focus from skill-based explanations to relational and self-esteem dynamics, sociometer theory offers new ways to understand and address psychological barriers to engagement in EMI.

Third, our findings suggest a paradigm shift in the goals of EMI programs. The results imply that the purpose of EMI should go beyond enhancing students' English proficiency to fostering an environment where students feel confident and comfortable using English, regardless of their native speaker status. While skill-based proficiency is essential, our findings highlight the equal importance of students' psychological comfort and sense of self-worth in using English, which directly influences their interaction with professors. If anticipated rejection from native English-speaking professors becomes a reality, it may harm self-esteem and lead to a broader reluctance to engage in English contexts—an issue that is particularly detrimental for business students aiming for success in the global market. Therefore, EMI interventions should not only enhance language skills but also address self-threats tied to linguistic status differences, fostering a greater willingness to engage with professors.

Fourth, by examining how expectations shape reality in EMI contexts, we add to existing theories on learning and engagement. Our findings demonstrate that students approach each course with anticipatory perceptions, particularly in EMI settings where their self-ascribed language status primes expectations of devaluation and rejection. These anticipatory

beliefs can not only impact student-professor interactions but also broader academic behaviors, such as students' effort, participation, and identification with the course content (Pianta, 1999; Quin, 2017). Incorporating a psychological perspective provides a more nuanced understanding of how these self-perceptions influence interpersonal relationships and how they could potentially impact overall academic performance, suggesting that theories of student engagement and belonging should integrate the role of psychological readiness and perceived relational value.

Fifth, and related to the previous point, our theoretical contributions extend beyond interpersonal dynamics and the incorporation of sociometer theory. We open avenues for integrating other psychological theories into EMI research, particularly by examining how individuals respond to anticipated negative competence-related beliefs—such as the perception that nonnative English speakers are less capable, skilled, and intelligent due to their linguistic background. For example, stereotype threat theory offers a lens to explain performance-based outcomes in EMI. This theory suggests that a salient negative stereotype about one's expected performance—in this case reflected appraisals of incompetence primed by self-ascribed native English status—can lead to a disruptive psychological state, causing individuals to underperform (e.g., Aronson et al., 1999; Spencer et al., 2016; Steele & Aronson, 1995). Relevant performance measures within EMI may include academic achievement, identification with the field of study, or effective learning processes.

Sixth, our theoretical framework can also be broadly applied to research on nonnative English-speaking students in Anglophone universities. Although not the focus of our empirical investigation, estimates suggest that there are over 4.1 million tertiary international students worldwide, with more than half studying in English-speaking countries such as the United States, Australia, the United Kingdom, and Canada (OECD, 2021). A review of research on international students within these countries, similar to research on international students worldwide, reveals that English proficiency is considered a key source of adjustment and academic achievement challenges (Andrade, 2006; Smith & Khawaja, 2011; Wu, Garza & Guzman, 2015). While international students are encouraged to interact with native English-speaking students and professors to improve their English, some report feeling unwelcome and perceived as less competent (e.g., Chutz & Richards, 2003; Parks & Raymond, 2004). These perceptions

may be particularly harmful in business schools, where teamwork and collaborative projects are common. In this context, students' self-ascribed nonnative English-speaking status could serve as a potentially important factor in shaping interaction dynamics, offering new theoretical and practical insights into improving international students' social adjustment and academic success. Would reflected appraisal of incompetence and anticipated rejection have an even greater impact on international students in Anglophone universities? Unlike the EMI context, where the self-threat may be limited to interactions with a native English-speaking professor who teaches the class, international students in these English-speaking countries are bombarded with native English-speaking professors in numerous daily experiences. Does the element of self-selection—choosing to study abroad—help to alleviate the threat? Much remains to be explored.

Finally, our methodological approach sets itself apart from prior EMI research, which has largely relied on interviews, observations, and self-report questionnaires (e.g., Macaro, 2022; Macaro et al., 2018). Grounded in established psychological paradigms (e.g., Cohen & Sherman, 2014; Leary & Baumeister, 2000; Stinson et al., 2009), we use an experimental perspective, employing moderation-of-process designs (Spencer et al., 2005) to provide causal evidence for self-threat as a key psychological mechanism driving nonnative English-speaking students' reduced warmth toward native English-speaking professors. This method allows us to pinpoint when self-threat arises in EMI contexts and how it can be effectively mitigated while eliminating alternative explanations of biases in self-reporting constructs or the possibility of priming the self-threat mechanism. Elaborating on sociometer theory (Leary & Baumeister, 2000; Stinson et al., 2009), we show how self-affirmation and use of native language can be used proactively to deactivate the self-threat gauge and consequently prevent the self-fulfilling prophecy of rejection from manifesting. Within the EMI context, this allows students to avoid self-harm by reducing defensive responses and increasing the likelihood that native English-speaking professors would desire to interact with them. This experimental paradigm advances EMI research by offering a systematic approach to manipulate key factors influencing student reactions to EMI-related variables, while also enabling small-scale testing of the efficacy of various interventions to improve EMI outcomes.

Taken as a whole, our work highlights the broader implications for EMI research and beyond, demonstrating that incorporating psychological perspectives

enhances the understanding of nonnative English-speaking student experiences. While a skill-based explanation has traditionally dominated EMI research, our integration of sociometer theory and stereotype threat theory uncovers critical psychological dynamics that might impact student engagement, performance, and interpersonal connections. This comprehensive framework—and methodological approach—provides a system to advance the understanding of barriers to learning and underscores the importance of addressing both relational and psychological factors to improve educational experiences for nonnative English-speaking students.

### Practical Implications

Gaining insights into the factors responsible for unsuccessful EMI implementation—and consequently how to address them—is particularly important for business schools. Indeed, spurred by a demand to internationalize and the belief that English provides a gateway for greater career success, business schools have shown exponential growth in the number of EMI courses offered but provide little guidance for teachers or students on how to approach these courses effectively (Lueg & Lueg, 2015; Thompson, Takezawa & Rose, 2022). From a practical perspective, we demonstrate how infusing EMI with native language communication and using self-affirmation can serve as effective interventions, helping self-ascribed nonnative English-speaking students bridge the native-nonnative divide with their professors. Although it would be fruitful for future research to explore the long-term efficacy of such interventions, we operationalize these into a list of actionable steps that professors and university administrators can consider taking.

Specifically, in terms of native language use, we do not advocate for students to communicate solely in their native language, as this may hinder their long-term learning and cultural competency. Instead, our findings suggest that the best approach may be having native English-speaking professors and nonnative English-speaking professors teach in tandem. Further, professors could familiarize themselves with the local language while allowing students to alternate between communicating in their native language and English. Additional practical solutions could include engaging interpreters in the classroom, encouraging students to volunteer as interpreters during class sessions and facilitating multilingual group discussions.

In terms of self-affirmation, we recommend professors or EMI administrators implement pre-class affirmation assignments. This approach aims to create a self-reinforcing adaptive cycle for self-ascribed nonnative English-speaking students. If students engage in self-affirmation before meeting professors, they are likely to be warmer in their communication. This will encourage more desire for interaction from professors, thereby enhancing the students' self-esteem and subsequent performance. This performance improvement then raises professors' expectations of the students, creating a cycle of adaptive potential and fostering a "narrative of personal adequacy" (Cohen & Sherman, 2014: 341). Evidence supporting such long-lasting effects comes from field interventions where students wrote two to five 10-minute self-affirming assignments in class over a year, significantly boosting minority student achievement in public schools, with effects that persisted for years (Cohen, Garcia, Apfel & Master, 2006; Cohen, Garcia, Purdie-Vaughns, Apfel & Brzustoski, 2009; Sherman et al., 2013). Similar positive outcomes were observed in college students (e.g., Harackiewicz, Canning, Tibbetts, Giffen & Hyde, 2014). For self-ascribed nonnative English-speaking students, we suggest starting this intervention before students and professors meet to avoid the effects of anticipatory rejection on initial communication. This proactive approach can prevent defensiveness and set the stage for an adaptive cycle. For international students transitioning to Anglophone universities, the intervention could begin before their arrival, creating a foundation of positive beliefs at the outset of this significant transition. Notably, because research suggests affirmations are more effective when students are unaware of the purpose of these exercises and when they do not feel singled out (Sherman, Bunyan, Creswell & Jaremka, 2009), we propose presenting the intervention as a standard course requirement.

Finally, university administrators should collaborate with professors to establish a psychologically safe environment in EMI courses. This environment should enhance students' sense of competence, acknowledge potential challenges, and offer empathy (Neeley, 2012). Achieving this involves two main steps. First, it is essential to educate native English-speaking professors about the self-threat that self-ascribed nonnative English-speaking students may experience. This is critical considering research on international students showing that professors often misattribute students' difficulties to cultural and educational factors (Andrade, 2006).



This is likely to be the same for EMI professors. Second, providing professors with a set of pedagogical tools to enhance the emotional and social support they offer students is crucial. For instance, professors could be encouraged to undertake native language training and to reach out to students before classes commence with a supportive email acknowledging their fears. In this regard, it is worth exploring whether professors who have a reputation as being supportive and nonnative English-speaking can alleviate students' fear of not being sufficiently valued as a relational partner, allowing students to feel the psychological safety to tilt toward behaving warmly. Notably, these solutions—especially the creation of a supportive environment and self-affirmation—are also applicable to professors teaching nonnative English-speaking students in Anglophone universities.

### Limitations and Future Directions

While our experiments offer robust insights, they also present limitations that suggest promising avenues for future research. For example, there is an obvious advantage to focusing on the EMI context and experimentally manipulating the professor's native English status as these enabled us to alleviate potential confounds. Further, our request that students write an email in English to a visiting professor who will teach the students has face validity because it is a common occurrence in university contexts and email allows us to access the entirety of the content on which first impressions are formed. At the same time, the experimental rigor we achieved to test the onset of the student-professor relationship does not allow us to investigate how these processes unfold over time to determine what impact it has for ultimate EMI course success or to extrapolate to communication mediums other than email. Moreover, we cannot generalize our findings to contexts such as when nonnative English speakers move to Anglophone countries. Future research should explore these issues.

It is further noteworthy that in most of our experiments, we manipulated the professor's native English-speaking status indirectly by varying his country of origin, email, and name. This provided a face-valid approach to create the impression of either a native or nonnative English-speaking professor using information typically accessible to students. The results of our manipulation checks showing that professors from Anglophone countries were viewed by the students as significantly more fluent in English underscores this. And yet, some of the effects observed may be due to

participants' perception of country differences rather than native English status differences. This option seems unlikely considering our effect replicated across different Anglophone cultures (Australia and the United States) and different non-Anglophone cultures (China and Brazil). Crucially, in Posttest 1, we directly disentangle the effect of native English-speaking status from the culture of origin by using a professor from a single culture and varying only native English-speaking status information. As predicted, we find that participants wrote warmer emails to nonnative English-speaking professors than to native English-speaking professors.

Of course, some of our results may also be attributed to differences in in-group or out-group status related to English. We attempted to address the issue of linguistic in-group dynamics or a sense of shared linguistic hardship by demonstrating that participants tended to view the American professor as closer than the Chinese professor (Posttest 2), despite consistently finding in all experiments that students were warmer toward the Chinese professor than they were to the American professor. Naturally, this single test does not entirely rule out the potential influence of explanations grounded in social identity theory, which can offer additional important insights into the psychological experience of students in EMI settings. Future research would be wise to explore this avenue further.

Additionally, we acknowledge that our experimental manipulation of native English-speaking status in text-based scenarios was somewhat simplified. We either explicitly informed students that the professor was a native English speaker or manipulated the professor's name and country of origin to suggest an Anglophone background. However, in real-world contexts, the situation is far more complex. For example, students' perceptions of a professor's native English-speaking status can be influenced by various factors such as accent, cultural background, and personal biases. This introduces a gap between the controlled conditions of our experiments and actual classroom situations. Future research should focus on classroom-based studies to better capture these complexities and address the more nuanced aspects of native English-speaking status in educational settings.

It is also notable that not all nonnative English speakers may be equally affected by the native English-speaking status of their EMI professors. For example, just as academic scholars' degree of consciousness of the stigma associated with being a nonnative English speaker significantly affects the threat to their professional identity (Horn, 2017), students with greater stigma consciousness may be

more susceptible to the threat of anticipatory rejection. It is also noteworthy that we did not measure actual EMI professors' behaviors toward self-ascribed non-native English-speaking students. Instead, we had MTurk participants and academic teachers assume the role of the professor in our scenario and predict their intended desire to interact with the student. We are encouraged by research showing that self-predictions of behavioral intentions are good predictors of actual behavior (Armitage & Conner, 2001), especially if the two have corresponding levels of specificity, as our measure does (Krause, 1995). Further, our finding that teachers were less inclined to interact with students displaying lower warmth in communication also fits with research showing that job candidates who elicit lower positive affectivity from employers are less likely to be hired (e.g., Fox & Spector, 2000; Rivera, 2015). In qualitative interviews with employers, Rivera (2015: 1353) found that "many believed that their emotional reactions to candidates were more reliable metrics of candidate quality than resume characteristics." Consistent with our theoretical framework, she noted that this evaluative process begins even before any face-to-face meeting, as employers form "an energy expectation of how emotionally rewarding they believe interacting with the candidate will be" (Rivera, 2015: 1357). Nonetheless, we urge researchers to explore these issues directly and collect data on actual behavioral outcomes of student-professor interactions.

Finally, across experiments, we had students write emails only to male professors to avoid attributing any difference in participants' communication to the gender of the professors. This decision was informed by previous research demonstrating that students may perceive male and female faculty members differently. For example, students attribute higher educational attainment levels to male than female teachers (Miller & Chamberlin, 2000). Similarly, business students who evaluated either a male or female professor's lecture rated the male professor's teaching effectiveness more positively, viewing him as more organized, credible, and enthusiastic, even though the lecture content was identical (Fandt & Stevens, 1991). These findings align with broader research on gender stereotypes demonstrating a public belief in a female advantage in warmth but a male advantage in agency (Eagly, Nater, Miller, Kaufmann & Sczesny, 2020). Research further suggests that the bias of viewing male professors as more competent is stronger among male students (Boring, 2017; Burns-Glover & Veith, 1995). Given these patterns, manipulating professors' gender would be an interesting

direction for future research. For example, because female professors are generally viewed as less agentic but warmer, having them as native English-speaking EMI professors might dampen self-threat for self-ascribed nonnative English speakers, especially among male students. We hope future research will explore these questions.

## CONCLUSION

The philosopher Ludwig Wittgenstein famously stated, "The limits of my language mean the limits of my world." The main purpose of EMI courses is to expand nonnative English-speaking students' access to the world by improving their English proficiency and ability to interact in intercultural contexts while also increasing the internationalization of non-Anglophone business schools. Supporting the impetus for EMI, a plethora of work has shown that international exposure can improve career prospects, managerial ability, and creativity (Leung, Maddux, Galinsky & Chiu, 2008; Lu, Swaab & Galinsky, 2021; Maddux et al., 2014; Tadmor, Galinsky & Maddux, 2012). Yet, our study shows that unless properly implemented, EMI could limit students' worlds by reducing their self-esteem. We hope that by uncovering the "hidden costs" that come with English communication for self-ascribed nonnative English speakers as well as by discovering some useful interventions, we demonstrate how psychological theory can pave the way for better EMI implementation and suggest ways to neutralize the sense of threat, ultimately enabling these students to derive greater benefits from their interactions with native English speakers.

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