FITTING IN AND FEELING REAL: STATE AUTHENTICITY AS FIT BETWEEN

IDENTITY AND ENVIRONMENT

by

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Abstract

State authenticity (SA) is defined as “the sense or feeling that one is currently in alignment with one’s true or genuine self” (Sedikides et al., 2017). Recent models have conceptualized SA as distinct from trait authenticity and as a key predictor of situation selection with implications for how people self-sort by social identities (see Schmader & Sedikides, 2017). Critically, experiences of SA are predicted to arise from three distinct types of fit to the environment: self-concept, goal, and social fit. The present work aims to empirically test key assumptions of the SAFE (State Authenticity as Fit to the Environment) model and apply this model to academic (Chapter 2) and cultural (Chapter 3) contexts. In Chapter 2 (Studies 1-2), I review how identification with engineering versus psychology predicts greater approach intentions in the environment associated with engineering versus psychology, as fully mediated by SA. In Study 2, I review how SA can be understood as a mechanism of gendered occupational segregation. In Chapter 3 (Studies 3-4), I review how identification with mainstream culture predicts greater SA, as mediated by the three types of fit to the environment. In Study 4, I review how these outcomes also translate into student motivation on campus. Together, these findings add to current understandings of SA and highlight identification with one’s environment as a key antecedent to fit and authenticity.
Lay Summary

The present work seeks to review and test key assumptions of the SAFE (State Authenticity as Fit to the Environment) model and apply this model to academic and cultural contexts. The results suggest that identification with one’s environment is an important antecedent of feeling a sense of fit and authenticity within one’s immediate context. With respect to academic environments, we find that greater identification with engineering versus psychology predicts intentions to approach the environment associated with engineering versus psychology, as explained through state authenticity. With respect to cultural environments, we find that greater identification with the mainstream culture predicts a greater sense of state authenticity in a mainstream cultural institution (i.e., a university), as explained through greater self-concept, goal, and social fit. Together, these findings highlight the importance of considering identification and fit to one’s environment as key antecedents of state authenticity and approach motivation.
Preface

Chapters 2 and 3 are based on work conducted in the Social Identity Laboratory by Audrey Aday and Dr. Toni Schmader. I (Audrey Aday) was responsible for study design and data analysis, as supervised by Dr. Schmader. The studies in Chapter 3 were conducted in collaboration with Constantine Sedikides. For studies requiring in-person data collection (Study 1), trained research assistants were responsible for recruiting and collecting survey responses. These studies are approved by the Behavioral Research Ethics Board at The University of British Columbia under the protocol “Situated Authenticity” (certificate number H14-02029).
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Chapter 1: Introduction

“To will to be that self which one truly is, is indeed the opposite of despair”

(Kierkegaard, 1849/1973, p.3)

Scholars have long been interested in what it means to be authentic. The elusive notion of authenticity has become so pervasive in intellectual circles and philosophical rhetoric that some scholars contend the so-called “age of autonomy” once thought to encompass Western thought and practice is now subsumed by the “age of authenticity” (Taylor, 2007; Ferrara, 1998). In lay terms, authenticity refers to feeling like one’s true self (which is not necessarily the same as an ideal or usual self; Schlegel, Hicks, Arndt, & King, 2009). As a construct, authenticity has been referred to as a language of the self (McCarthy, 2009). Indeed, one key feature of authenticity is its ability to communicate information about one’s identity to oneself. This is a core tenet of the theoretical model and work presented in the present paper.

Despite authenticity’s rich interdisciplinary background and long history, it remains relatively understudied as a construct. As I will outline here, much of the work undertaken on understanding authenticity has approached this construct as a trait, rather than a psychological state that varies across contexts and situations and operates in tandem with other psychological constructs. The goal of the present work is to further our understanding of state authenticity and its component processes. In this paper, I will review a recent theoretical framework of state authenticity as a signal of fit between identity and environment (SAFE; Schmader & Sedikides, 2017). Having specified the core assumptions and components of the theory, I will summarize studies aimed at testing key tenets of this model and illustrate how state authenticity has broader implications for motivation and self-segregation along dimensions of identity. Specifically, I examine state authenticity as a predictor of situation selection in the context of academic and
cultural fit and consider how state authenticity can account for identity-based differences on situation selection.

1.1 State Authenticity as Distinct from Trait Authenticity

Historically, authenticity has been regarded as a dispositional attribute. Humanistic psychology operationalized authenticity as a stable congruence between one’s self-concept and self-experience. Rogers’ (1961) notion of the fully functioning individual encompassed one who takes a nondefensive stance toward evaluating information, has openness and trust toward their own internal experiences, and leads fulfilling interpersonal relationships. Building on these notions, modern psychological perspectives operationalize authenticity as the unobstructed operation of one’s true- or core-self in one’s daily enterprise (Goldman & Kernis, 2002; Kernis, 2003; Kernis & Goldman, 2006). By this view, authenticity is conceptualized as a psychological trait.

Also apparent in the humanistic school of thought is a prevailing view of authenticity as a signal, which functions to communicate to the individual those times when the self is integrated and organized, and when it is not (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). By this view, authenticity is conceptualized as a psychological state. Recent empirical findings in the literature provide support for this perspective. Across two studies using naturalistic methods of data collection (Day Reconstruction Method, Study 1; experience sampling, Study 2), Lenton, Slabu, and Sedikides (2016) observed greater within-subject than between-subject variance in authenticity when it was measures across a series of days (see also Heppner et al., 2008). Such findings suggest that authenticity is better conceptualized as a state. State authenticity is distinct from, but related to, trait authenticity. Just as experiences of state anxiety overlay an individual’s base-rate propensity for trait-level anxiety (Endler, Parker, Bagby, & Cox, 1991), state
authenticity captures a unique phenomenological experience that overlays an individual’s general base-rate propensity for authenticity.

Unlike trait authenticity, state authenticity encompasses “the sense of feeling that one is currently in alignment with one’s true or genuine self; that one is being their real self” (Sedikides, Slabu, Lenton, & Thomaes, 2017). Such definitions hearken to classic humanistic notions of state authenticity as a signal, indicating to the individual those occasions when they most feel like their true self.

1.2 Need for a Guiding Theoretical Framework of Authenticity

Although the study of state authenticity is in its relatively early stages, key findings in the literature have highlighted the benefits of feeling authentic. Greater state authenticity has been linked to greater psychological well-being (Kifer, Heller, Perunovic, & Galinsky, 2013; Thomaes, Sedikides, Bos, Hutteman, & Reijntjes, 2017), a positive and moral sense of self (Newman, Bloom, & Knobe, 2014), and affirmation of self-integrity (Gino, Kouchaki, & Galinsky, 2015; Jongman-Sereno & Leary, 2016). These outcomes point to the intrapsychic benefits of feeling authentic, but less is known about how state authenticity actively changes the way individuals navigate and interact with their external environment. Thus, a guiding theoretical framework to organize and inform this question is necessary.

1.3 The SAFE Model

One recent theoretical model proposes that State Authenticity is a signal of the Fit between one’s identity and the Environment (SAFE; Schmader & Sedikides, 2017). According to the SAFE model, state authenticity can be experienced as a result of three distinct, but interrelated types of fit between the self and environment: (1) self-concept, (2) goal fit, and (3) social fit. Each type of fit cues a corresponding state of fluency that facilitates an overall sense or feeling of state
authenticity. Critically, experiences of state authenticity are posited to have implications for situation selection, promoting a desire to approach or return to those situations where one feels authentic and avoid situations where one feels inauthentic. Below, I review the theoretical basis for each of the three types of fit, as well as their implications for situation selection. I end by addressing how the present work will seek to test the core tenets of this theoretical framework and apply this theoretical framework to understand two unique contexts in which situation selection is a key outcome.

1.3.1 Self-Concept Fit and Cognitive Fluency

The first type of fit one can experience to their environment is self-concept fit, or a match between one’s core self-concept and the broad domain that an environment represents (Schmader & Sedikides, 2017). Cognitively, self-concept fit represents activation of a familiar, chronically accessible self-concept by core features of the environment. Environments activate self-cognitions most relevant to the situation at hand (Markus & Wurf, 1987). When certain features of the environment repeatedly activate a set of self-cognitions, these self-cognitions become the default self-concept within that environment (Schmader, Croft, & Whitehead, 2014). According to the SAFE model, the key outcome of such experiences of self-concept fit is proposed to be a sense of cognitive fluency. Given that repeated activation of cognitions facilitates fluency of processing (Reber, Winkielman, & Schwarz, 1998; Zajone, 2001), and cognitions that are processed more fluently are judged to be more true (Reber & Unkelbach, 2010), such experiences of self-concept fit and cognitive fluency are likely to cue a sense of the self as true (i.e., state authenticity).
1.3.1.1 Implications of Self-Concept Fit for Situation Selection

Individuals are motivated to seek cognitive balance and consistency with respect to the self and identity (Cvencek, Greenwald, & Meltzoff, 2012; Swann, 2011). Drawing from theory on cognitive-affective consistency (e.g., Festinger, 1957; Heider, 1958; Osgood & Tannenbaum, 1955), when cognitive imbalance within the self-concept is detected, individuals will attempt to restore a sense of self-consistency and stability. As a result, individuals tend to gravitate toward those environments that activate the default self-concept (i.e., cue a sense of fit) and avoid environments whose core features strike an imbalance between the current and default self-concept (i.e., cue a sense of misfit; e.g., Cheryan, Plaut, Davies, & Steele, 2009). Much like individuals seek validation of their self-concept from other social agents in the environment (Swann, 2011), they might similarly seek out situations and environments that validate a default self-concept and cue a sense of state authenticity, even if this sense of state authenticity is merely anticipated (i.e., not actually experienced).

1.3.2 Goal Fit and Motivational Fluency

The second type of fit experienced to the environment is goal fit, or the existence of structures within an environment that facilitate, or at the very least afford, one’s most prized goals (Schmader & Sedikides, 2017). Drawing from established theory on goal affordance (e.g., regulatory fit theory; Freitas & Higgins, 2002; Higgins, 2005), the notion of goal fit presupposes that individuals experience optimal motivation and performance when the demands of tasks in the environment are a match to their own orientation toward the task. For instance, students from Eastern cultures, which do not tend to endorse a connection between talking and thinking as in Western cultures, perform better on tasks requiring quiet reflection as opposed to think-out-loud procedures (Kim, 2002). The key outcome of such experiences of goal fit is motivational
fluency, or the sense that one’s actions are self-determined. The experience of one’s actions as self-determined is a key predictor of authenticity (Ryan & Deci, 2000). Several studies utilizing a variety of methodologies (e.g., naturalistic observation, experimental manipulations, experience sampling) have identified satisfaction of need for autonomy as a key correlate of authenticity (Heppner et al., 2008; Thomaes, Sedikides, van den Bos, Hutteman, & Reijntjes, 2017). Thus, environments in which one’s actions are matched to the demands of the task, and subsequently judged to be self-determined, are likely to be those that facilitate a sense of state authenticity.

1.3.2.1 Implications of Goal Fit for Situation Selection

Past work on person-environment fit suggests that individuals are generally driven to seek out environments that fit their goals. According to goal congruity theory (Diekman, Clark, Johnston, Brown & Steinberg, 2011; Diekman, Steinberg, Brown, Belanger, & Clark, 2017), individuals are specifically motivated to approach situations and contexts which facilitate or afford personally valued goals, and avoid or disengage with those that do not. This theoretical framework has been applied to understand women’s differential participation in STEM careers, but can also be generalized to other contexts in which there is a misalignment of individual goals and environmental structures. For example, individuals who strongly value communion are motivated to avoid low-communion work contexts, even when it means bypassing opportunities for career advancement (McCarty, Monteith, & Kaiser, 2014). Alternatively, when careers typically thought of as affording agentic goals are reframed as affording communal goals, those who value communal goals express greater interest and motivation to pursue those careers (Clark, Fuesting, & Diekman, 2016; Diekman, Clark, Johnston, Brown, & Steinberg, 2011). Thus, individuals are motivated to pursue opportunities and approach situations that facilitate a sense of goal fit.
1.3.3 Social Fit and Interpersonal Fluency

The third and final type of fit one might experience to their environment is social fit, or acceptance and validation of one’s true self by others in that environment. The need to belong is a fundamental human motivation (Baumeister & Leary, 1995), placed beside basic requirements such as physiological needs and safety in Maslow’s hierarchy of needs (Maslow, 1968). Social belonging is a critical component of human functioning; evolved psychological mechanisms are tuned to detect even the slightest change in social acceptance (Leary, 1999; Leary, Tambor, Terdal, & Downs, 1995; Pickett, Gardner, & Knowles, 2004). Empirical work in the realm of ingratiation and impression management (for a review, see Gordon, 1996, and also Leary & Kowalski, 1990) suggests that individuals are able to construct identity images in order to gain social approval and acceptance of others in the social environment. Yet an important caveat of such tactics is that they might not feel authentic to the individual. Indeed, Goffman’s (1959) original work on impression management posited that individuals feel authentic when they are able to enact a true self in social interactions. Social fit, then, specifically refers to acceptance of one’s true self (as opposed to a constructed identity image) by other social agents in the environment. The key outcome of such experiences of social fit is a sense of interpersonal fluency, or the ability to enact one’s true self in social interactions without needing to conform to others’ expectations or values. Indeed, people tend to feel most inauthentic in situations where they are required to gain social acceptance by conforming to others’ standards (Erickson, 1994, 1995). By this reasoning, individuals should feel most authentic in environments where they feel accepted for who they truly are and are consequently able to enact their true self in social interactions.
1.3.3.1 Implications of Social Fit for Situation Selection

Self-verification theory (Swann, 2011) posits that individuals accept and explicitly evoke social feedback that confirms their self-views, even if those self-views are unfavorable or negative. Individuals gain a sense of coherence and self-consistency by seeking out social environments where others validate their self-views (Lecky, 1945). On the group level, the stable coherence of self-views can increase the predictability of individual behavior and maximize group functioning (Goffman, 1959; Swann, 2011). In this respect, it is adaptive for people to approach environments in which their true self-concept is validated by other social agents (i.e., environments which cue social fit and state authenticity). On a broader level, individuals are generally motivated to seek environments that cue a sense of belonging (Baumeister & Leary, 1995; Leary & Kelly, 2009). Based on these findings, we would expect that individuals are motivated to approach environments that cue social fit and avoid environments that signal misfit.

1.4 Considering the Relations between the Three Types of Fit

Currently, no published work has explicitly set out to test the assumptions highlighted above. That said, there is recent empirical evidence to suggest that experiences of state authenticity can be grouped into instances of self-concept, goal, and social fit. For instance, one study (conducted independently from the development of the SAFE model) coded the content of essays in which 268 undergraduate students were asked to describe an event during which they felt most like their true or real self (Lenton, Bruder, Slabu, & Sedikides, 2013). The themes that emerged from the content analysis broadly encompassed: (1) engaging in familiar experiences (activating self-concept fit), (2) being engaged in active goal pursuit (activating goal fit), and (3) spending time with close others (activating social fit). A fourth theme – (4) fun, amusement, or excitement – is likely to represent the affective outcome of feeling a sense of fit through any of the more specific
paths. Indeed, past work finds that the phenomenological experience of state authenticity is inherently tied to positive affect (Lenton, Slabu, Sedikides, & Power, 2013; Slabu, Lenton, Sedikides, & Bruder, 2014). In a more recent study aimed at validating the SAFE model (developed after the studies presented in this thesis), our lab collected data from 259 participants on Amazon’s Mechanical Turk platform and found evidence for a three-factor solution, with items measuring each type of fit loading onto three distinct factors (Aday, Schmader, & Sedikides, in prep). In sum, although the tripartite conceptualization of self-concept, goal, and social fit is largely driven by theory; burgeoning evidence provides converging empirical support for a three-factor model.

Despite said evidence for the three distinct types of fit, it is not the goal of the current work to argue that self-concept, goal, and social fit are unrelated constructs. Indeed, across many situations, one type of fit can co-occur and interact with another. For instance, an employee might be able to elicit social acceptance from their coworkers (social fit) to the extent that they feel their workplace matches their sense of who they truly are (self-concept fit). Similarly, a student will feel a greater match between their default self-concept and the environment (self-concept fit) when their instructor presents class material in a way that is congruent with how they prefer to learn (goal fit). Of course, in other situations, one type of fit can occur in the absence of another. An employee can feel strongly committed to the values of their organization (goal fit), even if their coworkers do not accept them for who they truly are (social fit). Such interrelations between the three types of fit are an important consideration in the review of self-concept, goal, and social fit.
1.5 Implications of State Authenticity for Situation Selection

Above, I have reviewed how each type of fit to the environment guides situation selection. A key consideration of the SAFE model is how all three types of fit cue approach motivation through a common, gestalt feeling of state authenticity. There is extant literature documenting people’s general motivation to approach environments in which they expect to feel authentic and avoid motivations in which they expect to feel inauthentic (Leary, Adams, & Tate, 2006; Lenton et al., 2013; Sedikides et al., 2017). The SAFE model posits that this relationship between state authenticity and approach motivation is an important explanatory mechanism of the observed relationship between self-concept, goal, and social fit and approach motivation. In other words, the relationship between the three types of fit and approach motivation can be accounted for by a feeling of state authenticity. As is apparent from this review, although several bodies of work have documented the individual links between self-concept fit, goal fit, social fit, state authenticity, and approach motivation, no work to date has empirically tested how these constructs might operate in tandem to predict situation selection. This is a key contribution of the present work.

1.6 The Present Research

The goal of the present work is twofold: (1) to empirically test core tenets of the SAFE model, and (2) apply this theoretical framework to understand self-segregation along dimensions of identity in two unique environments. In Studies 1 and 2 (Chapter 2), I examine how academic environments might differentially cue state authenticity for men and women, and how gender differences on anticipated state authenticity in engineering versus psychology spaces might explain the gender gap in career outcomes. In Studies 3 and 4 (Chapter 3), I expand the scope of this question to test how broader cultural environments might cue approach motivation through
actual experienced state authenticity as a function of cultural identification in the university context. I end by considering key implications of these findings for the study of state authenticity as a construct and highlight several future directions for this work.
Chapter 2: Fit to Academic Environments

The goal of Chapter 2 is to empirically test whether academic environments that afford a greater sense of state authenticity promote greater approach motivation, and whether differential levels of state authenticity can explain the gender gap in fields like science, technology, engineering, and math (STEM) and health care, elementary education, and domestic roles (HEED). Across two studies, we examine how state authenticity in the space associated with different academic domains is predicted by individual activity preferences. Importantly, we review how gender differences on these activity preferences can help to explain gendered self-segregation into different occupations that afford different degrees of authenticity. These studies were conducted in order to establish a basic paradigm that we will experimentally build on in future work.

2.1 State Authenticity as a Mechanism of Gendered Self-Segregation

A large body of literature shows that men and women tend to separate into different career trajectories and vocations (e.g., women’s underrepresentation in STEM careers, Corbett & Hill, 2015; men’s underrepresentation in HEED careers, Block, Schmader, & Croft, 2015). One novel contribution of using state authenticity as a lens through which to understand gendered occupational segregation is to highlight the way in which such gender gaps in vocational interests are sometimes self-imposed. This complements a large literature documenting the ways in which external forces situated within the environment discourage people from pursuing careers in domains where they expect to encounter these barriers. For example, external individual (e.g., self-efficacy, abilities and performance, STEM attitudes; Cheryan, Ziegler, Montoya, & Jiang, 2017), interpersonal (e.g., interpersonal acceptance, belonging; Hall, Schmader, & Croft, 2015; Hall, Schmader, Aday, & Croft, in press; Stout, Ito, Finkelstein, & Pollock, 2013), and institutional factors (e.g., policies and values of the institution; Griffith,
2010; Hall, Schmader, Aday, Inness, & Croft, in press) have all been identified as key environmental predictors of women’s underrepresentation in STEM. The present research adds to this research by examining how internal factors like authenticity also explain patterns of gendered self-segregation.

The SAFE model provides a theoretical framework through which to understand these identity-based processes of gendered self-segregation via divergent experiences of state authenticity. Research on implicit associations shows that people tend to more easily associate “women” with “family,” and more easily associate “men” with “science” and “math” (Nosek et al., 2007). For perceivers, these stereotypes often translate into different schemas of who the cultural default is within these environments (e.g., in family-related domains, women; in math- and science-related domains, men). For targets, these stereotypes can be internalized to shape one’s self-concept (see Cvencek, Greenwald, & Meltzoff, 2016). According to the predictions posited by the SAFE model, to the extent that gendered associations are internalized into one’s own self-concept, women will feel a greater sense of fit and authenticity in fields aligned with “empathizing” and “people.” These are the environments where they will feel like the culture default and more easily activate their own default self-concept, feel their values are afforded, and assume acceptance by others. Conversely, men will feel a greater sense of fit and authenticity in fields aligned with “systemizing” and “things,” where they are the cultural default.

As posited by the SAFE model, differences on fit and authenticity will translate into different motivations to select into such career trajectories. In line with this prediction, past work finds that women tend to select into careers that allow them to work with “people,” and men tend to select into careers that allow them to work with “things” (Lippa, 1998; Su, Rounds, & Armstrong, 2009). Given that systemizing-intensive STEM careers tend to earn more than
empathizing-intensive HEED careers (England, Budig, & Folbre, 2002; Kilbourne, England, Farkas, Beron, & Weir, 1994), these disparities have implications for broader societal problems like the gender wage gap and can lead to the further perpetuation of gender stereotypes. Accordingly, understanding the root cause of men and women’s selection into these different career trajectories is a critical topic of inquiry for psychological science.

The present work seeks to understand how an individual’s subjective experience (i.e., state authenticity) can be situated within an environment and contribute to gendered patterns of occupational segregation. Study 1 was a pilot study of the basic paradigm and did not include a measure of gender. Across Studies 1 and 2, however, I consider how internalized self-concepts situated within the environment motivate situation selection, as explained through state authenticity. Given that the goal of these studies is to establish a basic paradigm for later experimental work, these studies do not explicitly measure the three types of fit delineated by the SAFE model. This is an intended direction for future studies in this line of work, and is a key contribution of Studies 3 and 4 in Chapter 3.

2.2 Study 1

The goal of Study 1 was to assess the underlying assumption that identifying with a given domain would predict a greater approach orientation toward that domain. Specifically, we tested whether higher identification with psychology or engineering would predict greater approach intentions when visualizing oneself in a space associated with psychology or engineering. We also tested the preregistered hypothesis that this effect would be mediated by state authenticity experienced in those domains. Finally, we tested the preregistered hypothesis that a preference for “people” or “things” would further predict one’s identification with and state authenticity in
psychology or engineering. Preregistered documentation for this study can be found at osf.io/d85sr.

2.2.1 Method

2.2.1.1 Participants

Participants were 107 individuals recruited from common spaces at The University of British Columbia (e.g., the library, student center, food courts) during the Spring and Summer academic terms of 2017 for a two condition within-subjects design (psychology vs. engineering space). Technical errors resulted in missing condition data from 45 participants. Thus, although we preregistered collecting $N = 90$ participants, our resulting sample with complete condition data was comprised of only $N = 62$ participants. Based on this sample size, a sensitivity analysis conducted with G*Power indicated we were powered to detect a mid-sized effect of $f^2 = .13$ ($r = .34$) with power $= .80$, alpha $= .05$. Given the preliminary nature of this first study, we analyzed existing data with the goal of replicating any key effects in a larger follow-up study (Study 2). There were no outliers beyond three standard deviations from the mean on key variables in this study. Although a majority of participants were undergraduate students ($N = 50; 80.65\%$), a notable proportion were non-students ($N = 11; 17.74\%, 1$ did not identify student status) but were included in analyses. Demographic data regarding gender and ethnicity were not collected in this first study which was designed to test the basic paradigm and measures.

2.2.1.2 Procedure

Research assistants were instructed to approach individuals who appeared not to be engaged in a task. Participants were asked if they had time to take part in a brief survey. If participants agreed, they were directed toward an electronically administered consent form and survey. Participants completed baseline measures of their preference for “people” and “things,” (as an intermixed set
of 2 items) as well as measures of identification with psychology and identification with engineering (in counterbalanced order). All participants then engaged in a brief virtual tour of the psychology and engineering spaces at UBC in a 2 cell within-subjects design (order was counterbalanced and showed no effects in analyses). During each virtual tour (approximately three minutes per space), participants viewed a 360 panoramic photo while the experimenter read aloud a description of the building and domain (see supplementary materials for photos and descriptions). Immediately after virtually touring each building, participants self-reported their state authenticity and approach intentions toward that space. After participants virtually toured both buildings, participants indicated the frequency with which they visited each building (in order to control for effects of familiarity) and whether they visited the buildings out of choice or obligation.¹

2.2.1.3 Measures

Descriptive statistics and full items for all measures are reported in the supplementary material.

2.2.1.3.1 Things-People Preference

We measured preference for “things” versus “people” using a 2-item scale developed for this study based on past work by Su, Rounds, and Armstrong (2009). Participants were asked to rate their agreement with the two items on a scale of 1 (strongly disagree) to 7 (strongly agree). Preference for things was assessed with the statement, “I am interested in nonpersonal tasks involving machines, materials, tools, biological mechanisms and so forth.” Preference for people

¹ There was a substantial amount of missing data for this variable (56.45% missing for the engineering building; 33.87% missing for the psychology building); many participants had not previously visited the building in question, and could not respond to the item. Thus, the choice-obligation variable is excluded from main analyses. Full descriptive statistics for this variable are located in the supplementary material.
was assessed with the statement, “I am interested in interpersonal tasks such as caring for, persuading, entertaining, or directing others.” The two items were negatively correlated, but not to a significant degree, \( r = -0.23, p = 0.071 \).

### 2.2.1.3.2 Domain Identification

We measured domain identification in two ways. Participants were first shown a pair of circles with varying degrees of overlap between them (see supplementary materials for full measure). They were then asked to select the pair of circles that best represents the relationship between *themselves* (circle 1) and the *domain* (circle 2) in question (i.e., psychology or engineering). Next, participants completed a verbal measure of the same overlapping circle task that merely described sets of overlapping circles (as a pilot test for another study where we did not have the ability to display the images). The visual and verbal versions of the measure were highly correlated across both engineering and psychology \((r_{\text{eng}} = 0.81, p < 0.001; r_{\text{psych}} = 0.83, p < 0.001;\) these effect sizes indicate a strong correlation; Hemphill, 2003). Thus, we took the average of the two z-scored measures to yield a single index of domain identification for psychology and engineering. The combined indices of domain identification were negatively correlated between psychology and engineering, \( r = -0.32, p = 0.012 \).

### 2.2.1.3.3 State Authenticity

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\(^2\) We originally preregistered combining the measures if a *-test indicated no significant differences between both types of scales. Given that the two measures were on different scales (1 to 6 and 1 to 7 for domain identification; 0 to 100 and 1 to 7 for approach), we could not meaningfully compare mean responses on these scales. Thus, we opted to use the correlation coefficient as an index of feasibility for combined scales. Combining these measures is in line with best practices on scale development establishing a correlation cutoff of .50 for internal consistency (Clark & Watson, 1995).
To measure state authenticity, we used a 3-item bipolar scale adapted from Lenton, Bruder, Slabu, and Sedikides (2013; $\alpha_{\text{psych}} = .85$, $\alpha_{\text{eng}} = .86$). Before answering each item, participants were instructed to imagine themselves in the space they just saw. Each item was prefaced with, “Right now, imagining myself in this building…” An example item is, “I feel like I cannot be my true self” vs. “I feel like I can be my true self.”

2.2.1.3.4 Approach Intentions

We measured approach intentions in two ways. The first measure was a 5-item approach-avoidance measure adapted from Donovan and Rossiter (1982; $\alpha_{\text{psych}} = .85$, $\alpha_{\text{eng}} = .79$, e.g., “I would like to spend a great deal of time in this space”). The second measure was a 1-item sliding scale (“In the future, how likely would you be to avoid or willing to go to this building? I would…” 0 = definitely avoid this building -- 100 = definitely go to this building). The visual and verbal versions of the measure were highly correlated ($r_{\text{psych}} = .73, p < .001$; $r_{\text{eng}} = .74, p < .001$). Thus, we took the average of the two z-scored measures to yield a single index of approach intentions.

2.2.1.3.5 Frequency of Visit

To control for prior familiarity with each space, frequency of past visits to each building was measured with a single item adapted from O’Farrell, Fals-Stewart, and Murphy (2003). The item asked, “How frequently do you visit [building] during the academic year?” Response options were presented as eight multiple choice answers, and ranged from “Never” (1) to “Every day” (8).
2.2.2 Results

2.2.2.1 Relationship Between Domain Identification and Approach Intentions

We predicted that individuals who are more highly identified with engineering than psychology would report greater approach intentions after virtually touring the engineering building than the psychology building. To test this, we computed a difference score for domain identification (engineering -- psychology) and approach intentions (engineering – psychology; higher scores indicate a greater preference for engineering). As seen in Table 2.1, participants generally tended to be more highly identified with psychology than engineering and preferred “people” to “things.” Consequently, participants tended to report greater state authenticity in the psychology space, and greater approach intentions on the single-item sliding scale (but not significantly greater approach intentions on the 5-item scale).

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3 We originally preregistered examining engineering and psychology separately, and not as a difference score. All results reported here hold when conducting analyses among the domains separately. We instead opted to analyze and report results with difference scores to provide a more concise summary of findings.
<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>People / Psychology M (SD)</th>
<th>Things / Engineering M (SD)</th>
<th>Difference d (p-value)</th>
<th>Difference Score M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>People-Things Preference</td>
<td>5.42 (1.66)</td>
<td>4.15 (1.83)</td>
<td>.73***</td>
<td>-1.28 (2.76)</td>
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<tr>
<td>Domain Identification (Verbal)</td>
<td>5.11 (1.74)</td>
<td>3.31 (1.75)</td>
<td>1.03***</td>
<td>-1.81 (2.72)</td>
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<tr>
<td>Domain Identification (Visual)</td>
<td>4.34 (1.17)</td>
<td>2.84 (1.40)</td>
<td>1.16***</td>
<td>-1.49 (2.12)</td>
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</table>

<table>
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<th>Outcome Variables</th>
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<th>Engineering Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Authenticity</td>
<td>4.79 (1.32)</td>
<td>4.10 (1.43)</td>
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<tr>
<td>Approach Intentions (5-item)</td>
<td>4.77 (1.16)</td>
<td>4.82 (1.03)</td>
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<tr>
<td>Approach Intentions (Single-item)</td>
<td>66.55 (20.22)</td>
<td>59.27 (18.55)</td>
</tr>
</tbody>
</table>

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

Table 2.1 Descriptive statistics for measures in Study 1. Note. People-things preference, domain identification (verbal), and state authenticity, and approach intentions (5-item) were measured on a 7-point scale. Other measures are on a different scale. See supplemental materials for full measures.

<table>
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<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
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<tr>
<td>(1) Things – People</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(2) Domain Identification (Engineering – Psychology)</td>
<td>0.62***</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(3) State Authenticity (Engineering – Psychology)</td>
<td>0.66***</td>
<td>0.66***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Approach Intentions (Engineering – Psychology)</td>
<td>0.59***</td>
<td>0.55***</td>
<td>0.82***</td>
<td></td>
</tr>
<tr>
<td>(5) Frequency (Engineering – Psychology)</td>
<td>0.39**</td>
<td>0.61***</td>
<td>0.60***</td>
<td>0.52***</td>
</tr>
</tbody>
</table>

Computed correlation used pearson-method with pairwise-deletion.

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

Table 2.2 Correlations among standardized key outcomes in Study 1. Note. Significant correlations are bolded.
We ran a single-predictor regression model with approach intentions as the outcome and domain identification as the predictor, controlling for frequency of prior visit to each building.\(^4\) In line with predictions, participants reported greater approach intentions after visiting the engineering building than the psychology building to the extent that they identified more highly with engineering than psychology, \(\beta = .36, t(58) = 2.83, p = .006.\)

2.2.2.2 Serial Mediation by Domain Identification and State Authenticity

We hypothesized that the indirect effect of domain identification on approach would be mediated by state authenticity, and would be further situated in a preference for “things” or “people.” To test this hypothesis, we computed a difference score between preference for “things” and “people” that we then used to predict the other three difference outcomes (domain identification, state authenticity, and approach intentions; higher numbers indicate a greater orientation toward “things” and engineering than “people” and psychology). We ran a single serial mediation model (model 6 in PROCESS, version 2.16.3; Hayes, 2016) in which the difference in approach intentions was predicted by the difference in preference for things versus people, as mediated by the difference in domain identification and the difference in state authenticity, with all paths controlling for difference in prior frequency of visit to each building. The model was tested using a bootstrap estimation approach with 5000 samples. Results revealed a significant indirect effect of preference for things versus people on approach through domain identification and state authenticity, \(\beta = .09, SE = .05, 95\% CI = [.02, .21].\)\(^5\) Note that the size of this effect is smaller

\(^4\) Frequency was a significant covariate in the model, \(\beta = .27, t(58) = 2.11, p = .039;\) rerunning analyses without controlling for frequency does not change results.

\(^5\) Both serial indirect effects are also significant when conducting separate models that test “things” preference predicting evaluations of engineering, and “people” preference predicting evaluations of psychology. Alternative orderings of this model (i.e., domain identification
than what our sensitivity analyses suggested we were able to detect ($f^2 = .13$; $r = .34$). A key contribution of Study 2 was to test these hypotheses among a larger sample.

Figure 2.1 Indirect effect of things-people preference on approach through state authenticity and domain identification, all paths controlling for frequency of visit to buildings. Coefficients in the model represent standardized coefficients.

### 2.2.3 Discussion

Study 1 provides first evidence for state authenticity as a unique mediator of the relationship between identification with an academic domain (domain identification) and one’s inclination to spend time in that space (approach intentions). We show that identifying with engineering to a greater degree than psychology predicts one’s intention to spend more time in an engineering space than in a psychology space, as mediated by a greater sense of authenticity in the engineering compared with the psychology space (state authenticity as a mediator explained 36% predicting preference for “people” versus “things,” approach predicting authenticity, and both of these alternative orderings together) were also significant and explained a comparable proportion of variance. Despite this, we had *a priori* theoretical reasons for ordering the variables in this specific configuration and thus retained this ordering for Study 2.
of variance in the relationship between domain identification and approach). We find that this relationship is further situated in a more general preference for “things” over “people.” These results are the first to establish state authenticity as a novel mechanism of the relationship between identification with and approach of an environment.

Despite this initial evidence offered by Study 1, there are several limitations that we sought to address in Study 2. Perhaps most importantly, because we did not measure participant gender in Study 1, we were unable to test state authenticity as an explanatory mechanism for gender differences on approach intentions in engineering versus psychology. This was a key goal of Study 2. An additional limitation is our use of a student sample. Although our sample was not entirely comprised of undergraduate students (N = 11 participants were non-students), it is possible that effects of preferences and domain identification on state authenticity and approach intentions are constrained to those most familiar with academic domains (i.e., undergraduate students) and not necessarily indicative of a general phenomenon. Another limitation of Study 1 was our two-item measure of preference for “people” versus “things.” Although these items provided a face valid measure of individual activity preferences, it is possible we would see different effects with other validated measures of similar constructs, such as empathizing versus systemizing (Baron-Cohen, 2002). Our measure of state authenticity showed fair reliability, yet state authenticity and approach were highly correlated (r = .82). Moreover, these explicit, verbal items might not have captured the same state emotional process captured by other commonly used measures of state authenticity (e.g., real-self-overlap scale; Lenton, Slabu, Sedikides, & Power, 2013). By incorporating an additional measure of state authenticity in Study 2, we hoped to capture distinct processes not measured with these explicit
items in Study 1. We sought to address these methodological limitations and explore these additional questions in Study 2.

2.3 Study 2

The goal of Study 2 was to replicate and extend effects observed in Study 1 among a non-student sample. Using a sample recruited through Amazon’s Mechanical Turk platform, we sought to replicate the effect of individuals’ identification with psychology versus engineering on approach intentions in the physical space associated with each domain, as mediated by state authenticity. Additionally, we sought to extend Study 1 in three ways. First, we measured participant gender to test whether gendered differences on approach intentions in the physical space associated with engineering (vs. psychology) could be explained through a difference in state authenticity in those two spaces. Second, we measured participants’ empathizing-systemizing orientation (Baron-Cohen, 2002) to test whether results observed with respect to preference for people versus things in Study 1 would replicate with this more commonly used measure of individual differences in activity preferences. And third, in Study 2, we also measured state authenticity using a visual, state emotional measure. Preregistered documentation for this study can be found at osf.io/e35ta.

2.3.1 Method

2.3.1.1 Participants

Our preregistered target sample size was $N = 200$ participants. $N = 240$ participants were recruited through Amazon’s Mechanical Turk (we anticipating losing approximately $N = 40$ participants due to inattention). We preregistered excluding participants who: (1) failed at least 2 out of 3 of our comprehension check questions, (2) incorrectly responded to our attention check question, and (3) deviated beyond three standard deviations above the mean for key variables.
Preliminary analyses revealed that the comprehensive check questions were difficult to answer and would have resulted in substantial data loss ($N = 127$ participants failed at least 2 out of 3 comprehension check questions). Thus, to maximize power, we retained participants regardless of their response on the comprehension checks, and only excluded based on the second and third exclusion criteria. All key effects reported below are unchanged by adhering to our full, preregistered set of exclusion criteria, but power for more complex analyses is reduced. The resulting final sample was comprised of $N = 196$ participants ($87$ men, $109$ women; $M_{\text{age}} = 35.57, SD_{\text{age}} = 10.82$; $N = 44$ participants incorrectly responded to the attention check question). A sensitivity analysis indicated this sample size allowed us to detect an effect of $f^2 = .04$ ($r = .20$) with power $= .80$, alpha $= .05$. The majority of participants identified as White (74.49%), followed by Black (8.67%) and Other/Multiracial (6.12%). Less than 3% of participants identified with the remaining ethnicity categories (see supplementary materials for full demographic information). In exchange for their time, participants were reimbursed $0.75.

2.3.1.2 Procedure

Participants first completed baseline measures of their preference for “people” and “things,” their empathizing-systemizing orientation, identification with psychology, and identification with engineering. Next, participants engaged in two separate virtual tours of an engineering and a psychology space (order counterbalanced). In Study 2, the virtual tour provided to participants in Study 1 was adapted for an online context. For each building, participants read a brief description of the domain and viewed panoramic photos of two different sites in the building.

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6 As in Study 1, regression analyses predicting main outcome variables from condition indicated no order effects.
Each photo contained a description of the site below (see supplementary materials for photos and descriptions). After each virtual visit, participants self-reported their levels of state authenticity and approach intentions. Finally, participants completed our comprehension questions, attention checks, and demographics questions.

2.3.1.3 Measures

2.3.1.3.1 Things-People Preference

We used the same measure of things-people preference as in Study 1. Unlike in Study 1, the two items were not correlated, $r = .00, p = .998$.

2.3.1.3.2 Empathizing-Systemizing

To measure empathizing versus systemizing orientation (Baron-Cohen, 2002), we adapted 47 items from Wakabayashi et al.’s (2006) short forms of the Empathy Quotient (EQ-Short) and Systemizing Quotient (SQ-Short). An example item from the EQ-Short is “I really enjoy caring for other people.” An example item from the SQ-Short is “I am fascinated by how machines work.” Participants were asked to rate their agreement with each statement on a scale of 1 (strongly disagree) to 7 (strongly agree). Both scales were reliable, $\alpha_{\text{Empathizing}} = .93$, $\alpha_{\text{Systemizing}} = .87$. The two measures were not significantly correlated, $r = .05, p = .49$ (if anything, they are positively correlated for men, $r = .23$, and uncorrelated for women, $r = .01$).

2.3.1.3.3 Domain Identification

We used the same visual measure of domain identification with psychology and engineering as in Study 1. Since the results of Study 1 demonstrated a strong correlation between the verbal and visual measure of domain identification, we elected to only use the visual measure in Study 2. Unlike in Study 1, the two indices of domain identification for engineering and psychology were not significantly correlated, $r = .13, p = .17$. 
2.3.1.3.4 State Authenticity

We used the same verbal measure of state authenticity as in Study 1. The reliability of both scales was high, $\alpha_{\text{psych}} = .93$, $\alpha_{\text{eng}} = .97$. In addition to using this verbal measure of state authenticity, we used Lenton, Slabu, Sedikides, and Power’s (2013) real-self overlap scale (RSOS). This scale uses a single-item pictorial measure of two circles with varying degrees of overlap between them. One circle is labeled “me now,” and the other circle is labeled “real me.” Participants are instructed to select the pair of circles that best represents their feeling in that particular moment (see supplementary material for full measure). The goal of incorporating the second visual measure of state authenticity was to determine whether results obtained using the verbal measure would hold when also using this state emotion measure of authenticity. A $t$-test revealed no significant difference between the two measures (psychology, $t(388) = -1.04, p = .30$; engineering, $t(387) = -0.14, p = .89$), and the two measures were highly correlated within both psychology and engineering ($r_{\text{psych}} = .55, p < .001$; $r_{\text{eng}} = .53, p < .001$). Thus, the two measures of state authenticity were averaged for each domain.

2.3.1.3.5 Approach Intentions

We used the same two measures of approach intentions as in Study 1. In Study 2, we made minor changes to the items in the 5-item scale. Notably, we cut one item from the scale altogether (“I would enjoy being in this space”) and changed the phrasing of several other items to more closely capture behavioral approach intentions instead of general positive affect (see supplementary materials for details). The new scale had strong reliability, $\alpha_{\text{psych}} = .90$, $\alpha_{\text{eng}} = .92$. As in Study 1, the two measures of approach intentions were highly correlated ($r_{\text{psych}} = .85, p < .001$; $r_{\text{eng}} = .88, p < .001$). Thus, as in Study 1, the two measures were z-scored and averaged together to form a single index of approach intentions.
2.3.1.3.6 Works or Studies in the Domain

To control for prior familiarity with each domain, participants were asked whether they worked or studied in a field related to psychology or engineering. Response options included “Yes,” “No,” “I have at some point, but not currently,” and “Not sure.” In analyses, participants’ responses to this item are coded as “1” for “Yes,” and “0” for all other responses.

2.3.2 Results

2.3.2.1 Relationship Between Domain Identification and Approach Intentions

As in Study 1, we first tested whether individuals who more highly identified with the engineering than psychology would report greater approach intentions after virtually touring the engineering than the psychology space. To test this, we computed a difference score for the domain identification (engineering - psychology) and approach intentions (engineering – psychology; higher scores indicate a greater preference for engineering).

As seen in Table 2.3, participants generally tended to be more highly identified with psychology than engineering and had a greater empathizing than systemizing orientation (unlike in Study 1 there were no significant differences on preference for “people” versus “things”). There were no significant differences on outcome variables, with the exception of the 4-item measure of approach intentions, for which participants reported higher approach intentions for the engineering building than for the psychology building.
<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>People / Psychology M (SD)</th>
<th>Things / Engineering M (SD)</th>
<th>Difference d</th>
<th>Difference Score M (SD)</th>
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<tr>
<td>People-Things Preference</td>
<td>4.95 (1.53)</td>
<td>4.79 (1.58)</td>
<td>n.s.</td>
<td>-0.16 (2.20)</td>
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<td>Empathizing-Systemizing</td>
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<td>Domain Identification</td>
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<td>-0.74 (1.88)</td>
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<table>
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<th>Outcome Variables</th>
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<th>Engineering Space</th>
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<tr>
<td>State Authenticity (Verbal)</td>
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</tr>
<tr>
<td>State Authenticity (Visual)</td>
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<td>Approach Intentions (4-item)</td>
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<td>4.96 (1.58)</td>
<td>-.20*</td>
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<td>Approach Intentions (Single-item)</td>
<td>64.13 (27.37)</td>
<td>67.35 (27.17)</td>
<td>n.s.</td>
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*p < .05. **p < .01. ***p < .001.

Table 2.3 Descriptive statistics on unstandardized measures in Study 2. Note. People-things preference, domain identification (verbal), and state authenticity, and approach intentions (4-item) were measured on a 7-point scale. Other measures are on a different scale. See supplemental materials for full measures.

<table>
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<tr>
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<td>(1) Systemizing-Emphathizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Things-People</td>
<td>0.51***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Domain Identification (Engineering-Psychology)</td>
<td>0.31***</td>
<td>0.32***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) State Authenticity (Engineering-Psychology)</td>
<td>0.39***</td>
<td>0.32***</td>
<td>0.47***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Approach Intentions (Engineering-Psychology)</td>
<td>0.36***</td>
<td>0.28***</td>
<td>0.44***</td>
<td>0.75***</td>
<td></td>
</tr>
<tr>
<td>(6) Gender</td>
<td>0.33***</td>
<td>0.18*</td>
<td>0.22*</td>
<td>0.19**</td>
<td>0.22**</td>
</tr>
</tbody>
</table>

Computed correlation used pearson-method with pairwise-deletion.

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

Table 2.4 Correlations among standardized key outcomes in Study 2. Note. Significant correlations are bolded.
We ran a single-predictor regression model with approach intentions as the outcome and domain identification as the predictor, controlling for whether participants worked or studied in psychology or engineering. As in Study 1, participants reported greater approach intentions after visiting the engineering building than the psychology building to the extent that they identified more highly with engineering than psychology, $\beta = .39$, $t(190) = 5.57$, $p < .001$, controlling for whether participants worked or studied in psychology or engineering.

### 2.3.2.2 Serial Mediation by Domain Identification and State Authenticity

As in Study 1, we hypothesized that the indirect effect of domain identification on approach would be mediated by state authenticity, which would itself be predicted by an orientation toward systemizing or empathizing. To test this hypothesis, we computed a difference score between systemizing and empathizing orientation that we then used to predict the other three difference outcomes (domain identification, state authenticity, and approach intentions; higher numbers indicate a greater orientation toward systemizing and engineering than toward empathizing and psychology). Two participants deviated more than three standard deviations from the mean of the empathizing quotient and were excluded from analyses including the empathizing quotient (results are unchanged by including these participants in analyses). We ran a serial mediation model (model 6 in PROCESS, version 2.16.3; Hayes, 2016) in which differences in approach intentions were predicted by difference in systemizing versus empathizing orientation, as mediated by difference in domain identification and difference state authenticity.

$^7$ Neither covariates were significant in the model, works or studies in psychology, $\beta = -.23$, $t(190) = -0.85$, $p = .40$, works or studies in engineering, $\beta = .42$, $t(190) = 1.96$, $p = .052$. Rerunning analyses without controlling for whether one works or studies in psychology or engineering does not change results.
authenticity, with all paths controlling for whether one works or studies in psychology and whether one works or studies in engineering. The model was tested using a bootstrap estimation approach with 5000 samples. Results revealed a significant indirect effect of empathizing versus systemizing orientation on approach through domain identification and state authenticity, $\beta = .07$, SE = .02, 95% CI = [.03, .13] (see Figure 2.2). Note that this effect is below the threshold of our sensitivity analysis, which indicated we were powered to detect an effect of $f^2 = .04 (r = .20)$. Using effect estimates obtained from this model, my future studies in this line of work will replicate this finding with a larger, adequately powered sample.

Rerunning this model without controlling for whether one works or studies in psychology or engineering does not change effects. $N = 2$ participants were excluded for being beyond three standard deviations from the mean of empathizing. Including these participants in analyses does not change effects.

The same results emerged when running a parallel serial mediation model in which preference for “things” versus “people,” instead of empathizing versus systemizing predicted domain identification, state authenticity, and approach intentions, as in Study 1. Results are also significant when separating the models into systemizing and engineering, and empathizing and psychology, respectively. Alternative orderings of this model (i.e., domain identification predicting preference for “empathizing” versus “systemizing,” approach predicting authenticity, and both of these alternative orderings together) were also significant; effects were comparable or weaker ($\beta$’s = .06, .07, .05, respectively).
2.3.2.3 Testing the Role of State Authenticity in Gender Differences on Approach

Past research has found a robust gender difference linking women to empathizing and men to systemizing (Wakabayashi, Baron-Cohen, & Wheelwright, 2006). Consistent with this past work, women in our sample were significantly higher than men on empathizing ($M_{\text{women}} = 5.04$, $SD = 0.91$; $M_{\text{men}} = 4.69$, $SD = 0.92$; $t(184) = -2.58$, $p = .011$, $d = .38$) and men were significantly higher than women on systemizing ($M_{\text{women}} = 4.35$, $SD = 0.86$; $M_{\text{men}} = 4.83$, $SD = 0.80$; $t(190) = -4.07$, $p < .001$; $d = -.58$). As seen in Table 2.5, women were also less highly identified than were men with engineering and reported less interest in approaching the engineering space.
Table 2.5 Gender differences on unstandardized key variables in Study 2.

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Women M (SD)</th>
<th>Men M (SD)</th>
<th>Difference d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empathizing Orientation</td>
<td>5.04 (0.91)</td>
<td>4.69 (0.92)</td>
<td>.38*</td>
</tr>
<tr>
<td>Systemizing Orientation</td>
<td>4.35 (0.86)</td>
<td>4.83 (0.80)</td>
<td>-.58***</td>
</tr>
<tr>
<td>Identification with Psychology</td>
<td>4.09 (1.32)</td>
<td>4.08 (1.23)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Identification with Engineering</td>
<td>3.00 (1.54)</td>
<td>3.79 (1.50)</td>
<td>-.52***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome Variables</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach in Psychology (4-Item)</td>
<td>4.88 (1.57)</td>
<td>4.33 (1.53)</td>
<td>.35*</td>
</tr>
<tr>
<td>Approach in Engineering (4-Item)</td>
<td>4.81 (1.66)</td>
<td>5.14 (1.45)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Approach in Psychology (Single-Item)</td>
<td>67.38 (28.15)</td>
<td>60.07 (25.94)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Approach in Engineering (Single-Item)</td>
<td>63.48 (28.62)</td>
<td>72.20 (24.54)</td>
<td>-.33*</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .00

Table 2.6 Correlations between measures in Study 2 by participant gender. Note. Correlations below the diagonal are for women; correlations above the diagonal are for men. Significant correlations are bolded.
In a regression model predicting approach of engineering versus psychology from gender, controlling for whether one works or studies in engineering or psychology, we found that women were less willing to approach the engineering space than were men, $\beta = .35$, $t(189) = 2.42$, $p = .017$. To test whether men’s and women’s differential approach of the engineering (compared with psychology) space is explained by gender differences in the other variables measured, we ran an exploratory model predicting approach from gender, as mediated by systemizing-empathizing orientation and state authenticity (see Figure 2.3). As in previous analyses, we controlled for whether participants worked or studied in psychology or engineering. Results showed that the direct effect of gender on approach intentions in engineering versus psychology was mediated by systemizing-empathizing orientation and state authenticity, $\beta = .14$, $SE = .05$, 95% CI = [.07, .26].\(^{10}\) As with the prior model, this is below the threshold of our sensitivity analysis, which indicated we were powered to detect an effect of $\hat{\beta} = .04$ ($r = .20$).

These results suggest that women’s lower approach intentions in the physical space associated with engineering compared to psychology is significantly explained by divergent preferences and experiences of state authenticity in the two spaces. Effects are also present when separating models into systemizing and engineering and empathizing and psychology, respectively. These findings provide support for state authenticity as a potential explanatory mechanism of self-segregation into different occupational roles.

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\(^{10}\) Rerunning this model without controlling for whether one works or studies in psychology or engineering does not change effects. $N = 2$ participants were excluded for being beyond three standard deviations from the mean of empathizing. Including these participants in analyses does not change effects. Running this model with domain identification instead of “systemizing” versus “empathizing” orientation as a mediator of the relationship between gender and approach is not significant, suggesting that results are not explained by differential identification with engineering versus psychology.
2.3.3 Discussion

The results of Study 2 replicate the findings of Study 1 with a larger, non-student sample and more refined measures. The experience of state authenticity, as cued by environments congruent with one’s identity, encompasses a psychological process that is not necessarily specific to those most familiar with the domain in question (i.e., students in an academic university context). Effects observed in the serial mediation model held when operationalizing the “things” versus “people” preference as an “empathizing” versus “systemizing” orientation, and also when measuring state authenticity using a single-item pictorial measure of real-self overlap.

Importantly, in Study 2 we highlight the implications of state authenticity for gendered patterns of occupational segregation. We show that gender differences on approach intentions in the physical spaces associated with engineering versus psychology are explained by gender differences on empathizing versus systemizing orientation and state authenticity (with women
scoring lower on systemizing, state authenticity in engineering, and approach of engineering and men scoring lower on empathizing, state authenticity in psychology, and approach of psychology). Given women’s underrepresentation and high exit rates in STEM (Hill, Corbett, & St. Rose, 2015; Hunt, 2010) as well as men’s underrepresentation in HEED and psychology careers (Block, Schmader, & Croft, 2015; Mudhovozi, 2015), this has meaningful implications for work seeking to address the gender gap on career trajectories in fields like STEM and HEED. Past work shows that when STEM careers, typically thought to afford agentic opportunities, are reframed as affording communal goals (i.e., increasing fit), women are more interested in pursuing these careers (Diekman, Clark, Johnston, Brown, & Steinberg, 2011). No work to date has explicitly considered which types of fit (e.g., self-concept, goal, or social) are most key to target in these types of interventions, and whether these interventions work by facilitating a gestalt sense of authenticity. Our findings highlight the relevance of distinguishing between the three types of fit and considering authenticity in gendered patterns of self-segregation into different fields.

2.4 Limitations

Despite these studies’ contributions, there are several key limitations that we intend to address in future work not discussed in this thesis. The first and most obvious limitation of these studies is that they are situated in virtual, and not actual, environments. Although past work suggests that imagined scenarios can yield effects similar to real scenarios (for a recent validation of imagined scenarios in social science research, see Hainmueller, Hangartner, & Yamamoto, 2015), it remains to be seen whether the effects observed in our studies would reasonably translate to real-world environments.
Relatedly, we did not measure actual approach behavior, but instead measured participants’ intentions to approach different physical spaces. Given that people’s behavioral intentions rarely map on perfectly to their actions (Ajzen, Brown, & Carvajal, 2004), in future studies we aim to incorporate more behavioral measures of approach in future research (e.g., automatic activation of approach tendencies, actual course attendance, or career choice). Results of sensitivity analyses also indicated that we were not adequately powered to detect more complex indirect effects. In future studies, we will use effect estimates obtained from these data to conduct precise power analyses to ensure we are adequately powered to detect these kinds of serial mediation effects.

Finally, although the use of Amazon’s Mechanical Turk platform in Study 2 allowed us to replicate our effects among a more demographically diverse, non-student sample (Buhrmester, Kwang, & Gosling, 2011), participants in Study 2 were all residents of North America (i.e., the United States and Canada). Given recent work pointing to cross-cultural differences in attitudes toward and women and men’s representation in STEM and HEED careers, respectively (for women in STEM, see Mellström, 2009; Stoet & Geary, 2018; for men in HEED, see Koch & Farquhar, 2015) as well as the broader importance of generalizing psychological findings beyond Western samples (Henrich, Heine, & Norenzayan, 2010), future work should seek to examine these processes in other regions and cultures, where mechanisms underlying career choice and vocational identity development differ (Auyeung & Sands, 1997).

In addition to expanding the research question to other populations, Studies 1 and 2 were restricted to two academic domains: engineering and psychology. In part, this was motivated by our conceptual framework in which we wished to test preferences for “people” versus “things” and “empathizing” versus “systemizing,” respectively. Nevertheless, testing this theoretical
model with other domains (especially fields such as nursing where men are highly underrepresented; Rajacich, Kane, Williston, & Cameron, 2013) will be an important next step for this line of work.

2.5 Future Directions

The overarching goal of Studies 1 and 2 was to develop a paradigm that we can use in future studies to experimentally manipulate each type of fit individually. Future studies conducted in this line of work will explicitly measure self-concept, goal, and social fit to understand how each type of fit contributes to one’s overall choice to approach or avoid the physical space associated with a given academic domain. In a follow-up study currently underway, we are developing a three-tiered manipulation to explicitly tease apart and assess this question. To cue a presence or absence of self-concept fit, we are asking participants (who will vary naturalistically in empathizing and systematizing) to spend time in a physical space associated with either psychology or engineering (participants will be randomly assigned to either condition, regardless of their own identification with either domain). To cue a presence or absence of goal fit, participants will then be asked to complete a task that is either congruent with a “systemizing” and “things” orientation or an “empathizing” and “people” orientation. Finally, to cue a presence or absence of social fit, participants will receive social feedback that validates either a psychology or engineering identity.

In these studies, we will also implications for cognitive fluency (e.g., faster processing of self-relevant information), motivational fluency (e.g., experienced flow states when completing domain-relevant tasks), and social fluency (e.g., fewer speech errors during videotaped recordings of domain-relevant social interactions), respectively. This piecemeal approach will allow us to assess the role that each type of fit plays in the overall process of state authenticity in
the context of academic environments, thus refining our understanding of the process and theoretical model. Importantly, this experimental paradigm will enable us to test whether members of social groups experience a greater degree of all three types of fit and fluency in environments where they are the cultural default (e.g., men in STEM environments; women in HEED environments).

Another direction for future work examining state authenticity in academic environments is to examine the potential implications of state authenticity for academic performance. Given past work suggesting that academic performance is hindered in environments that cue a sense of identity threat (Steele, Spencer, & Aronson, 2002), we might expect that academic performance would suffer in environments that cue inauthenticity. Just as we find that state authenticity offers an explanation for the gender gap in situation selection in engineering versus psychology, this could potentially have implications for women’s underperformance in domains where they feel a lack of fit to the field (e.g., STEM). Past work applying a cognitive lens to stereotype threat suggests that women’s underperformance under stereotype threat can be accounted for by depleted working memory capacity, as triggered by cognitive imbalance (i.e., cognitive disfluency; Schmader, Johns & Forbes, 2008). Integrating the key assumptions of the integrated process model of stereotype threat with those posited by the SAFE model, it is possible that the effects of cognitive disfluency on underperformance in STEM contexts are further mediated by state inauthenticity. Future studies will need to empirically test this possibility.

As increasing gender parity becomes a key goal for modern-day organizations and institutions, identifying central reasons why men and women might actively select into different careers is an increasingly critical undertaking for social scientists and policymakers alike. While several organizational efforts to combat gender inequity focus on the role of perceivers (i.e.,
diversity seminars, anti-bias training, cultural competency policies), I propose that focusing on how targets might self-select away from occupations in which they anticipate a lack of fit is an equally critical, yet relatively understudied, phenomenon. By understanding how environments lead targets of bias and discrimination to steer away from certain occupations and fields, we may work toward attaining equity for underrepresented groups who would otherwise be obstructed by a lack of authenticity.
Chapter 3: Fit to Cultural Environments

Studies 1 and 2 were designed to test anticipated state authenticity in imagined spaces and understand how this relates to gendered self-segregation into different career trajectories (e.g., women’s avoidance of engineering). In Studies 3 and 4, we complement these findings by testing state authenticity as it is actually experienced in real-world contexts. In this set of studies, I consider how North American university environments might act as a signal of fit (or misfit) for the students within them to the extent they do (or do not) identify with mainstream North American culture. I further examine the unique relationship of these three types of fit to state authenticity and end by considering the predictive implications of fit and authenticity for students’ motivation on campus. In the process, I rule out several alternative explanations for covariation among measured variables, such as identification with heritage culture, differences in self-construal styles, and dispositional positive and negative emotionality.

3.1 State Authenticity in Cultural Environments

According to Markus and Kitayama (2010), cultures and the individuals within them mutually constitute themselves. Given that the self is deeply embedded within culture (and vice versa), a presence or absence of cultural fit is likely to have profound effects for one’s experience of self. Just as we find that state authenticity signals fit between one’s identity and the academic environment, cultural environments might similarly signal a presence (or lack) of fit with respect to one’s identity. Individuals attune themselves to cultures and contexts that provide answers to the questions, “Who am I?”, “What should I be doing?”, and “How do I relate to others?” (Markus & Kitayama, 2010). These questions, of course, are indicative of striving for self-concept, goal, and social fit. In this line of work, I propose that state authenticity acts as a signal, indicating to the individual those cultures and contexts in which these types of fit are
successfully attained. Such experiences of state authenticity, in turn, should motivate individuals to approach environments in which cultural fit is afforded and avoid those in which cultural fit is not afforded. This reasoning is the guiding rationale for the questions addressed in Chapter 2.

3.1.1 Cultural Fit on the University Campus

Cultural fit is a central component of the university experience. Universities embody the beliefs and practices of the mainstream culture in which they are situated (Fryberg & Markus, 2007). Students who experience a sense of cultural fit on the university campus enjoy positive outcomes such as greater academic achievement (Stephens, Hamedani, & Destin, 2014), reduced stress (Cross, 1995), and greater psychological well-being (Gloria, Castellanos, & Orozco, 2005; Lu, 2006). A lack of cultural fit, conversely, is linked to negative outcomes such as academic underperformance (Kim, 2002; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012), less help-seeking (Gloria, Castellanos, Park, & Kim, 2008), and depressive symptomology (Jung, Hecht, & Wadsworth, 2007).

Individual bodies of work examining cultural fit on the university campus suggest that cultural fit can be understood as a match between the cultural environment and self-concept, goal, and social fit. Students experience less stress and greater emotional well-being to the degree that their self-concept matches the norms of independence endorsed by the university (cueing self-concept fit; Stephens, Townsend, Markus, & Phillips, 2012). Other work by Kim (2002) shows that students fare best when the structure of tasks is aligned with students’ cultural learning style; students from Eastern cultures perform better on challenging tasks requiring quiet reflection, whereas students from Western cultures perform better on tasks requiring a “think-out-loud” procedure (cueing goal fit). Finally, past work shows that university students from diverse backgrounds adapt best when they report having a strong network of social support.
(cueing social fit; Zea, Jarama, & Bianchi, 1995). No work to date has examined how these three distinct types of fit operate in tandem to predict emergent experiences of state authenticity. A key contribution of the present work is to assess the unique relation of each of these three types of fit to cultural fit and state authenticity.

3.1.2 Who Experiences Cultural Fit on the University Campus?

The evidence cited above highlights the way in which those who are the cultural default (i.e., those most prototypical and representative of the mainstream culture) experience the greatest degree of cultural fit on the university campus. Stephens and colleagues’ (2002) findings show that those who are more likely to endorse an independent self-construal style (i.e., those most prototypical of North American culture; Markus & Kitayama, 1991) are more likely to experience self-concept fit. Similarly, Kim’s (2002) findings underscore the way in which mainstream university standards of success are designed in a way that affords a greater degree of goal fit to students who most strongly identify with North American culture. Zea, Jarama, and Bianchi’s (1995) findings on the importance of social support are powerful in light of other bodies of work showing that foreign-born students often face numerous obstacles such as social loss, language difficulties, and trouble navigating explicit and implicit cultural norms that make seeking and establishing strong social support networks more difficult (Hayes & Lin, 1994; Titzmann & Silbereisen, 2009). Indeed, environments constructed by the majority and with the cultural default in mind systematically facilitate greater self-concept, goal, and social fit for members of the cultural default (Schmader & Sedikides, 2017). Thus, the answer to the question, “Who experiences cultural fit on the university campus?” is best answered by looking to the cultural default in that context. Given current trends toward international education in an increasingly global economy (Suarez-Orozco & Qin-Hilliard, 2004), identifying the ways in
which fit may be eroded for students who are not part of the mainstream culture is a critical avenue for research.

In the context of North American universities and throughout Studies 3 and 4, we operationalize the cultural default as being White, domestic students (based on work by Devos & Banaji, 2005). However, across both Studies 3 and 4, students from this group comprise a small proportion of the samples (less than 15% in both Studies 3 and 4). The other 85% of students in these samples (some foreign born, many from East or South Asian ethnic backgrounds) are likely to vary in their identification with mainstream North American culture. Our goal was to assess how this variation in cultural identification might predict students’ feelings of fit and state authenticity on a major North American university campus.

3.1.3 The Present Research

The goal of Studies 3 and 4 was to test if and how self-concept fit, goal fit, and social fit in a North American university context each independently predict the gestalt experience of state authenticity. First, we consider whether state authenticity is predicted by greater identification with mainstream North American culture, such that those who are highly identified with mainstream North American culture experience greater state authenticity on campus. Next, we test whether this relationship is uniquely mediated by self-concept, goal, and social fit.

In Studies 3 and 4, we also test how greater fit and authenticity on campus might predict different motivational orientations. As posited by the SAFE model, environments that afford a higher degree of fit and authenticity will promote a general motivation to approach the environment, and environments that afford fit and authenticity to a lesser degree will inhibit this motivation. To test this hypothesis, we examined whether university students who experience greater fit and state authenticity on campus would report greater activation of the behavioral
activation system (BAS; the motivational system associated with movement toward goals and sensitive to signals of reward; Carver & White, 1994) and less activation of the behavioral inhibition system (BIS; the motivational system associated with inhibition of behavior that may lead to negative outcomes and sensitivity to signals of punishment; Carver & White, 1994). We specifically frame these constructs in the context of “since arriving at university” to test whether fit and authenticity map onto these dimensions in the university context.

In addition to testing these research questions, across Studies 3 and 4, I rule out several alternative accounts for our findings, such as cultural differences (i.e., self-construal style), general affective accounts (i.e., positive and negative affect), and identifying with any given culture as opposed to North American mainstream culture specifically. I show that observed effects are robust to these alternative accounts and highlight several potential directions for future research.

3.2 Study 3

3.2.1 Method

3.2.1.1 Participants and Procedure

Participants were 213 undergraduates who completed an online study through the human subjects pool at The University of British Columbia. In exchange for their participation, participants received partial course credit. Forty-two participants were excluded for not completing the survey (N = 39 of these participants did not make it to the first set of key measures). The final sample of participants was comprised of 169 undergraduate students (M<sub>age</sub> = 20.08, SD = 2.35; 137 women, 32 men). This was a first exploratory study and so our target sample was not based on specific set of preregistered criteria. Sensitivity analyses suggest this sample allowed us to detect a mid-sized effect of $\hat{f}^2 = .05 \ (r = .21)$ with power = .80, alpha = .05.
The sample in Study 3 was diverse both in terms of national origin and/or ethnic background (see Table 3.1). The majority of participants identified with a non-White ethnic category (65.09%) (see supplementary materials for full demographic information). In addition, a fourth (24.26%) of students were international students and 75.74% of students were domestic students. But as can be seen in Table 3.1 with the cross-tabs of these two variables, only 11% of the entire sample ($N=18$) were White Canadian students who might be considered as representing the cultural default for mainstream Canadian culture. The remaining 89% would be considered either a national and/or ethnicity minority in the broader culture. Full demographic information is reported in the supplementary materials.

\footnote{We initially anticipated that effects might be more prominent for international students in this initial study. As such, we planned to examine whether effects were moderated by student status. Those analyses revealed no significant moderation by student status or ethnicity and thus we report results on the full sample to provide greater statistical power for complex analysis. Results of the moderated mediation analysis are reported in the supplemental material. Effects are not present for the subsample of $N=41$ international students only. Results of these analyses are also reported in the supplemental material.}
### Table 3.1 Participant demographics in Study 3.

<table>
<thead>
<tr>
<th>Heritage Culture</th>
<th>Domestic N (as % of sample)</th>
<th>International N (as % of sample)</th>
<th>Total N (as % of sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>18 (10.65%)</td>
<td>0 (0.00%)</td>
<td>18 (10.65%)</td>
</tr>
<tr>
<td>Non-White</td>
<td>110 (65.09%)</td>
<td>41 (24.26%)</td>
<td>151 (89.35%)</td>
</tr>
<tr>
<td>Arab</td>
<td>7</td>
<td>0</td>
<td>7 (4.14%)</td>
</tr>
<tr>
<td>Black</td>
<td>1</td>
<td>0</td>
<td>1 (0.59%)</td>
</tr>
<tr>
<td>Chinese</td>
<td>57</td>
<td>28</td>
<td>85 (50.30%)</td>
</tr>
<tr>
<td>Filipino</td>
<td>4</td>
<td>0</td>
<td>4 (2.37%)</td>
</tr>
<tr>
<td>Japanese</td>
<td>0</td>
<td>1</td>
<td>1 (0.59%)</td>
</tr>
<tr>
<td>Korean</td>
<td>3</td>
<td>2</td>
<td>5 (2.96%)</td>
</tr>
<tr>
<td>Latin American</td>
<td>2</td>
<td>1</td>
<td>3 (1.78%)</td>
</tr>
<tr>
<td>Multiracial</td>
<td>10</td>
<td>2</td>
<td>12 (7.10%)</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>2</td>
<td>12 (7.10%)</td>
</tr>
<tr>
<td>South Asian</td>
<td>18</td>
<td>4</td>
<td>22 (13.02%)</td>
</tr>
<tr>
<td>Southeast Asian</td>
<td>6</td>
<td>3</td>
<td>9 (5.33%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>128 (75.74%)</strong></td>
<td><strong>41 (24.26%)</strong></td>
<td><strong>169 (100%)</strong></td>
</tr>
</tbody>
</table>

3.2.1.2 Measures

Descriptive statistics and items for all measures are reported in the supplementary material.

3.2.1.2.1 Identification with Mainstream North American Culture

We measured identification with mainstream North American culture using the mainstream culture subscale of a brief 12-item version (A. Ryder, personal communication, March 15, 2017) of the Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus, 2000). Participants were first asked to identify their heritage culture (defined as “the original culture of your family [other than Canadian]”; see supplementary materials for details). Participants were then asked to
rate their agreement with a series of 12 items measuring their engagement in various activities from their heritage culture or mainstream North American culture on a scale of 1 (*strongly disagree*) to 9 (*strongly agree*). An example item is, “I often participate in [my heritage / mainstream North American] cultural traditions”). Each item was presented six times with respect to participants’ heritage culture and mainstream North American culture (i.e., six items per subscale). Both the heritage culture and mainstream culture subscale were reliable ($\alpha_{\text{heritage}} = .84$, $\alpha_{\text{mainstream}} = .85$).

3.2.1.2.2 Measures of Fit

We measured fit using a series of 12 items with three 4-item subscales measuring each type of fit. To measure *self-concept fit*, participants were asked to rate their agreement with 4 items on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is “Being at UBC brings out my true self.” ($\alpha = .74$). To measure *goal fit*, participants were asked to rate their agreement with 4 items on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is “I often feel that UBC is a place that allows me to realize my goals.” ($\alpha = .79$). To measure *social fit*, participants were asked to rate their agreement with 4 items on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is “When I’m with other students at UBC, I generally feel I can be myself.” ($\alpha = .77$).

We conducted a factor analysis of these twelve items using maximum likelihood extraction method and direct oblimin rotation with Kaiser normalization. This exploratory factor analyses yielded a three-factor solution that broadly captured self-concept, goal, and social fit; albeit with some substantial cross-loadings between self-concept and goal fit items.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Concept Fit 4</td>
<td>Even when I’m alone and doing nothing, simply being at UBC makes me feel like myself.</td>
<td><strong>.882</strong></td>
<td>.435</td>
<td>.435</td>
</tr>
<tr>
<td>Self-Concept Fit 3</td>
<td>Being at UBC brings out my true self.</td>
<td><strong>.842</strong></td>
<td>.470</td>
<td>.436</td>
</tr>
<tr>
<td>Goal Fit 2</td>
<td>I often feel that UBC is a place that allows me to realize my goals.</td>
<td><strong>.519</strong></td>
<td><strong>.779</strong></td>
<td>.348</td>
</tr>
<tr>
<td>Goal Fit 4</td>
<td>The goals of UBC are fully compatible with mine.</td>
<td><strong>.619</strong></td>
<td><strong>.723</strong></td>
<td>.415</td>
</tr>
<tr>
<td>Goal Fit 1</td>
<td>The values at UBC are not a good fit to my own personal values. (R)</td>
<td><strong>.393</strong></td>
<td><strong>.714</strong></td>
<td>.444</td>
</tr>
<tr>
<td>Self-Concept Fit 1</td>
<td>Simply being on campus at UBC feels like a poor fit to how I see myself. (R)</td>
<td>.338</td>
<td><strong>.634</strong></td>
<td>.450</td>
</tr>
<tr>
<td>Goal Fit 3</td>
<td>At UBC, my behavior is never motivated by my own intrinsic goals and values. (R)</td>
<td>.135</td>
<td><strong>.547</strong></td>
<td>.222</td>
</tr>
<tr>
<td>Social Fit 4</td>
<td>When I’m with other students at UBC, I generally feel I can be myself.</td>
<td>.497</td>
<td>.386</td>
<td><strong>.750</strong></td>
</tr>
<tr>
<td>Social Fit 3</td>
<td>I often find myself adjusting my behavior to fit in with others’ expectations of me at UBC. (R)</td>
<td>.200</td>
<td>.265</td>
<td><strong>.691</strong></td>
</tr>
<tr>
<td>Social Fit 1</td>
<td>I often feel that I do not fit in well when I’m on campus with other UBC students. (R)</td>
<td>.365</td>
<td>.419</td>
<td><strong>.645</strong></td>
</tr>
<tr>
<td>Social Fit 2</td>
<td>Other people on campus see me the same way that I see myself.</td>
<td>.501</td>
<td>.354</td>
<td><strong>.577</strong></td>
</tr>
<tr>
<td>Self-Concept Fit 2</td>
<td>The person I am at UBC is different than the person I am any place else. (R)</td>
<td>.170</td>
<td>.482</td>
<td><strong>.561</strong></td>
</tr>
</tbody>
</table>

**Table 3.2 Results of factor analysis among fit items in Study 3.** *Note.* The three highest loading items on each factor are bolded.
As seen in Table 3.2, items measuring social fit subscale generally loaded together, yet there was not as clear of a separation between items measuring self-concept and goal fit. Nonetheless, we chose to retain our *a priori* grouping of the items with the goal of refining our measures of the three types of fit in Study 4.

### 3.2.1.2.3 State Authenticity

To measure state authenticity, we used Lenton, Slabu, Sedikides, and Power’s (2013) real-self overlap scale (RSOS). This scale uses a single-item pictorial measure of two circles with varying degrees of overlap between them. One circle is labeled “me now,” and the other circle is labeled “real me.” Participants were instructed to select the pair of circles that best represents their feeling at UBC (see supplementary material for full measure).

### 3.2.1.2.4 Approach-Avoidance Motivation

Approach-avoidance motivation was measured using an adapted version of the BIS/BAS scale (Carver & White, 1994; see supplementary material for details). In order to make the measure specific to approach-avoidance motivation *on campus*, each item was presented with the frame, “Since coming to UBC, I’ve noticed that…” Participants were asked to respond to 12 statements with “yes” (2) or “no” (1). Seven of the 12 items measured approach motivation (e.g., “When I get something I want, I feel excited and energized”; $\alpha = .80$), and 5 of the 12 items measured avoidance motivation (e.g., “If I think something unpleasant is going to happen, I usually get pretty ‘worked up’”). This measure of avoidance showed low reliability ($\alpha = .59$), making tests of hypotheses with this measure somewhat more conservative.
3.2.2 Results

All analyses reported in Study 3 exclude those who were above or below three standard deviations from the mean on any given variable in the reported models (see supplemental materials for N’s of excluded participants on each given variable).

As seen in Table 3.3, participants were moderately identified with both mainstream North American culture and their heritage culture. Participants were generally at the midpoint of self-concept, goal, and social fit, and also of state authenticity. Participants generally tended to be high in both approach and avoidance motivation.

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) VIA (Mainstream Culture)</td>
<td>6.41</td>
<td>1.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) VIA (Heritage Culture)</td>
<td></td>
<td>6.35</td>
<td>1.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Self-Concept Fit</td>
<td></td>
<td>4.28</td>
<td>1.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Goal Fit</td>
<td></td>
<td>4.74</td>
<td>1.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Social Fit</td>
<td></td>
<td>4.11</td>
<td>1.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) State Authenticity</td>
<td></td>
<td>4.62</td>
<td>1.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) Approach Motivation (BAS)</td>
<td></td>
<td>1.78</td>
<td>0.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8) Avoidance Motivation (BIS)</td>
<td></td>
<td>1.80</td>
<td>0.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.3 Descriptive statistics for key variables measured in Study 3. Note. Identification with mainstream and heritage culture are measured on a 9-point scale; approach and avoidance motivation are measured on dichotomous scales (1 = no, 2 = yes). All other measures are on a 7-point scale. See supplemental material for full measures. Significant correlations are bolded.

3.2.2.1 Relationship Between Identification with Mainstream Culture and State Authenticity

As seen in Table 3.4, international and domestic students significantly differed on their identification with mainstream North American and their heritage culture; domestic students
reported higher identification with North American culture and international students reported higher identification with their heritage culture. International and domestic students did not significantly differ on any key outcome variables, however. Also as seen in Table 3.4, White and non-White students also differed on their identification with mainstream North American and their heritage culture; White students reported higher on identification with mainstream North American culture and non-White students reported higher identification with their heritage culture. White were also significantly higher than non-White students in state authenticity.

<table>
<thead>
<tr>
<th></th>
<th>Domestic Students</th>
<th>International Students</th>
<th>Difference</th>
<th>White Students</th>
<th>Non-White Students</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification with Mainstream North American Culture</td>
<td>6.77 (1.11)</td>
<td>5.27 (1.35)</td>
<td>1.21***</td>
<td>7.05 (1.20)</td>
<td>6.33 (1.34)</td>
<td>.57*</td>
</tr>
<tr>
<td>Identification with Heritage Culture</td>
<td>6.18 (1.21)</td>
<td>6.87 (1.51)</td>
<td>-.50*</td>
<td>5.49 (1.04)</td>
<td>6.45 (1.31)</td>
<td>-.81***</td>
</tr>
<tr>
<td>Self-Concept Fit</td>
<td>4.33 (1.18)</td>
<td>4.12 (1.01)</td>
<td>n.s.</td>
<td>4.72 (1.38)</td>
<td>4.22 (1.11)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Goal Fit</td>
<td>4.79 (1.07)</td>
<td>4.59 (1.03)</td>
<td>n.s.</td>
<td>4.90 (1.31)</td>
<td>4.72 (1.03)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Social Fit</td>
<td>4.17 (1.24)</td>
<td>3.93 (0.95)</td>
<td>n.s.</td>
<td>4.44 (0.99)</td>
<td>4.07 (1.19)</td>
<td>n.s.</td>
</tr>
<tr>
<td>State Authenticity</td>
<td>4.66 (1.56)</td>
<td>4.49 (1.47)</td>
<td>n.s.</td>
<td>5.72 (1.07)</td>
<td>4.49 (1.54)</td>
<td>.93***</td>
</tr>
<tr>
<td>Approach Motivation (BAS)</td>
<td>1.79 (0.24)</td>
<td>1.75 (0.31)</td>
<td>n.s.</td>
<td>1.81 (0.27)</td>
<td>1.77 (0.26)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Avoidance Motivation (BIS)</td>
<td>1.79 (0.24)</td>
<td>1.81 (0.21)</td>
<td>n.s.</td>
<td>1.71 (0.31)</td>
<td>1.81 (0.22)</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

Table 3.4 Descriptive statistics for key variables measured in Study 3, separated by student status (left) and ethnicity (right).

We predicted that participants who were less identified with mainstream North American culture would report less state authenticity on a North American campus. To test this, we ran a single-predictor regression model in which state authenticity on campus was predicted by identification with mainstream North American culture. In line with predictions, participants who were less identified with mainstream North American culture reported less state authenticity.
on campus, $\beta = .25$, $t(165) = 3.25$, $p = .001$. Including identification with heritage culture as a second predictor in this model does not change effects, but given that not all participants reported a heritage culture ($N = 7$), we only include identification with mainstream culture in the main model to maximize statistical power. Note that, in an additional analysis, this core effect was not moderated by student status (international versus domestic, $\beta = -.20$, $t(161) = -0.96$, $p = .34$) nor by ethnicity (White versus non-White, $\beta = -.19$, $t(161) = -0.75$, $p = .45$).

3.2.2.2 Mediation by Self-Concept, Goal, and Social Fit

We next hypothesized that the direct effect of identification with mainstream North American culture on state authenticity would be mediated by self-concept, goal, and social fit. As seen in Table 3.3, the three types of fit were moderately correlated, but not so highly as to suggest significant construct overlap ($r$’s range from $.47$-.69). We ran a mediation model (model 4 in PROCESS, version 2.16.3; Hayes, 2016) in which state authenticity was predicted by identification with mainstream North American culture, as mediated by self-concept, goal, and social fit (entered as parallel mediators). The model was tested using a bootstrap estimation approach with 5000 samples.

Results revealed that overall, the three types of fit explained significant variance in the relationship between identification with mainstream North American culture and state authenticity, $\beta = .20$, SE = .05, 95% CI = [.11, .31]. Note that this closely approaches results of our sensitivity analysis, which indicates we were powered to detect an effect of $f^2 = .05$ ($r = \ldots$

---

12 $N = 2$ outliers on identification with mainstream culture were excluded. Including these participants in the analyses does not change effects.
13 $N = 2$ outliers on identification with mainstream culture and $N = 3$ outliers on goal fit were excluded. Including these participants in the analyses does not change effects.
Within the model, self-concept fit and social fit were each significant as unique individual mediators (self-concept fit, $\beta = .05$, SE = .03, 95% CI = [.003, .12]; social fit, $\beta = .14$, SE = .04, 95% CI = [.07, .24]). Goal fit, on its own, was not a significant mediator ($\beta = .02$, SE = .02, 95% CI = [-.01, .07]), perhaps owing to the measurement overlap with self-concept fit. As in our first regression model, we tested whether these results were moderated by student status (international versus domestic) or ethnicity (White versus non-White) by running a moderated mediation model (model 59 in PROCESS, version 2.16.3; Hayes, 2016) with all paths moderated by either student status or ethnicity. Both indices of moderated mediation were non-significant through all three mediators of fit (full results are reported in supplementary materials), suggesting that effects did not significantly differ by student status, nor by ethnicity.

Figure 3.1 Indirect effect of identification with mainstream North American culture on state authenticity through self-concept fit, goal fit, and social fit. Coefficients in the model represent standard coefficients.

### 3.2.2.3 Ruling Out Alternative Explanations

#### 3.2.2.3.1 Identification with Heritage Culture
One plausible alternative account for our observed results is that feeling connected or identified with one’s heritage culture similarly predicts greater fit and authenticity. Past work finds that maintaining connections to one’s own heritage culture (i.e., *integration*, Berry, 1997) provides a number of benefits, including lowered stress and more successful psychological adaptation (Berry, 2005; Hui, Chen, Leung, & Berry, 2015). Thus, we retested our key theoretical model (Figure 3.1) using identification with heritage culture, rather than mainstream North American culture, as the key predictor. Models were tested using a bootstrap estimation approach with 5000 samples. The indirect effect was non-significant, $\beta = .06$, $SE = .06$, 95% CI = [-.11, .21]$^{14}$, providing support for identification with mainstream North American culture as a unique predictor of state authenticity through fit.

### 3.2.2.4 Predicting Approach-Avoidance from Identification with Mainstream Culture and Fit

Finally, we hypothesized that greater identification with mainstream North American culture would predict more approach motivation and less avoidance motivation on campus, as serially mediated by fit and state authenticity. To test this, we ran two serial mediation models (model 6 in PROCESS, version 2.16.3; Hayes, 2016) in which approach (Figure 3.2) and avoidance (Figure 3.3) were predicted by identification with mainstream North American culture, as mediated by fit and state authenticity. In this model, we used a composite measure of all three types of fit ($\alpha = .88$) to simplify the predictive model. Neither indirect effect of identification with mainstream North American culture on approach nor avoidance was significant (approach; $N = 1$ outlier on identification with heritage culture and $N = 3$ outliers on goal fit were excluded. Including these participants in the analyses does not change effects.}

---

$^{14}$ $N = 1$ outlier on identification with heritage culture and $N = 3$ outliers on goal fit were excluded. Including these participants in the analyses does not change effects.
$\beta = -0.005$, $SE = .02$, $95\% CI = [-.04, .03]$\textsuperscript{15}; avoidance, $\beta = -0.03$, $SE = .02$, $95\% CI = [-.07, .002]$\textsuperscript{16}. However, because this study might have been underpowered to test serial mediation (this effect size is considerably smaller than that indicated by our sensitivity analysis, which suggests we were powered to detect an effect size of $f^2 = .05, r = .21$), we will return to this hypothesis in Study 4 with a larger sample.

Figure 3.2 Indirect effect of identification with mainstream North American culture on approach through fit and state authenticity. Coefficients in the model represent standard coefficients.

\textsuperscript{15} $N = 2$ outliers on identification with mainstream culture and $N = 3$ outliers on goal fit were excluded. Including these participants in the analyses does not change effects.

\textsuperscript{16} $N = 2$ outliers on identification with mainstream culture, $N = 3$ outliers on goal fit, and $N = 2$ outliers on avoidance were excluded. Running this model without excluding these participants changes effects (the effect becomes significant). One key limitation of Study 3 was the inability to draw conclusive inferences from our data. This is later addressed by testing models with a preregistered design and larger sample in Study 4.
3.2.3 Discussion

Study 3 adds to the findings of Studies 1 and 2 by examining how identification with one’s cultural (in addition to academic) environment might similarly cue a sense of state authenticity. Importantly, Study 3 is the first to test self-concept fit, goal fit, and social fit as three distinct mediators of the relationship between cultural identification and state authenticity. Although we found evidence that cultural identification uniquely predicts each kind of fit, only self-concept fit and social fit were distinct mediators of the relationship with state authenticity. Goal fit was not a significant mediator in the full model. Given that our measurement of the three types of fit were prone to potential measurement issues (α’s ranged from .74 to .79 and results of the factor analyses in Table 3.2 suggested that these factors did not clearly separate onto three dimensions), a key goal of Study 4 was to refine our measures of fit and retest the model using these new measures.

Figure 3.3 Indirect effect of identification with mainstream North American culture on avoidance through fit and state authenticity. Coefficients in the model represent standard coefficients.
In addition, we observed no evidence for an indirect effect of cultural identification on approach (BAS) and avoidance (BIS) motivation as mediated by fit and state authenticity. However, it is important to note that this initial study was not well-powered to test these more complex hypotheses. Sensitivity analyses suggest we were powered to detect a mid-sized effect of $f^2 = .05 (r = .21)$, which is larger than the effects observed in the models examining approach (BAS) and avoidance (BIS) as outcomes ($\beta = -.005$ and $\beta = -.03$, respectively). Study 4 sought to address these shortcomings by testing these models among a larger, preregistered sample to gain a more conclusive estimate of effects. Finally, in Study 3, we observed that effects were not moderated by student status (international vs. domestic) or ethnicity. Again, given our small sample size, we were not fully powered to detect these moderated mediation effects. Our larger sample size in Study 4 allowed us to gain a more conclusive estimate of these effects.

3.3 Study 4

The goal of Study 4 was to replicate Study 3 using a larger sample to adequately power predicted effects. Based on our initial findings and observed effect sizes in Study 3, we preregistered sample size and predictions for Study 4 (preregistered documentation for this study can be found at osf.io/p8fgn). Additionally, based on the factor analysis conducted in Study 3, in Study 4 we sought to refine our measures of self-concept, goal, and social fit to identify three distinct subscales. Finally, given our larger sample in Study 4, we sought to conclusively rule out several alternative explanations. In models testing identification with mainstream North American culture as a predictor, we again tested whether identification with heritage culture yielded similar effects. Past research has found support for positive emotionality as an antecedent of approach motivation (Elliot & Thrash, 2002), and interdependent self-construal and negative emotionality as antecedents of avoidance motivation (Elliot, Chirkov, Kim, & Sheldon, 2001; Elliot & Thrash,
Thus, in addition to testing key hypotheses on approach and avoidance among a high-powered sample, in models testing approach and avoidance as an outcome, we sought to rule out self-construal style and emotionality as alternative explanations for effects.

3.3.1 Method

3.3.1.1 Participants and Procedure

Participants were $N = 399$ undergraduates who completed an online study through the human subjects pool at The University of British Columbia. As preregistered, we excluded data from participants who had missing data for more than 20 percent of non-demographic items ($n = 38$). Since the survey was distributed through multiple platforms (students for other laboratory studies were provided to a link for this online survey if the session was cancelled), there were also a number of participants who completed the survey twice ($n = 17$). In these cases, their first response was used in analyses. The final sample of participants was comprised of 344 undergraduate students ($M_{age} = 20.32, SD = 4.02$; 265 women, 77 men, 2 non-binary). Sensitivity analyses suggest we were powered to detect a small effect of $f^2 = .02$ ($r = .14$) with power = .80, alpha = .05. In exchange for their participation, participants received partial course credit.

As in Study 3, the sample in Study 4 was diverse both in terms of national origin and/or ethnic background (see Table 3.5). The majority of participants identified with a non-white

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Because we were unsure if effects might still be more prominent for foreign-born students, we preregistered the goal to collect data until we had at $N = 153$ foreign-born students. This sample size would allow us the ability to detect an indirect effect of based on guidelines developed by Fritz and MacKinnon (2007) on this subsample. However as in Study 3, we also planned to examine whether effects were moderated by student status (as well as ethnicity). Those analyses revealed no significant moderation by student status and thus we report results on the full sample to provide greater statistical power for complex analysis. Key results are unchanged when examining effects for foreign-born students only, and nationality did not moderate effects. These results are reported in the supplemental material.
ethnic category (80.52%) (see supplementary materials for full demographic information). In addition, almost half (45.06%) of students were first-generation status (i.e., not born in Canada) and over one-third (36.92%) of students were second-generation status (i.e., their parents were not born in Canada). As can be seen in Table 3.5 with the cross-tabs of these two variables, only about 12% of the entire sample ($N = 40$) were third-and-beyond generation White Canadian students who might be considered as representing the cultural default for mainstream Canadian culture. The remaining 88% would be considered either a national and/or ethnicity minority in the broader culture. Full demographic information is reported in the supplementary materials.

<table>
<thead>
<tr>
<th></th>
<th>First Generation</th>
<th>Second Generation</th>
<th>Third+ Generation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$N$ (% of sample)</td>
<td>$N$ (% of sample)</td>
<td>$N$ (% of sample)</td>
<td>$N$ (% of sample)</td>
</tr>
<tr>
<td><strong>White</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>$N = 15$ (4.36%)</td>
<td>$N = 12$ (3.49%)</td>
<td>$N = 40$ (11.63%)</td>
<td>$N = 67$ (19.48%)</td>
</tr>
<tr>
<td>Non-White</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arab</td>
<td>$N = 2$</td>
<td>$N = 0$</td>
<td>$N = 0$</td>
<td>$N = 2$ (0.58%)</td>
</tr>
<tr>
<td>Black</td>
<td>$N = 3$</td>
<td>$N = 2$</td>
<td>$N = 0$</td>
<td>$N = 5$ (1.45%)</td>
</tr>
<tr>
<td>Chinese</td>
<td>$N = 58$</td>
<td>$N = 52$</td>
<td>$N = 4$</td>
<td>$N = 114$ (33.14%)</td>
</tr>
<tr>
<td>Filipino</td>
<td>$N = 5$</td>
<td>$N = 2$</td>
<td>$N = 0$</td>
<td>$N = 7$ (2.03%)</td>
</tr>
<tr>
<td>Japanese</td>
<td>$N = 3$</td>
<td>$N = 1$</td>
<td>$N = 0$</td>
<td>$N = 4$ (1.16%)</td>
</tr>
<tr>
<td>Korean</td>
<td>$N = 11$</td>
<td>$N = 6$</td>
<td>$N = 0$</td>
<td>$N = 17$ (4.94%)</td>
</tr>
<tr>
<td>Latin Am.</td>
<td>$N = 0$</td>
<td>$N = 1$</td>
<td>$N = 1$</td>
<td>$N = 2$ (0.58%)</td>
</tr>
<tr>
<td>Multiracial</td>
<td>$N = 16$</td>
<td>$N = 15$</td>
<td>$N = 12$</td>
<td>$N = 43$ (12.50%)</td>
</tr>
<tr>
<td>Other</td>
<td>$N = 11$</td>
<td>$N = 1$</td>
<td>$N = 1$</td>
<td>$N = 13$ (3.78%)</td>
</tr>
<tr>
<td>South Asian</td>
<td>$N = 19$</td>
<td>$N = 21$</td>
<td>$N = 3$</td>
<td>$N = 43$ (12.50%)</td>
</tr>
<tr>
<td>Southeast Asian</td>
<td>$N = 4$</td>
<td>$N = 13$</td>
<td>$N = 1$</td>
<td>$N = 18$ (5.23%)</td>
</tr>
<tr>
<td>West Asian</td>
<td>$N = 8$</td>
<td>$N = 1$</td>
<td>$N = 0$</td>
<td>$N = 9$ (2.62%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$N = 155$ (45.06%)</td>
<td>$N = 127$ (36.92%)</td>
<td>$N = 62$ (18.02%)</td>
<td>$N = 344$ (100%)</td>
</tr>
</tbody>
</table>

Table 3.5 Participant demographics in Study 4.
3.3.1.2 Measures

Descriptive statistics and items for all measures are reported in the supplementary materials.

3.3.1.2.1 Identification with Mainstream North American Culture

We measured identification with mainstream North American culture using the same measure as in Study 3. In Study 4, we excluded two items from analyses: “I believe in mainstream North American values” and “I am interested in having North American friends” to avoid construct overlap with goal and social fit, although note that this change was not preregistered. We excluded the same parallel items from the heritage culture subscale. Testing all key models with these items included does not change any reported effects. These modified versions of the heritage culture and mainstream culture subscales remained reliable ($\alpha_{\text{heritage}} = .72$, $\alpha_{\text{mainstream}} = .87$).

3.3.1.2.2 Measures of Fit

In Study 4, we sought to streamline the measurement of each type of fit to three items per scale and some items were reworded in an attempt to more clearly distinguish self-concept fit from goal fit. In Study 4, we removed the first two self-concept fit items and incorporated a third item (“I feel alienated from myself at UBC, even when I’m alone”). The modified measure was slightly more reliable, $\alpha = .79$ (compared to $\alpha = .74$ in Study 3). We also removed the fourth item used in the original goal fit scale and implemented a minor wording change in the first item. The modified measure showed poorer reliability than in Study 3, $\alpha = .58$ (compared to $\alpha = .79$ in Study 3). Finally, in Study 4, we removed the second item of the social fit subscale. The modified measure showed comparable reliability to the version used in Study 3, $\alpha = .80$ (compared to $\alpha = .79$ in Study 3). All items are presented in Table 3.6 below.
As in Study 3, in Study 4, we conducted a factor analysis of these nine items using maximum likelihood extraction method and direct oblimin rotation with Kaiser normalization. This exploratory factor analyses yielded a three-factor solution that broadly captured self-concept, goal, and social fit, although again items did not cleanly separate.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Concept Fit 1</td>
<td>Being at UBC brings out my true self.</td>
<td><strong>.945</strong></td>
<td>.347</td>
<td>-.657</td>
</tr>
<tr>
<td>Self-Concept Fit 2</td>
<td>Even when I’m alone and doing nothing, simply being at UBC makes me feel like myself.</td>
<td><strong>.837</strong></td>
<td>.369</td>
<td>-.541</td>
</tr>
<tr>
<td>Goal Fit 2</td>
<td>I often feel that UBC is a place that allows me to realize my goals.</td>
<td><strong>.661</strong></td>
<td>.531</td>
<td>-.522</td>
</tr>
<tr>
<td>Social Fit 3</td>
<td>When I’m with other students at UBC, I generally feel I can be myself.</td>
<td>.533</td>
<td>.411</td>
<td><strong>-.721</strong></td>
</tr>
<tr>
<td>Self-Concept Fit 3</td>
<td>I feel alienated from myself at UBC, even when I’m alone. (R)</td>
<td>.485</td>
<td><strong>.707</strong></td>
<td>-.592</td>
</tr>
<tr>
<td>Goal Fit 1</td>
<td>UBC’s values are not a good fit to my own personal values. (R)</td>
<td>.330</td>
<td><strong>.658</strong></td>
<td>-.432</td>
</tr>
<tr>
<td>Goal Fit 3</td>
<td>At UBC, my behavior is never motivated by my own intrinsic goals and values. (R)</td>
<td>.151</td>
<td>.474</td>
<td>-.303</td>
</tr>
<tr>
<td>Social Fit 1</td>
<td>I often feel that I do not fit in well when I’m on campus with other UBC students. (R)</td>
<td>.536</td>
<td><strong>.581</strong></td>
<td><strong>-.831</strong></td>
</tr>
<tr>
<td>Social Fit 2</td>
<td>I often find myself adjusting my behavior to fit in with others’ expectations of me at UBC. (R)</td>
<td>.392</td>
<td>.459</td>
<td><strong>-.695</strong></td>
</tr>
</tbody>
</table>

Table 3.6 Results of factor analysis among fit items in Study 4. Note. The three highest loading items on each factor are bolded.

As seen in Table 3.6, as in Study 3, items measuring social fit generally loaded together. Yet, again, there was not as clear of a separation between items measuring self-concept and goal fit. To provide the clearest test of the unique predictive effects of the three kinds of fit, we again
retained our *a priori* plan to construct composite measures of fit based on our original intentions. Since conducting these studies, we have developed improved measures of these constructs that we intend to use in an extended replication of this work. The possible measure overlap between self-concept and goal fit is an important limitation of the present studies reported below.

3.3.1.2.3  **State Authenticity**

We used the same single-item visual measure of state authenticity in Study 4 as we did in Study 3.

3.3.1.2.4  **Approach-Avoidance**

We used the same measures of approach and avoidance motivation in Study 4 as we did in Study 3. Approach and avoidance showed comparable reliability as in Study 3 (approach, $\alpha = .76$, compared to $\alpha = .80$ in Study 3; avoidance, $\alpha = .64$; compared to $\alpha = .59$ in Study 3).

3.3.2  **Results**

As preregistered, all analyses reported in Study 4 exclude those who were above or below three standard deviations from the mean on any given variable in the reported models (see supplemental materials for *N*’s of excluded participants on each given variable). Running these models without excluding outliers does not change any of our reported results.

3.3.2.1  **Relationship Between Identification with Mainstream Culture and State Authenticity**

As in Study 3, participants who were more highly identified with mainstream North American culture reported greater state authenticity on campus, $\beta = .22$, $t(338) = 4.08$, $p < .001^{18}$. Also

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$^{18}$ *N* = 1 outlier on identification with mainstream culture was excluded from this analysis. Including this participant does not change results.
replicating Study 3, including identification with heritage culture as a second predictor in this model does not change effects, but given that some participants did not report a heritage culture ($N = 22$), we only include identification with mainstream culture in our main model to maximize our statistical power. Note that, in an additional analysis, this core effect was not moderated by student status (international versus domestic, $\beta = .06, t(334) = 0.54, p = .59$) nor by ethnicity (White versus non-White, $\beta = -.18, t(334) = -1.12, p = .27$).

As seen in Table 3.8, as in Study 3, foreign-born and domestic students significantly differed on their identification with mainstream North American and their heritage culture, with domestic students being higher on their identification with mainstream North American culture and foreign-born students being higher on their identification with their heritage culture. Foreign-born and domestic students also significantly differed in their levels of avoidance motivation (BIS), with foreign-born students being higher on avoidance motivation. As seen in Table 3.8, White were also higher than non-White students on their identification with mainstream North American culture; and Non-White students were higher than White students on avoidance motivation.
Table 3.7 Descriptive statistics for key variables measured in Study 4. Note. Identification with mainstream and heritage culture are measured on a 9-point scale; approach and avoidance motivation are measured on dichotomous scales (1 = no, 2 = yes). All other measures are on a 7-point scale. See supplemental material for full measures. Significant correlations are bolded.

<table>
<thead>
<tr>
<th></th>
<th>Non-Foreign Born Students</th>
<th>Foreign-Born Students</th>
<th>Difference d</th>
<th>White Students</th>
<th>Non-White Students</th>
<th>Difference d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification with Mainstream North American Culture</td>
<td>7.04 (1.32)</td>
<td>6.47 (1.46)</td>
<td>.41***</td>
<td>7.36 (1.20)</td>
<td>6.65 (1.42)</td>
<td>.54***</td>
</tr>
<tr>
<td>Identification with Heritage Culture</td>
<td>6.02 (1.26)</td>
<td>6.52 (1.36)</td>
<td>-.38***</td>
<td>6.24 (1.21)</td>
<td>6.25 (1.36)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Self-Concept Fit</td>
<td>4.61 (1.19)</td>
<td>4.68 (1.12)</td>
<td>n.s.</td>
<td>4.77 (1.23)</td>
<td>4.61 (1.14)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Goal Fit</td>
<td>5.02 (0.96)</td>
<td>5.09 (0.96)</td>
<td>n.s.</td>
<td>5.28 (0.97)</td>
<td>5.00 (0.95)</td>
<td>.29*</td>
</tr>
<tr>
<td>Social Fit</td>
<td>4.64 (1.24)</td>
<td>4.74 (1.12)</td>
<td>n.s.</td>
<td>4.87 (1.28)</td>
<td>4.64 (1.16)</td>
<td>n.s.</td>
</tr>
<tr>
<td>State Authenticity</td>
<td>4.92 (1.43)</td>
<td>4.70 (1.36)</td>
<td>n.s.</td>
<td>4.96 (1.45)</td>
<td>4.78 (1.39)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Approach Motivation (BAS)</td>
<td>1.76 (0.22)</td>
<td>1.80 (0.22)</td>
<td>n.s.</td>
<td>1.77 (0.19)</td>
<td>1.78 (0.23)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Avoidance Motivation (BIS)</td>
<td>1.74 (0.28)</td>
<td>1.80 (0.23)</td>
<td>-.23*</td>
<td>1.70 (0.34)</td>
<td>1.79 (0.23)</td>
<td>-.31*</td>
</tr>
</tbody>
</table>
3.3.2.2 Mediation by Self-Concept, Goal, and Social Fit

We next tested whether the direct effect of identification with mainstream North American culture on state authenticity would be uniquely mediated by self-concept, goal, and social fit. As seen in Table 3.7, the three types of fit were moderately correlated, but not correlated so highly as to suggest significant construct overlap ($r$’s range from .52-.65). As in Study 3, we ran a mediation model (model 4 in PROCESS, version 2.16.3; Hayes, 2016) in which state authenticity was predicted by identification with mainstream North American culture, as mediated by self-concept, goal, and social fit (entered as parallel mediators). The model was tested using a bootstrap estimation approach with 5000 samples.

Results revealed that overall, these measures explained a significant amount of variance in the relationship between identification with mainstream North American culture and state authenticity, $\beta = .15$, SE = .03, 95% CI = [.09, .21]$^{19}$. Note that these effects are above the threshold indicated by our sensitivity analysis, which suggests we were powered to detect an effect of $f^2 = .02$ ($r = .14$). Within the full model, self-concept fit, $\beta = .06$, SE = .02, 95% CI = [.03, .11]; and social fit, $\beta = .08$, SE = .02, 95% CI = [.04, .14]; were significant as individual mediators. Again, as in Study 3, goal fit, was not a unique significant mediator ($\beta = .0002$, SE = .01, 95% CI = [-.02, .02]).

$^{19}$ $N = 1$ outlier on identification with mainstream culture was excluded from this analysis. Including this participant does not change results.
3.3.2.3 Predicting Approach-Avoidance from Identification with Mainstream Culture and Fit

Finally, we hypothesized that greater identification with mainstream North American culture would predict more approach motivation and less avoidance motivation on campus, as mediated by fit and state authenticity. To test this, as in Study 3, we ran two serial mediation models (model 6 in PROCESS, version 2.16.3; Hayes, 2016) in which approach (Figure 3.5) and
avoidance (Figure 3.6) were predicted by identification with mainstream North American culture, as mediated by fit (composite measure of all three types of fit; $\alpha = .80$) and state authenticity. The model was tested using a bootstrap estimation approach with 5000 samples. In this larger sample, results revealed a significant indirect effect of identification on approach as mediated by fit and state authenticity, $\beta = .03$, SE = .01, 95% CI = [.01, .06]$^{20}$, and a significant indirect effect of identification on avoidance as mediated by fit and state authenticity, $\beta = -.03$, SE = .01, 95% CI = [-.05, -.009]. As in Study 3, note that these effects remain smaller than the threshold indicated by our sensitivity analysis, which suggests we were powered to detect an effect of $f^2 = .02$ ($r = .14$).

Figure 3.5 Indirect effect of identification with mainstream North American culture on approach through fit and state authenticity. Coefficients in the model represent standard coefficients.

$^{20}$ $N = 2$ outliers on approach were excluded from this analysis. Including these participants does not change results.
3.3.2.4 Ruling Out Alternative Explanations

Another key goal of Study 4, given our larger sample size, was to bolster our confidence in observed effects by ruling out several alternative explanations. These alternative explanations are further detailed and tested below.

3.3.2.4.1 Identification with Heritage Culture

As in Study 3, in Study 4, we sought to rule out identification with heritage culture as an alternative explanation for our findings. Models were tested using a bootstrap estimation approach with 5000 samples\(^{21}\). All models were non-significant (Figure 3.4 predicting state authenticity, \(\beta = .02, SE = .04, 95\% CI = [-.06, .11]\); Figure 3.5 predicting approach, \(\beta = .004, \ldots\)

\(^{21}\) \(N = 6\) outliers on identification with heritage culture were excluded from these analyses. Including these participants does not change results.
SE = .007, 95% CI = [-.006, .02]; Figure 3.6 predicting avoidance, $\beta = -.005$, SE = .01, 95% CI = [-.03, .01]), providing support for identification with mainstream North American culture as a unique predictor of fit, state authenticity, approach, and avoidance motivation on campus.

**3.3.2.4.2 Independent Self-Construal and Emotionality as Antecedents of Approach and Avoidance Motivation**

Past research finds that positive emotionality is an antecedent of approach motivation (Elliot & Thrash, 2002). Similarly, interdependent self-construal and negative emotionality are antecedents of avoidance motivation (Elliot, Chirkov, Kim, & Sheldon, 2001; Elliot & Thrash, 2002). These findings raise the possibility that our findings on approach (BAS) and avoidance (BIS) motivation might be better accounted for by individual differences in emotionality or self-construal style than by fit and authenticity. Thus, we retested our model in which approach (BAS) was the key outcome (Figure 3.5) controlling for positive emotionality (SPANE; Diener et al., 2009), and retested our model in which avoidance (BIS) was the key outcome (Figure 3.6) controlling for interdependent self-construal style (Singelis, 1994) and negative emotionality (SPANE; Diener et al., 2009). In both cases, models were robust to controlling for emotionality (approach as an outcome controlling for positive emotionality, $\beta = .009$, SE = .005, 95% CI = [.002, .02]; avoidance as an outcome controlling for negative emotionality, $\beta = -.01$, SE = .01, 95% CI = [-.03, -.0005]). Our effects were also robust to controlling for interdependent self-

22 An additional $N = 2$ outliers on approach were excluded from these analyses. Including these participants does not change results.
23 $N = 1$ outlier on identification with mainstream culture, $N = 2$ outliers on approach, and $N = 2$ outliers on positive emotionality were excluded from these analyses.
24 $N = 1$ outlier on identification with mainstream culture and $N = 2$ outliers on negative emotionality were excluded from these analyses.
construal style (avoidance as an outcome controlling for interdependent self-construal style, $\beta = -0.02$, $SE = 0.01$, $95\% CI = [-0.05, -0.009]$). These results suggest that our findings are not accounted for by self-construal style, nor by emotionality.

### 3.3.3 Discussion

The key contribution of Study 4 was our ability to replicate effects and test hypotheses examined in Study 3 using a high-powered, larger sample. Study 4 provides added support for and clarification around the relationships observed in Study 3. Specifically, we show that greater identification with mainstream North American culture (but not one’s own heritage culture) predicts greater fit and authenticity on campus, which then predicts greater approach motivation (BAS) and less avoidance motivation (BIS). These models were robust to controlling for self-construal style, and also when controlling for positive and negative emotionality. This suggests that fit and authenticity explains above and beyond self-construal style and emotionality in the relationship between identification with mainstream North American culture and student motivation on the university campus.

Another key conclusion drawn from Study 4 is that effects are not moderated by student status (foreign-born versus non-foreign-born), nor by ethnicity (White versus non-White). Although both Studies 3 and 4 were originally designed to test moderation by student status, the same variability in identification with mainstream culture (but not heritage culture) predicted fit and state authenticity on campus among the general student sample. Regardless of student status or ethnicity, those who were more highly identified with mainstream North American culture similarly enjoyed the benefits of greater fit and state authenticity.

Our findings are congruent with current theory in cultural psychology which suggests that identification with mainstream culture: 1) varies independently of identification with one’s
heritage culture (Berry, 1980; Celano & Tyler, 1991; LaFromboise, Coleman, & Gerton, 1993; Laroche, Kim, Hui, & Joy, 1996; Sayegh & Lasry, 1993; Sanchez & Fernandez, 1993; Zak, 1973), 2) varies even among majority members of the culture (Wan, Chiu, Peng, & Tam, 2007), and 3) is not operationalized by demographic variables such as generation status or ethnicity (Markus & Kitayama, 2010; Ryder, Alden, & Paulhus, 2000). In fact, a variety of individual differences affect the extent to which foreign-born students identify with the mainstream culture (e.g., age of exposure to the mainstream culture, residence in an ethnic enclave in the new culture, willingness to seek out mainstream cultural experiences, frequency of contact with people from the mainstream culture; Cheung, Chudek, & Heine, 2011; Ryder, Alden, & Paulhus, 2000). Thus, although we found that foreign-born students were lower on average in their identification with mainstream North American culture than domestic students, the extent to which this translates into fit and state authenticity on campus was present for both foreign-born and domestic students.

The findings across Studies 3 and 4 have implications for student performance. Approach motivation and promotion strategies (i.e., those measured by BAS) are the norm in North American cultural contexts (Elliot, Chirkov, Kim, & Sheldon, 2001; Lee et al., 2000; Lockwood, Marshall, & Sadler, 2005; Uskul, Sherman, & Fitzgibbon, 2009). Conversely, avoidance motivation and prevention strategies (i.e., those measured by BIS) are non-normative by North American cultural standards and might be maladaptive motivational strategies for students striving to succeed in a North American university context. Given past work demonstrating the underperformance that results when students’ whose learning orientation does not match the cultural context (Kim, 2002), the lack of an approach motivation or the presence avoidance
orientation might lead to student underperformance in the North American university context—an assumption that should be further examined and tested.

3.4 Limitations

One key limitation of these data is that we do not find evidence for goal fit as a unique mediator of the relationship between identification with mainstream North American culture and state authenticity. From these findings, there are two possibilities: 1) an adjustment is needed with respect to our measurement of this construct, or 2) an adjustment is needed with respect to the theoretical framework itself. Regarding the first possibility, we might see different results with a more precise measurement of goal fit as a construct. Goal fit showed less than ideal reliability ($\alpha = .58$) in Study 4, and factor analyses in Studies 3 and 4 revealed that the three types of fit did not load clearly onto three separate factors. In data from a recent validation study in which we developed more precise measures of the three types of fit among a sample of working professionals, our measure of goal fit showed substantially improved reliability ($\alpha = .94$), and also loaded cleanly onto a separate factor. Yet, within this study, again we found that goal fit did not uniquely predict state authenticity. Given this evidence, we intend to replicate the current findings in this context using this more reliable measure of goal fit to rule out the possibility that the lack of unique mediation by goal fit was simply reflective of imprecise measurement. It is also possible that these studies examine goal fit in situations where individuals select into contexts primarily seeking goal fit (e.g., university, career). Future studies will tease apart these possibilities by expanding the scope of our questions to contexts in which people might be primarily motivated by social or self-concept fit.

One final limitation with respect to Studies 3 and 4 is that our measure of approach and avoidance motivation captures a dispositional motivational orientation, albeit one we measured
as being situated in students’ experiences on campus (i.e., activation versus inhibition). As discussed above, this might have implications for student performance on campus. Yet an important restriction of this measure is that it does not necessarily capture a desire to approach or avoid the cultural environment itself. Perhaps owing to this limitation, across Studies 3 and 4, effects were below the threshold indicated by results of our sensitivity analyses. We are currently in the process of testing and validating a new measure of approach and avoidance of the environment that we intend to use in future iterations of this work to examine whether we observe similar effects.

Other limitations that apply to all studies in this line of work (i.e., use of self-report and correlational methods) are reviewed in the general discussion.

3.5 Future Directions

Across Studies 3 and 4, we find that results are not moderated by student status. This might be, in part, due the context in which these studies are conducted. The University of British Columbia houses a diverse student population in which foreign-born students make up a substantial proportion of the student population (approximately 23% of the student population is comprised of international students; The University of British Columbia, 2017). Given past work suggesting a ‘critical mass’ of 15% at which conditions of the minority group improve (e.g., Etzkowitz, Kemelgor, Neuschatz, Uzzi, & Alonzo, 1994), the psychological experience of being a foreign-born student in a university context where a large majority of one’s peers are also foreign-born might provide protective benefits that might not be experienced in another university context where foreign-born students are in the minority (i.e., less than 15%). Despite this, we find that foreign-born students in our sample report expecting greater discrimination on the basis of their nationality ($M = 2.90, SD = 1.37$) than domestic students ($M = 2.43, SD = 1.45$; $t(335) = 3.10, p$
suggesting that even in environments where foreign-born students are at critical mass, they are not immune from devaluation on the basis of their social identity. Future work will need to test these questions on other university campuses to disentangle these possibilities.

Another promising direction for future research on the relationship between cultural identification, fit, and state authenticity is to examine how experiences of cultural fit might shape and impact fit and state authenticity over time. Just as studies in the domain of acculturation often employ longitudinal methods to understand key outcomes such as psychological adjustment and health (Gordon-Larsen, Harris, Ward, & Popkin, 2003; Murray et al., 2014; Ying & Han, 2007), the present line of work may benefit from understanding the change over time one experiences on their identification with mainstream culture, fit, and authenticity. For example, for a foreign-born student in a mainstream North American university context, we might predict that their initially low levels of fit and state authenticity will increase as they become more identified with the mainstream culture. Such predictions will be critical for understanding the way in which these dynamic processes operate over time, and also across a variety of contexts.

As we enter an era in which education is becoming increasingly global (Suarez-Orozco & Qin-Hilliard, 2004), understanding the factors that shape a diverse student populations’ sense of cultural fit in university will be critical. The present work complements work identifying the ways in which external, culturally situated barriers inhibit student success by highlighting how internal, culturally situated barriers such as lack of fit and authenticity also inhibit student success. Countries such as Australia, the UK, and Canada have implemented strategies and adopted policy plans designed to increase the proportion of international students studying in their institutions (Schneider, 2000). Many of these policies, which include initiatives like simplifying the visa application process, coordinating efforts between government bodies, and
allocating greater funding to outreach efforts (Schneider, 2000), target the external barriers international students face in their transition to mainstream cultural learning contexts. I propose that it is equally critical for universities to consider how they might actively shape environments that cue a sense of fit and authenticity, thus targeting internal barriers for students who might otherwise be steered away by a lack of fit to the environment.
Chapter 4: General Discussion

Authenticity has long been regarded as a trait that varies across individuals. The present work has sought to consider the ways in which authenticity as a state signals to the individual information about their identity and whether that identity is a fit to the environment. I have presented data across two lines of work testing key tenets of a new theoretical model (the SAFE model) and have considered how this theoretical model might inform self-segregation along dimensions of identity in two unique contexts.

4.1 Summary of Findings

In Chapter 2 (Studies 1 and 2), I apply the SAFE model as lens through which to understand gender differences on selection into different career trajectories. In Study 1, we validate the core assumption that expecting to feel more authentic in the space associated with engineering than in the space associated with psychology predicts greater approach intentions toward the engineering space than the psychology space, even when controlling for baseline levels of familiarity with each space. In Study 2, we show that women are less motivated than men to approach the physical space associated with engineering because they expect to feel less authentic within an engineering space, and also endorse “systemizing” activity preferences to a lesser degree than men. This effect is robust to controlling for whether one already works or studies in a psychology or engineering career, suggesting that these findings are not explained by prior familiarity with the domain.

In Chapter 3 (Studies 3 and 4), we expand the scope of our findings by testing our theoretical model within an actual (as opposed to anticipated) diverse university context. In this set of studies, we consider how North American university environments can signal fit or not fit students to the extent that they identify with mainstream North American culture. Across Studies
3 and 4, we show that greater identification with mainstream North American culture (but not one’s own heritage culture) predicts greater fit and authenticity on campus. In Study 4, we find that greater fit and authenticity predict greater approach motivation (BAS) and less avoidance motivation (BIS). We also rule out several alternative explanations, including differences on self-construal style, positive emotionality, and negative emotionality.

4.2 Implications

Taken together, these findings highlight the process by which individuals choose to self-segregate into different environments and spaces. Specifically, we find that variation on fit and authenticity predict different approach orientations. This complements an extant body of literature considering the ways in which external forces within the environment can discourage individuals from entering them. Through this work, I propose that understanding the internal processes that can lead individuals to self-select out of these environments is equally critical for research seeking to understand the marginalization of devalued groups in society. Importantly, the current research implies that efforts designed to mitigate external barriers (e.g., company quotas to recruit more women into STEM; university initiatives to enroll more international students) will not be effective unless those environments have also taken measure to create environments and spaces which afford a sense of fit and authenticity to those within them.

Below, I suggest several ways in which environments can be structured to afford a greater sense of fit and authenticity.

4.2.1 Increasing Identification with the Environment

The present work highlights several key recommendations for fostering authenticity among members of social groups who would otherwise experience a lack of authenticity. One potential point of intervention is increasing identification with the environment. Across the four studies
presented in Chapters 2 and 3, we consistently find that identification, either with the domain represented by the space, or with the mainstream culture represented by the university, is a key antecedent of fit and authenticity. Identifying ways in which interventions might increase identification with the environment where members of certain social groups are typically dissociated might be an effective strategy for facilitating a sense of fit and state authenticity. Interventions designed to increase women’s identification with math, for example, have found that training women to approach math increases women’s math identification and efficacy (Kawakami, Steele, Cifa, Phillips, & Dovidio, 2008). Other work has accomplished the same outcome by simply exposing women to same-sex experts (Stout, Dasgupta, Hunsinger, & McManus, 2011). These strategies, all tested in the context of women in STEM, might be scaled and applied to other settings and contexts where members of social groups face negative stereotypes impeding their identification with the domain. Future work should test whether these interventions successfully translate into a greater sense of authenticity, and also whether they generalize across other contexts.

4.2.2 Increasing Fit to the Environment

Another promising strategy for interventions seeking to afford a sense of authenticity to the individuals within the environment is identifying how environments might be structured to systematically foster self-concept, goal, and social fit.

4.2.2.1 Targeting self-concept fit

As shown across Studies 3 and 4, a key predictor of state authenticity is a sense of *self-concept* fit to the environment. To the extent that objects and features within the environment cue a self-concept that is congruent with one’s default self-concept (or, at the very least, not incongruent), a sense of self-concept fit will be afforded. Past work has shown that simply changing objects
within a classroom impacts how strongly individuals feel a sense of fit to the academic domain represented by the environment (Cheryan, Plaut, Davies, & Steele, 2009). Thus, environments should take care to ensure they are physically structured in such a way so as to afford a sense of self-concept fit (e.g., avoid using objects or decorations that activate incongruent self-concepts among members of stigmatized groups).

### 4.2.2.2 Targeting goal fit

Although the results presented across Studies 3 and 4 suggest that self-concept fit and social fit are primary predictors of state authenticity, past work suggests that targeting goal fit has important implications for authenticity and approach motivation. For instance, when careers are reframed as affording goals most valued by a given group, individuals from that social group are more likely to express interest in those careers (Clark, Fuesting, & Diekman, 2016; Diekman, Clark, Johnston, Brown, & Steinberg, 2011; Thoman, Brown, Mason, Harmsen, & Smith, 2015). Environments can take steps to ensure they are designed in a way that affords goal fit by tailoring the structure of their activities and events to match the goal orientation of different individuals.

### 4.2.2.3 Targeting social fit

Finally, in Studies 3 and 4, we find that social fit is a key predictor of state authenticity. Environments can be designed to systematically afford a sense of social fit to individuals within them. For instance, normalizing doubts of belonging improves minority students’ academic motivation and achievement over time (Walton & Cohen, 2007). Other research highlights ways in which environments can directly implement structures and practices designed to facilitate positive social connections (e.g., the jigsaw classroom, Aronson, 1978; see also Lewis, Stout,
Pollock, Finkelstein, & Ito, 2016). By creating environmental structures designed to facilitate a sense of inclusion, institutions can foster a sense of social fit.

As discussed above, several of these suggested points of intervention have been successfully targeted within other contexts, yet no work has systematically tested the ways in which these factors might be addressed within a single framework to facilitate a gestalt sense of state authenticity. Testing these points of intervention in tandem will be an important endeavor for interventions seeking to facilitate a sense of fit and authenticity. Moreover, identifying which type of fit is most diagnostic of authenticity in each environment will be critical for developing interventions that are tailored to fit the context.

4.3 Limitations and Future Directions

One key consideration of the present work is that it is correlational in nature. The present data preclude us from concluding that fit systematically causes state authenticity, or that state authenticity systematically causes approach motivation. Despite our inability to speak to these specific orderings in the causal chain, the theoretical rationale behind the SAFE model speaks against these alternative possibilities. An extant body of experimental research reviewed in the introductory chapter of the present work suggests that the psychological processes corresponding to self-concept, goal, and social fit temporally give rise to a gestalt sense of authenticity, and subsequently to approach motivation. Nevertheless, it will be important to complement these correlational studies with research that experimentally manipulates fit and state authenticity to observe its effect on other components in the model. Even if it is the case that the causal direction primarily flows from fit to approach motivation through authenticity, there may be recursive processes at work-- feeling a greater degree of authenticity within an environment might increase both approach motivation and reinforce one’s sense of fit to the environment.
Studies in this line of work are currently being developed with the goal of zeroing in on these possibilities.

Another limitation of the present work is our reliance on self-report measures, which have been critiqued as being prone to concerns of social desirability and careless responding (Curran, 2014; Furnham & Henderson, 1982; van de Mortel, 2008). When possible, we utilized single-item state emotional measures that are less prone to response set bias (e.g., domain identification, state authenticity). Yet other key outcomes, such as approach motivation, were captured solely using self-report measures. One important direction for this line of work will be to complement self-report data with more objective measures of key outcomes. For example, in addition to measuring approach intentions, automatic approach activation or behavioral approach indicators could be assessed. We are in the process of developing and validating a paradigm in this line of work seeks to utilize response latencies to measure how quickly individuals automatic approach and avoidance reflexes are activated. In another line of work underway as a follow-up to Studies 3 and 4, we are collecting objective indicators of student approach behavior, such as course attendance, seeking academic help from university advisors, and amount of time spent utilizing university resources. By circumventing the drawbacks of self-report data, such objective measures will allow us to gain a more complete test of our key hypotheses.

Finally, it is worth noting that these studies examine core tenets of the SAFE model within but two of many possible contexts. Although the conclusions drawn from these studies offer important insights and contributions to research on gender and cultural identity, this line of work would be well-served to expand to other current issues and contexts in which situation selection is a key outcome. For example, in Chapter 1 we consider how a lack of authenticity on the basis of gender as a social identity accounts for different approach of careers and
occupations. Other work could examine how a lack of authenticity on the basis of other social identities that are prone to devaluation and stigma, such as race, sexual orientation, ability, and the intersection of these dimensions might predict different approach of environments. In Chapter 2, we consider how a lack of authenticity on the basis of cultural fit predicts different motivation on the university campus. Other work might extend this to North American organizational cultures and companies where a lack of cultural fit could have implications for outcomes such as employee motivation and performance.

Another important component of the SAFE model which has not been extensively discussed in the present work is the role of fluency. As per the SAFE model, each type of fit uniquely cues a sense of fluency that promotes a gestalt feeling of authenticity. Although not discussed in the present paper, another key goal of this line of work is to assess and further understand the role of cognitive, motivational, and interpersonal fluency in the relationship between self-concept, goal, and social fit and authenticity, respectively. Exploratory data collected but not reported in Study 4 suggests that fluency, as measured with brief state emotional pictorial measures similar to those we used to measure state authenticity, mediates the relationship between fit and authenticity. In another validation study (not reported here) in which we sought to develop and refine measures of fluency, we find added support for this relationship. Future studies in this line of work will consider the unique role fluency plays in this process by complementing these self-report measures with objective measures of fluency, such as cognitive performance (cognitive fluency), persistence (motivational fluency), and speech hesitations during coded video tasks (interpersonal fluency).

Finally, although the present work has focused on experiences of state authenticity from an intrapersonal perspective, a complementary yet interesting direction for this line of work is to
understand how state authenticity might be signaled interpersonally (i.e., from target to perceiver). Just as a large body of literature in the realm of emotion seeks to understand how emotions are nonverbally expressed (e.g., Ekman, 1993), future work might consider how state authenticity is signaled in the context of interpersonal interactions. Although the nature of state authenticity as a signal might differ according to the particular sentiment or emotion being conveyed, the overall ability to detect authenticity in social interactions has myriad consequences for intergroup relations. Several questions that might be tested within this framework include: Are targets who are perceived as authentic trusted more? Do intergroup interactions in which both partners are perceived as authentic yield greater cooperation and trust? Are leaders who are perceived as more authentic conferred greater status? Frameworks such as the social accuracy model of interpersonal perception (SAM; Biesanz, 2010) will be informative for testing these questions by teasing perceptive accuracy (i.e., how accurately perceivers are able to pick up on targets’ authenticity) apart from expressive accuracy (i.e., how accurately targets are able to express their authenticity to perceivers). The existing literature on state authenticity, as well as the findings reviewed within the present work, highlight ways in which state authenticity acts as a signal to the self. The questions posed above will be important for also highlighting ways in which state authenticity might simultaneously act as a signal to others.

4.4 Conclusion

Authenticity has been lauded as a central component of the human experience across historical periods (Steinvorth, 2016), global societies (Slabu, Lenton, Sedikides, & Bruder, 2014), and the lifespan (Thomaes, Sedikides, Bos, Hutteman, & Reijntjes, 2017). The present work has highlighted how authenticity, conceptualized as a state, acts as a signal of fit to the environment on the basis of social identity. Although the study of state authenticity is in its early stages, an
extant body of literature provides implicit evidence for several core assumptions around the psychological processes accompanying state authenticity. These core tenets are summarized and integrated within the framework of the SAFE model (Schmader & Sedikides, 2017) and first empirically tested in the present work. Across four studies, I show that state authenticity acts as a signal of fit on the basis of identity, motivating approach in contexts where one’s identity is a fit to the environment, and inhibiting approach in contexts where there is a lack of fit. These findings are the first to provide an empirical account of state authenticity conceptualized as fit between identity and environment, and have deeper implications for self-segregation along dimensions of social identity. By understanding and targeting ways in which individuals feel a presence or absence of fit to the environment, we may truly understand what it means to feel “true.”
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Appendices

Appendix A

This section contains supplementary materials for Chapter 2.

A.1 Study 1

*Items for Measures*

This section contains supplemental details about the measures assessed in Study 1.

**Things-People Preference** (1 = Strongly disagree / 7 = Strongly agree)

1. I am interested in nonpersonal tasks involving machines, materials, tools, biological mechanisms, and so forth.
2. I am interested in interpersonal tasks such as caring for, persuading, entertaining, or directing others.

**Domain Identification (Verbal)**

Instructions: Imagine two circles with various degrees of overlap between them. Circle 1 represents *you* (i.e., your sense of self), while circle 2 represents [psychology / engineering]. Keeping this image in mind, which pair of circles most accurately represents the distance between *you* and [psychology / engineering]?

1. Circle 1 and circle 2 are… (1 = Extremely overlapping / 7 = Extremely separated)

**Domain Identification (Visual)**

Instructions: The image above portrays various degrees of distance between you (i.e., your sense of self) and [psychology / engineering]. Looking at the image above, please choose a pair of circles to represent the distance between *you* and [psychology / engineering].
State Authenticity

A sense of authenticity is defined as “the sense or feeling that you are in alignment with your true, genuine self.” In other words, sense of authenticity is the feeling that you are able to be your real self.

A sense of inauthenticity is defined as “the sense or feeling that you are in alignment with an untrue, false self.” In other words, sense of inauthenticity is the feeling that you are not able to be your real self.

Instructions: Place yourself back in the experience of visiting the building you just visited. Remaining present in this experience, please respond to the item below.

Right now, imagining myself in this building…

1 = I feel inauthentic / 7 = I feel authentic
1 = I feel like I cannot be my true self / 7 = I feel like I can be my true self
1 = I feel like I don’t “fit” / 7 = I feel like I “fit”

Approach Intentions (1 = Completely disagree / 7 = Completely agree)

In the future…

1. I would enjoy being in this space.
2. I would like to spend a great deal of time in this space.
3. I would avoid returning to this space. (R)
4. I would want to avoid looking around or exploring this space. (R)
5. I would be curious about what goes on here.

In the future, how likely would you be to avoid or willing to go to this building?

I would…

0 = definitely avoid this building / 50 = be equally likely to avoid or go to this building / 100 = definitely go to this building

**Frequency of Visit**

How frequently do you visit the [CME (Engineering) / Kenny (Psychology)] building during the academic year?

- Never
- Once a year
- 2-6 times per year
- Once a month
- Twice a month
- Once a week
- 2-5 days a week
- Every day

**Choice-Obligation of Visit to Building**

When you visit the [CME (Engineering) / Kenny (Psychology)] building, is it by choice or by obligation?

0 = Completely by choice / 50 = Both by choice and obligation / 100 = Completely by obligation

**Descriptive Statistics**

This section contains descriptive statistics for all measures in Study 1.

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<th>Things / Engineering</th>
<th>Difference d</th>
</tr>
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<td>4.15 (1.83)</td>
<td>.73***</td>
</tr>
<tr>
<td></td>
<td>Mean 1</td>
<td>Mean 2</td>
<td>p-value</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------</td>
<td>--------</td>
<td>---------</td>
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<td>3.31 (1.75)</td>
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<td>60.33 (30.68)</td>
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*p < .05. **p < .01. ***p < .001.
Table. Correlations between measures in Study 1.

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<td>-0.394**</td>
<td>0.390**</td>
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<td>0.340**</td>
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<td>-0.479***</td>
<td>0.362*</td>
<td>-0.330*</td>
<td>0.288*</td>
<td>-0.445***</td>
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</table>
Virtual Tour Materials

This section contains the photos and descriptions used for the virtual tour in Study 1.

Engineering

RA: This is the Engineering Building, home of civil and mechanical engineering. Engineers share an immense curiosity about how things work and an intense desire to make them work better. A degree in engineering opens doors to a remarkable number of opportunities—in scientific and technical fields, where creativity and problem-solving meet quantitative analysis to design better things in the world around us. Known worldwide and across Canada for its excellence, UBC’s engineering program provides students with extraordinary learning opportunities. Students in engineering are trained to be top in their field and are therefore expected to maintain a rigorous course load during their studies. If you are the kind of person who likes to figure out how things work and design them to work better, engineering might be the field for you.

Psychology

RA: This is the Kenny building, home of psychology. Psychologists share an immense curiosity about how people think and behave and an intense desire to make people’s lives better. A degree in psychology opens doors to a remarkable number of career opportunities—in social, educational, organizational fields, where creativity and problem-solving meet care and compassion to improve individual and societal well-being. Known worldwide and across Canada for its excellence, UBC’s psychology program provides students with extraordinary learning opportunities. Students in psychology are trained to be top in their field and are therefore expected to maintain a rigorous course load during their studies. If you are the kind of person who likes to understand why people do the things they do and help them lead better lives, psychology might be the field for you.
A.2 Study 2

Sample

This section contains supplementary details about the sample of participants in Study 2.

Participant ethnicity.

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<tr>
<td>Black</td>
<td>17</td>
</tr>
<tr>
<td>Other / Multiracial</td>
<td>15</td>
</tr>
<tr>
<td>Chinese</td>
<td>5</td>
</tr>
<tr>
<td>Japanese</td>
<td>4</td>
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<tr>
<td>South Asian</td>
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<td>Latin American</td>
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<td>Southeast Asian</td>
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</table>

Works or studies in engineering or psychology.

<table>
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<tr>
<th>Field</th>
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<th>No</th>
<th>Have at Some Point</th>
<th>Not Sure</th>
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</thead>
<tbody>
<tr>
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<td>N = 159</td>
<td>N = 14</td>
<td>N = 0</td>
</tr>
<tr>
<td>Psychology</td>
<td>N = 12</td>
<td>N = 152</td>
<td>N = 30</td>
<td>N = 1</td>
</tr>
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Note. Analyses reported in the main text control for “Yes” (coded as “1”) versus all other response options (coded as “0”).

Income.

Participants self-reported their individual income for the last financial year on a scale of 1 (less than $20,000) to 7 ($150,000 or more). On average, participants reported $M = 2.90$ ($2 = \$20,000$ to $\$34,999$; $3 = \$35,000$ - $\$49,999$; $SD = 1.62$).
Educational attainment.

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school diploma or equivalent</td>
<td>13</td>
</tr>
<tr>
<td>Some college</td>
<td>40</td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>26</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>73</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>33</td>
</tr>
<tr>
<td>PhD</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
</tr>
</tbody>
</table>

Items for Measures

This section contains supplemental details about the measures assessed in Study 2.

**Things-People Preference** (1 = Strongly disagree / 7 = Strongly agree)

1. I am interested in nonpersonal tasks involving machines, materials, tools, biological mechanisms, and so forth.
2. I am interested in interpersonal tasks such as caring for, persuading, entertaining, or directing others.

**Empathizing-Systemizing** (1 = Strongly disagree / 7 = Strongly agree)

**Empathizing Quotient**

1. I can easily tell if someone else wants to enter a conversation.
2. I really enjoy caring for other people.
3. I find it hard to know what to do in a social situation. (R)
4. I often find it difficult to judge if something is rude or polite. (R)
5. In a conversation, I tend to focus on my own thoughts rather than on what my listener might be thinking. (R)
6. I can pick up quickly is someone says one thing but means another.
7. It is hard for me to see why some things upset people so much. (R)
8. I find it easy to put myself in somebody else's shoes.
9. I am good at predicting how someone will feel.
10. I am quick to spot when someone in a group is feeling awkward or uncomfortable.
11. I can't always see why someone should have felt offended by a remark. (R)
12. I don't tend to find social situations confusing.
13. Other people tell me I am good at understanding how they are feeling at what they are thinking.
14. I can easily tell if someone else is interested or bored with what I am saying.
15. Friends usually talk to me about their problems as they say that I am very understanding.
16. I can sense if I am intruding, even if the other person doesn't tell me.
17. Other people often say that I am insensitive, though I don't always see why. (R)
18. I can tune into how someone else feels rapidly and intuitively.
19. I can easily work out what another person might want to talk about.
20. I can tell if someone is masking their true emotion.
21. I am good at predicting what someone will do.
22. I tend to get emotionally involved with a friend's problems.

Systemizing Quotient

1. If I were buying a car, I would want to obtain specific information about its engine capacity.
2. If there was a problem with the electrical wiring in my home, I'd be able to fix it myself.
3. I rarely read articles or web pages about new technology. (R)
4. I do not enjoy games that involve a high degree of strategy. (R)
5. I am fascinated by how machines work.
6. In math, I am intrigued by the rules and patterns governing numbers.
7. I find it difficult to understand instruction manuals for putting appliances together. (R)
8. If I were buying a computer, I would want to know exact details about its hard disk drive capacity and processor speed.
9. I find it difficult to read and understand maps. (R)
10. When I look at a piece of furniture, I do not notice the details of how it was constructed. (R)
11. I find it difficult to learn my way around a new city. (R)
12. I do not tend to watch science documentaries on television or read articles about science and nature. (R)
13. If I were buying a stereo, I would want to know about its precise technical features.
14. I find it easy to grasp exactly how odds work in betting.
15. I am not very meticulous when I carry out D.I.Y. (R)
16. When I look at a building, I am curious about the precise way it was constructed.
17. I find it difficult to understand information the bank sends me on different investment and saving systems. (R)
18. When traveling by train, I often wonder exactly how the rail networks are coordinated.
19. If I were buying a camera, I would not look carefully into the quality of the lens. (R)
20. When I hear about the weather forecast, I am not very interested in the meteorological patterns. (R)
21. When I look at a mountain, I think about how precisely it was formed.
22. I can easily visualize how the motorways in my region link up.
23. When I'm in a plane, I do not think about the aerodynamics. (R)
24. I am interested in knowing the path a river takes from its source to the sea.
25. I am not interested in understanding how wireless communication works. (R)
State Authenticity (Verbal)
A sense of authenticity is defined as “the sense or feeling that you are in alignment with your true, genuine self.” In other words, sense of authenticity is the feeling that you are able to be your real self.

A sense of inauthenticity is defined as “the sense or feeling that you are in alignment with an untrue, false self.” In other words, sense of inauthenticity is the feeling that you are not able to be your real self.

Instructions: Place yourself back in the experience of visiting the building you just visited. Remaining present in this experience, please respond to the item below.

Right now, imagining myself in this building…

1 = I feel inauthentic / 7 = I feel authentic
1 = I feel like I cannot be my true self / 7 = I feel like I can be my true self
1 = I feel like I don’t “fit” / 7 = I feel like I “fit”

State Authenticity (Pictorial / RSOS)
Instructions: The image below portrays various degrees of distance between your real self and the person you are right now. Looking at the picture above, please choose a pair of circles to represent the distance between your real self and your current self.

Which pair of circles best represents how close you feel at this moment to your real self? (Choose one label below)

![Pair Options]

Approach-Avoidance (1 = Completely disagree / 7 = Completely agree)
Instructions: Mentally place yourself back in the building you just visited. Remaining present in this experience, please respond to the following items using the scale below.

In the future…

1. I would like to spend more time in this space.
2. I would avoid returning to this space. (R)
3. I would have no intentions of looking around or exploring this space. (R)
4. I would be curious about what goes on here.
How likely would you be to avoid or willing to go to this building?

I would…

0 = definitely avoid this building / 50 = be equally likely to avoid or go to this building / 100 =
definitely go to this building

Works or Studies in the Domain
Do you work or study in a field related to [engineering / psychology]?

- Yes
- No
- I have at some point, but not currently
- Not sure

Comprehension Check

Note that our preregistration originally specified that participants who failed 2 out of 3 of these questions would be excluded from analyses. Due to substantial data loss with this exclusion criteria, we did not exclude participants for failing this check.

Which type of career opportunity was NOT mentioned in the psychology building description?

- Social
- Organizational
- Consulting (correct response)
- Educational

According to the engineering building description, what three skills does a career in engineering entail?

- Creativity, problem-solving, and quantitative analysis (correct response)
- Planning, organization, and building
- Strategizing, communication, and quantitative analysis
- Creativity, communication, and organization

According to both the engineering and psychology building descriptions, what is expected of students in psychology and engineering?

- Taking on extra responsibilities
- Maintenance of a rigorous course load (correct response)
- Having a successful career
- Networking with other professionals
Attention Check

Note that, as preregistered, participants were excluded for failing this attention check.

Research in decision making shows that people, when making decisions and answering questions, prefer not to pay attention and minimize their effort as much as possible. Some studies show that over 50% of people don’t carefully read questions. If you are reading this question and have read all the other questions, please select the box marked ‘other’ and type ‘Decision Making’ in the box below. Do not select “predictions of your own behavior.” Thank you for participating and taking the time to read through the questions carefully!

What was this study about?

- Predictions of your own behavior
- Predictions of your friend’s behavior
- Political preferences
- Other: __________

Outliers

This section contains information about outliers (participants above or below three standard deviations on each given variable) in Study 2. All models including these variables were tested excluding these participants.

<table>
<thead>
<tr>
<th></th>
<th>N Outliers</th>
<th>Resulting Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>0</td>
<td>196</td>
</tr>
<tr>
<td>Things</td>
<td>0</td>
<td>196</td>
</tr>
<tr>
<td>Empathizing</td>
<td>2</td>
<td>194</td>
</tr>
<tr>
<td>Systemizing</td>
<td>0</td>
<td>196</td>
</tr>
<tr>
<td>Domain Identification (Psychology)</td>
<td>0</td>
<td>196</td>
</tr>
<tr>
<td>Domain Identification (Engineering)</td>
<td>0</td>
<td>196</td>
</tr>
<tr>
<td>State Authenticity (Psychology)</td>
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<td>196</td>
</tr>
<tr>
<td>State Authenticity (Engineering)</td>
<td>0</td>
<td>196</td>
</tr>
<tr>
<td>Approach Intentions (Psychology)</td>
<td>0</td>
<td>196</td>
</tr>
<tr>
<td>Approach Intentions (Engineering)</td>
<td>0</td>
<td>196</td>
</tr>
</tbody>
</table>
Descriptive Statistics

This section contains descriptive statistics for all measures in Study 2.

<table>
<thead>
<tr>
<th>Measure</th>
<th>People / Empathizing / Psychology M (SD)</th>
<th>Things / Systemizing / Engineering M (SD)</th>
<th>Difference d</th>
<th>Difference Score M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>People-Things Preference</td>
<td>4.95 (1.53)</td>
<td>4.79 (1.58)</td>
<td>n.s.</td>
<td>-0.16 (2.20)</td>
</tr>
<tr>
<td>Empathizing-Systemizing Orientation</td>
<td>4.88 (0.93)</td>
<td>4.56 (0.86)</td>
<td>.36***</td>
<td>-0.32 (1.23)</td>
</tr>
<tr>
<td>Domain Identification</td>
<td>4.09 (1.28)</td>
<td>3.55 (1.57)</td>
<td>.38***</td>
<td>-0.74 (1.88)</td>
</tr>
<tr>
<td>State Authenticity (Verbal)</td>
<td>4.58 (1.69)</td>
<td>4.46 (1.89)</td>
<td>n.s.</td>
<td>-0.11 (2.42)</td>
</tr>
<tr>
<td>State Authenticity (Visual)</td>
<td>4.76 (1.75)</td>
<td>4.49 (1.76)</td>
<td>n.s.</td>
<td>-0.25 (1.73)</td>
</tr>
<tr>
<td>Approach Intentions (4-item)</td>
<td>4.64 (1.57)</td>
<td>4.96 (1.58)</td>
<td>-.20*</td>
<td>0.32 (2.15)</td>
</tr>
<tr>
<td>Approach Intentions (Single-item)</td>
<td>64.13 (27.37)</td>
<td>67.35 (27.17)</td>
<td>n.s.</td>
<td>3.21 (36.31)</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001
Table. Correlations between unstandardized key measures in Study 2.

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
<th>(10)</th>
<th>(11)</th>
<th>(12)</th>
<th>(13)</th>
<th>(14)</th>
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</thead>
<tbody>
<tr>
<td>(1) People</td>
<td>-0.000</td>
<td>0.505***</td>
<td>0.043</td>
<td>0.240***</td>
<td>0.012</td>
<td>0.238***</td>
<td>-0.011</td>
<td>0.164*</td>
<td>0.051</td>
<td>0.229**</td>
<td>0.076</td>
<td>0.196**</td>
<td>0.060</td>
<td></td>
</tr>
<tr>
<td>(2) Things</td>
<td>-0.000</td>
<td>-0.029</td>
<td>0.499***</td>
<td>-0.065</td>
<td>0.305***</td>
<td>-0.035</td>
<td>0.400***</td>
<td>0.033</td>
<td>0.232**</td>
<td>0.013</td>
<td>0.374***</td>
<td>0.016</td>
<td>0.385***</td>
<td></td>
</tr>
<tr>
<td>(3) Empathizing</td>
<td>0.505***</td>
<td>-0.029</td>
<td>0.050</td>
<td>0.271***</td>
<td>-0.058</td>
<td>0.365***</td>
<td>0.000</td>
<td>0.296***</td>
<td>0.079</td>
<td>0.384***</td>
<td>0.136</td>
<td>0.355***</td>
<td>0.094</td>
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<tr>
<td>(4) Systemizing</td>
<td>0.043</td>
<td>0.499***</td>
<td>0.050</td>
<td>0.147*</td>
<td>0.364***</td>
<td>0.054</td>
<td>0.490***</td>
<td>0.161*</td>
<td>0.335***</td>
<td>0.147</td>
<td>0.540***</td>
<td>0.136</td>
<td>0.532***</td>
<td></td>
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<tr>
<td>(5) Domain ID Psych</td>
<td>0.240***</td>
<td>-0.065</td>
<td>0.271***</td>
<td>0.147*</td>
<td>0.132</td>
<td>0.288***</td>
<td>-0.002</td>
<td>0.169*</td>
<td>0.005</td>
<td>0.340***</td>
<td>0.104</td>
<td>0.245***</td>
<td>0.062</td>
<td></td>
</tr>
<tr>
<td>(6) Domain ID Eng</td>
<td>0.012</td>
<td>0.305***</td>
<td>-0.058</td>
<td>0.364***</td>
<td>0.132</td>
<td>-0.156</td>
<td>0.428***</td>
<td>-0.061</td>
<td>0.206**</td>
<td>-0.126</td>
<td>0.407***</td>
<td>-0.104</td>
<td>0.424***</td>
<td></td>
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<tr>
<td>(7) Authenticity Psych, Verbal</td>
<td>0.238***</td>
<td>-0.035</td>
<td>0.365***</td>
<td>0.054</td>
<td>0.288***</td>
<td>-0.156</td>
<td>0.082</td>
<td>0.551***</td>
<td>0.161*</td>
<td>0.725***</td>
<td>-0.013</td>
<td>0.728***</td>
<td>0.010</td>
<td></td>
</tr>
<tr>
<td>(8) Authenticity Eng, Verbal</td>
<td>-0.011</td>
<td>0.400***</td>
<td>0.000</td>
<td>0.490***</td>
<td>-0.002</td>
<td>0.428***</td>
<td>0.082</td>
<td>0.132</td>
<td>0.525***</td>
<td>-0.046</td>
<td>0.735***</td>
<td>0.011</td>
<td>0.749***</td>
<td></td>
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<tr>
<td>(9) Authenticity Psych, Visual</td>
<td>0.164*</td>
<td>0.033</td>
<td>0.296***</td>
<td>0.161*</td>
<td>0.169*</td>
<td>-0.061</td>
<td>0.551***</td>
<td>0.132</td>
<td>0.517***</td>
<td>0.441***</td>
<td>0.158</td>
<td>0.467***</td>
<td>0.176</td>
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<tr>
<td>(10) Authenticity Eng, Visual</td>
<td>0.051</td>
<td>0.232**</td>
<td>0.079</td>
<td>0.335***</td>
<td>0.005</td>
<td>0.206*</td>
<td>0.161*</td>
<td>0.525***</td>
<td>0.517***</td>
<td>0.090</td>
<td>0.431***</td>
<td>0.109</td>
<td>0.530***</td>
<td></td>
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<tr>
<td>(11) Approach Psych, 4-item</td>
<td>0.229*</td>
<td>0.013</td>
<td>0.384***</td>
<td>0.147*</td>
<td>0.340***</td>
<td>-0.126</td>
<td>0.725***</td>
<td>-0.046</td>
<td>0.441***</td>
<td>0.090</td>
<td>0.466</td>
<td>0.848***</td>
<td>0.026</td>
<td></td>
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<tr>
<td>(12) Approach Eng, 4-item</td>
<td>0.076</td>
<td>0.374***</td>
<td>0.136</td>
<td>0.540***</td>
<td>0.104</td>
<td>0.407***</td>
<td>-0.013</td>
<td>0.735***</td>
<td>0.158</td>
<td>0.431***</td>
<td>0.066</td>
<td>0.848***</td>
<td>0.050</td>
<td></td>
</tr>
<tr>
<td>(13) Approach Psych, Single-Item</td>
<td>0.196*</td>
<td>0.016</td>
<td>0.355***</td>
<td>0.136</td>
<td>0.245***</td>
<td>-0.104</td>
<td>0.728***</td>
<td>0.011</td>
<td>0.467***</td>
<td>0.109</td>
<td>0.848***</td>
<td>0.050</td>
<td>0.113</td>
<td></td>
</tr>
<tr>
<td>(14) Approach Eng, Single-Item</td>
<td>0.060</td>
<td>0.385***</td>
<td>0.094</td>
<td>0.532***</td>
<td>0.062</td>
<td>0.424***</td>
<td>0.010</td>
<td>0.749***</td>
<td>0.176</td>
<td>0.530***</td>
<td>0.026</td>
<td>0.884***</td>
<td>0.113</td>
<td></td>
</tr>
</tbody>
</table>

Computed correlation used Pearson-method with pairwise-deletion.
Table. Gender differences on all key variables measured in Study 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Women M (SD)</th>
<th>Men M (SD)</th>
<th>Difference d</th>
</tr>
</thead>
<tbody>
<tr>
<td>People Preference</td>
<td>5.11 (1.51)</td>
<td>4.75 (1.53)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Things Preference</td>
<td>4.61 (1.59)</td>
<td>5.02 (1.55)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Empathizing Orientation</td>
<td>5.04 (0.91)</td>
<td>4.69 (0.92)</td>
<td>.38*</td>
</tr>
<tr>
<td>Systemizing Orientation</td>
<td>4.35 (0.86)</td>
<td>4.83 (0.80)</td>
<td>-.58***</td>
</tr>
<tr>
<td>Identification with Psychology</td>
<td>4.09 (1.32)</td>
<td>4.08 (1.23)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Identification with Engineering</td>
<td>3.00 (1.54)</td>
<td>3.79 (1.50)</td>
<td>-.52***</td>
</tr>
<tr>
<td>Authenticity in Psychology, Verbal Measure</td>
<td>4.77 (1.78)</td>
<td>4.33 (1.53)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Authenticity in Engineering, Verbal Measure</td>
<td>4.21 (1.87)</td>
<td>4.78 (1.87)</td>
<td>-.30*</td>
</tr>
<tr>
<td>Authenticity in Psychology, Visual Measure</td>
<td>4.79 (1.79)</td>
<td>4.72 (1.71)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Authenticity in Engineering, Visual Measure</td>
<td>4.27 (1.72)</td>
<td>4.76 (1.78)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Approach in Psychology (4-Item)</td>
<td>4.88 (1.57)</td>
<td>4.33 (1.53)</td>
<td>.35*</td>
</tr>
<tr>
<td>Approach in Engineering (4-Item)</td>
<td>4.81 (1.66)</td>
<td>5.14 (1.45)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Approach in Psychology (Single-Item)</td>
<td>67.38 (28.15)</td>
<td>60.07 (25.94)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Approach in Engineering (Single-Item)</td>
<td>63.48 (28.62)</td>
<td>72.20 (24.54)</td>
<td>-.33*</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .00
Virtual Tour Materials

This section contains the photos and descriptions used for the virtual tour in Study 2.

Page 1
In the next part of the study, you will “virtually visit” two different academic spaces. That is, you will view an image and read a description about two different buildings on a university campus. Please click the next button to begin.

Page 2
You will now virtually visit the [first / second] academic space. Please study the space and read the description carefully, as there will be a memory test about this information at the end of the survey.

Page 3
Please take the next couple minutes to visually explore this space and read the corresponding description below.

Engineering

This is a workbench where structural engineering students train to design and build structural models.

This is the Robotics Lab, where mechanical engineering students work in teams to conduct research and design robots that complete tasks.
This is the **engineering building**, home of civil and mechanical engineering. Engineers share an immense curiosity about how things work and an intense desire to make them work better. A degree in engineering opens doors to a remarkable number of career opportunities in scientific and technical fields, where creativity and problem-solving meet quantitative analysis to design better things in the world around us. Known worldwide for their excellence, engineering programs provide students with extraordinary learning opportunities. Students in engineering are trained to be top in their field and are therefore expected to maintain a rigorous course load during their studies. If you are the kind of person who likes to figure out how things work and design them to work better, engineering might be the field for you.

**Psychology**

*This is the psychology clinic, where psychology students train to provide counseling and mental health services.*

*This is the Infant Studies Centre, where psychology students work in teams to conduct research with young infants to better understand their psychological processes.*
This is the **psychology building**, home of clinical and developmental psychology. Psychologists share an immense curiosity about how people think and behave and an intense desire to make people’s lives better. A degree in psychology opens doors to a remarkable number of career opportunities—in social, educational, and organizational fields, where creativity and problem-solving meet care and compassion to improve individual and societal well-being. Known worldwide for their excellence, psychology programs provide students with extraordinary learning opportunities. Students in psychology are trained to be top in their field and are therefore expected to maintain a rigorous course load during their studies. If you are the kind of person who likes to understand why people do the things they do and help them lead better lives, psychology might be the field for you.
Appendix B

This section contains supplementary materials for Chapter 3.

B.1 Study 3

Sample

This section contains supplementary details about the sample of participants in Study 3.

Participant ethnicity.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arab</td>
<td>7</td>
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<tr>
<td>Black</td>
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</tr>
<tr>
<td>Chinese</td>
<td>85</td>
</tr>
<tr>
<td>Filipino</td>
<td>4</td>
</tr>
<tr>
<td>Japanese</td>
<td>1</td>
</tr>
<tr>
<td>Korean</td>
<td>5</td>
</tr>
<tr>
<td>Latin American</td>
<td>3</td>
</tr>
<tr>
<td>Multiracial</td>
<td>12</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
<tr>
<td>South Asian</td>
<td>22</td>
</tr>
<tr>
<td>Southeast Asian</td>
<td>9</td>
</tr>
<tr>
<td>White</td>
<td>18</td>
</tr>
</tbody>
</table>

Income.

Participants self-reported their individual income for the last financial year on a scale of 1 (less than $20,000) to 7 ($150,000 or more). On average, participants reported $M = 1.09$ ($1 = \text{less than} \$20,000; SD = 0.42$).
Participants self-reported their family’s income for the last financial year on a scale of 1 (less than $20,000) to 7 ($150,000 or more). On average, participants reported $M = 4.38$ ($4 = $50,000 - $74,999; SD = 1.84$).

*Own educational attainment (prior to coming to UBC).*

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school diploma or equivalent</td>
<td>150</td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>16</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>3</td>
</tr>
</tbody>
</table>

*International student status*

<table>
<thead>
<tr>
<th>Student Status</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>International</td>
<td>41</td>
</tr>
<tr>
<td>Domestic</td>
<td>128</td>
</tr>
</tbody>
</table>

*Country of birth.*

<table>
<thead>
<tr>
<th>Country</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>1</td>
</tr>
<tr>
<td>Australia</td>
<td>1</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>2</td>
</tr>
<tr>
<td>Bolivia</td>
<td>1</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>1</td>
</tr>
<tr>
<td>Burma</td>
<td>1</td>
</tr>
<tr>
<td>Cambodia</td>
<td>1</td>
</tr>
<tr>
<td>Canada</td>
<td>82</td>
</tr>
<tr>
<td>China</td>
<td>35</td>
</tr>
<tr>
<td>Germany</td>
<td>1</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>6</td>
</tr>
<tr>
<td>Country</td>
<td>N</td>
</tr>
<tr>
<td>------------------</td>
<td>---</td>
</tr>
<tr>
<td>India</td>
<td>2</td>
</tr>
<tr>
<td>Iran</td>
<td>4</td>
</tr>
<tr>
<td>Japan</td>
<td>1</td>
</tr>
<tr>
<td>Korea, South</td>
<td>4</td>
</tr>
<tr>
<td>Macau</td>
<td>3</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3</td>
</tr>
<tr>
<td>Mexico</td>
<td>3</td>
</tr>
<tr>
<td>Philippines</td>
<td>5</td>
</tr>
<tr>
<td>Singapore</td>
<td>1</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1</td>
</tr>
<tr>
<td>Taiwan</td>
<td>2</td>
</tr>
<tr>
<td>Tunisia</td>
<td>1</td>
</tr>
<tr>
<td>Turkey</td>
<td>1</td>
</tr>
<tr>
<td>Ukraine</td>
<td>1</td>
</tr>
<tr>
<td>United States</td>
<td>3</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>1</td>
</tr>
</tbody>
</table>

**Years in Canada**

For foreign-born participants only (i.e., those not born in Canada), they were asked to self-report the amount of years they had been in Canada on a scale of 1 (Less than 1 year) to 6 (5 years or more). On average, foreign-born participants reported having been in Canada for \( M = 4.26 \) (4 = 3-4 years; \( SD = 1.95 \)).
English as first language.

All participants were asked whether English was their first language. \( N = 85 \) participants indicated that English was their first language; \( N = 84 \) participants indicated that English was not their first language.

First language (if not English)

<table>
<thead>
<tr>
<th>Language</th>
<th>( N )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bengali (Bangla)</td>
<td>2</td>
</tr>
<tr>
<td>Cantonese / Yue</td>
<td>24</td>
</tr>
<tr>
<td>German</td>
<td>1</td>
</tr>
<tr>
<td>Hindi</td>
<td>1</td>
</tr>
<tr>
<td>Japanese</td>
<td>2</td>
</tr>
<tr>
<td>Korean</td>
<td>4</td>
</tr>
<tr>
<td>Mandarin</td>
<td>30</td>
</tr>
<tr>
<td>Persian</td>
<td>4</td>
</tr>
<tr>
<td>Polish</td>
<td>1</td>
</tr>
<tr>
<td>Punjabi</td>
<td>2</td>
</tr>
<tr>
<td>Russian</td>
<td>1</td>
</tr>
<tr>
<td>Spanish</td>
<td>5</td>
</tr>
<tr>
<td>Turkish</td>
<td>1</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>1</td>
</tr>
</tbody>
</table>

English proficiency.

For participants who indicated English was not their first language, they were asked to self-report their proficiency in English on a scale of 1 (“Poor”) to 4 (“Very good”). On average, participants reported “Good” (3) to “Very good” (4) English proficiency (\( M = 3.40, SD = 0.68 \)).
Items for Focal Measures

This section contains supplemental details about the measures assessed in Study 3. We first provide exact items of focal study variables and then list the other variables that were measured but are not analyzed in this paper.

Vancouver Index of Acculturation (1 = Strongly disagree / 9 = Strongly agree)

Instructions: Many of these questions will refer to your heritage culture, meaning the original culture of your family (other than Canadian). It may be the culture of your birth, the culture in which you have been raised, or any culture in your family background. If there are several, pick the one that has influenced you most (e.g., Irish, Chinese, Mexican, African). If you do not feel that you have been influenced by any other culture, please name a culture that has influenced previous generations of your family.

- Your heritage culture (other than Canadian) is: ____________________

1. I often participate in my heritage cultural traditions.
2. I often participate in mainstream North American cultural traditions.
3. I enjoy social activities with people from the same heritage culture as myself.
4. I enjoy social activities with typical North American people.
5. I am comfortable working with people of the same heritage culture as myself.
6. I am comfortable working with typical North American people.
7. I often behave in ways that are typical of my heritage culture.
8. I often behave in ways that are ‘typically North American.’
9. I believe in the values of my heritage culture.
10. I believe in mainstream North American values.
11. I am interested in having friends from my heritage culture.
Self-Concept Fit (1 = Strongly disagree / 7 = Strongly agree)

1. Simply being on campus at UBC feels like a poor fit to how I see myself. (R)
2. The person I am at UBC is different than the person I am any place else. (R)
3. Being at UBC brings out my true self.
4. Even when I’m alone and doing nothing, simply being at UBC makes me feel like myself.

Goal Fit (1 = Strongly disagree / 7 = Strongly agree)

1. The values at UBC are not a good fit to my own personal values. (R)
2. I often feel that UBC is a place that allows me to realize my goals.
3. At UBC, my behavior is never motivated by my own intrinsic goals and values. (R)
4. The goals of UBC are fully compatible with mine.

Social Fit (1 = Strongly disagree / 7 = Strongly agree)

1. I often feel that I do not fit in well when I’m on campus with other UBC students. (R)
2. Other people on campus see me the same way that I see myself.
3. I often find myself adjusting my behavior to fit in with others’ expectations of me at UBC. (R)
4. When I’m with other students at UBC, I generally feel I can be myself.

State Authenticity

Please look at the pairs of circles below. In each pair, the circle on the left represents who you feel yourself to be RIGHT NOW and the circle on the right represents your REAL SELF at UBC. Your real self is who you truly are (which may not necessarily be the same as who you would like to be).

Which pair of circles best represents how close you feel at this moment to your real self at UBC?

(Choose one label below)
**Approach-Avoidance (Yes / No)**

*Items 1-7 measure approach; items 8-12 measure avoidance.*

Since coming to UBC, I’ve noticed that…

1. when I get something I want, I feel excited and energized.
2. when I’m doing well at something, I love to keep at it.
3. when good things happen to me, it affects me strongly.
4. when I see an opportunity to get something I like, I get excited right away.
5. when I want something, I usually go all-out to get it.
6. I go out of my way to get things I want.
7. if I see a chance to get something I want, I move on it right away.
8. if I think something unpleasant is going to happen, I usually get pretty "worked up."
9. I worry about making mistakes.
10. criticism or scolding hurts me quite a bit.
11. I feel worried when I think I have done poorly at something.
12. I am less stressed compared to my friends.

**Approach-Avoidance Compared to Original BIS/BAS Scale**

Below is a comparison of the approach-avoidance motivation scale used in Studies 3 and 4 alongside the original items developed by Carver and White (1994). We state the rationale for our changes.

<table>
<thead>
<tr>
<th>Original Items (Carver &amp; White, 1994)</th>
<th>Adapted Items Studies 3 and 4</th>
<th>If Excluded or Changed, Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Even if something bad is about to happen to me, I rarely experience fear or nervousness.</td>
<td></td>
<td>This item was excluded because it did not provide a face valid indicator.</td>
</tr>
<tr>
<td>Criticism or scolding hurts me quite a bit.</td>
<td>Criticism or scolding hurts me quite a bit.</td>
<td>No change</td>
</tr>
<tr>
<td>I feel pretty worried or upset when I think or know somebody is angry at me.</td>
<td></td>
<td>This item was excluded because it did not provide a face valid indicator.</td>
</tr>
<tr>
<td>If I think something unpleasant is going to happen I usually get pretty &quot;worked up.&quot;</td>
<td>If I think something unpleasant is going to happen I usually get pretty &quot;worked up.&quot;</td>
<td>No change</td>
</tr>
<tr>
<td>I feel worried when I think I have done poorly at something important.</td>
<td>I feel worried when I think I have done poorly at something.</td>
<td>Removed the word ‘important’ to make more general.</td>
</tr>
<tr>
<td>BAS Drive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>I go out of my way to get things I want.</td>
<td>I go out of my way to get things I want.</td>
<td>No change</td>
</tr>
<tr>
<td>When I want something I usually go all-out to get it.</td>
<td>When I want something I usually go all-out to get it.</td>
<td>No change</td>
</tr>
<tr>
<td>If I see a chance to get something I want I move on it right away.</td>
<td>If I see a chance to get something I want I move on it right away.</td>
<td>No change</td>
</tr>
<tr>
<td>When I go after something I use a &quot;no holds barred&quot; approach.</td>
<td>This item was not included because we did not think foreign-born students would understand the phrase “no holds barred.”</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BAS Fun Seeking</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I'm always willing to try something new if I think it will be fun.</td>
<td>All fun seeking items were excluded because we did not want to measure this dimension of BAS.</td>
<td></td>
</tr>
<tr>
<td>I will often do things for no other reason than that they might be fun.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often act on the spur of the moment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I crave excitement and new sensations.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BAS Reward Responsiveness</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>When I'm doing well at something I love to keep at it.</td>
<td>When I'm doing well at something I love to keep at it.</td>
<td>No change</td>
</tr>
<tr>
<td>When I get something I want, I feel excited and energized.</td>
<td>When I get something I want, I feel excited and energized.</td>
<td>No change</td>
</tr>
<tr>
<td>When I see an opportunity for something I like I get excited right away.</td>
<td>When I see an opportunity for something I like I get excited right away.</td>
<td>No change</td>
</tr>
<tr>
<td>When good things happen to me, it affects me strongly.</td>
<td>When good things happen to me, it affects me strongly.</td>
<td>No change</td>
</tr>
<tr>
<td>It would excite me to win a contest.</td>
<td>This item was excluded because it did not provide a face valid indicator.</td>
<td></td>
</tr>
</tbody>
</table>
Full List of Measures

Below is a full list of measures in the order in which they appeared to participants (order of fit subscales was randomized). Measures with an asterisk are analyzed and reported in this paper.

- Gender*
- Age*
- Sexual Orientation
- Individual Income*
- Family Income*
- Own Educational Attainment*
- Mother’s Educational Attainment
- Father’s Educational Attainment
- Ethnicity*
- Country Born*
- Amount of Time Lived in Canada*
- International Student Status*
- First Language*
- English Proficiency*
- Cultural Motives for Attending College
- Identity Collective Self-Esteem
- Public Collective Self-Esteem
- Self-Concept Fit*
- Goal Fit*
- Social Fit*
- State Authenticity *
- Social Connectedness
- BIS/BAS*
- Independent/Interdependent Self-Construal
- Vancouver Index of Acculturation (VIA)*
- Anglicized Name
- Social Group Composition
- Nostalgia
- Time Perspective
- BIAT (Self-True)
Outliers

This section contains information about outliers (participants above or below three standard deviations on each given variable) in Study 3. All models including these variables were tested excluding these participants.

<table>
<thead>
<tr>
<th></th>
<th>N Outliers</th>
<th>Resulting Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification with Mainstream Culture</td>
<td>2</td>
<td>167</td>
</tr>
<tr>
<td>Identification with Heritage Culture</td>
<td>1</td>
<td>168</td>
</tr>
<tr>
<td>Self-Concept Fit</td>
<td>0</td>
<td>169</td>
</tr>
<tr>
<td>Goal Fit</td>
<td>3</td>
<td>166</td>
</tr>
<tr>
<td>Social Fit</td>
<td>0</td>
<td>169</td>
</tr>
<tr>
<td>State Authenticity</td>
<td>0</td>
<td>169</td>
</tr>
<tr>
<td>Approach</td>
<td>0</td>
<td>169</td>
</tr>
<tr>
<td>Avoidance</td>
<td>2</td>
<td>167</td>
</tr>
</tbody>
</table>

Descriptive Statistics.

<table>
<thead>
<tr>
<th></th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification with Mainstream North American Culture</td>
<td>6.41 (1.34)</td>
</tr>
<tr>
<td>Identification with Heritage Culture</td>
<td>6.35 (1.32)</td>
</tr>
<tr>
<td>Self-Concept Fit</td>
<td>4.28 (1.14)</td>
</tr>
<tr>
<td>Goal Fit</td>
<td>4.74 (1.06)</td>
</tr>
<tr>
<td>Social Fit</td>
<td>4.11 (1.17)</td>
</tr>
<tr>
<td>State Authenticity</td>
<td>4.62 (1.54)</td>
</tr>
<tr>
<td>Approach Motivation (BAS)</td>
<td>1.78 (0.26)</td>
</tr>
<tr>
<td>Avoidance Motivation (BIS)</td>
<td>1.80 (0.23)</td>
</tr>
</tbody>
</table>

Table. Correlations between measures in Study 3.
<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(1) Identification with Mainstream Culture</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(2) Identification with Heritage Culture</em></td>
<td>0.133</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(3) Self-Concept Fit</em></td>
<td></td>
<td>0.109</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(4) Goal Fit</em></td>
<td>0.237**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(5) Social Fit</em></td>
<td>0.360***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(6) State Authenticity</em></td>
<td>0.284***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(7) Approach</em></td>
<td>0.277***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(8) Avoidance</em></td>
<td>-0.084</td>
<td>0.011</td>
<td>-0.204***</td>
<td>-0.130</td>
<td>-0.378***</td>
<td>-0.289***</td>
<td></td>
<td>0.061</td>
</tr>
</tbody>
</table>

*Computed correlation used pearson-method with pairwise-deletion.*
Results Among International Students Only.

This section contains the results of analyses conducted among international students only (\(N = 41\)) in Study 3.

**Relationship Between Identification with Mainstream Culture and State Authenticity**

We ran a parallel model predicting whether international students who were more highly identified with mainstream North American culture would report greater state authenticity on campus. As with the full sample, international students who were more highly identified with mainstream North American culture reported greater state authenticity on campus, \(\beta = .42, t(37) = 2.81, p = .008\).

**Mediation by Self-Concept, Goal, and Social Fit**

Next, we ran a parallel mode predicting whether, among international students only, the effect of identification with mainstream North American culture on state authenticity would be uniquely mediated by self-concept, goal, and social fit. The model was tested using a bootstrap estimation approach with 5000 samples. Results revealed a nonsignificant indirect effect of identification with mainstream North American culture on authenticity through the three types of fit, \(\beta = .05, SE = .14, 95\% CI = [-.21, .37]\). Within the full model, self-concept fit, \(\beta = .04, SE = .05, 95\% CI = [-.02, .20]\), goal fit, \(\beta = -.04, SE = .06, 95\% CI = [-.18, .05]\), and social fit, \(\beta = -.06, SE = .09, 95\% CI = [-.14, .24]\), were not significant as individual mediators.

**Predicting Approach-Avoidance from Identification with Mainstream Culture and Fit**

Finally, we tested whether among international students only, greater identification with mainstream North American culture would predict more approach motivation and less avoidance motivation on campus, as mediated by fit and state authenticity. To test this, we ran two parallel serial mediation models (model 6 in PROCESS, version 2.16.3; Hayes, 2016) in which approach
(Figure 3.5) and avoidance (Figure 3.6) were predicted by identification with mainstream North American culture, as mediated by fit (composite measure of all three types of fit) and state authenticity. The model was tested using a bootstrap estimation approach with 5000 samples. As in the full sample, results showed a nonsignificant indirect effect of identification with mainstream North American culture on approach motivation, $\beta = -0.01$, SE = 0.05, 95% CI = [-0.18, 0.04], and avoidance motivation, $\beta = -0.02$, SE = 0.05, 95% CI = [-0.17, 0.06].

**Moderation by Student Status and Ethnicity.**

**Relationship Between Identification with Mainstream Culture and State Authenticity**

To test whether the relationship between identification with mainstream culture and state authenticity was moderated by either student status (international versus domestic) or ethnicity (White versus non-White), we ran a regression model predicting state authenticity from identification with mainstream North American culture, as moderated by student status, and also moderated by ethnicity (entered as two separate interaction terms). With the interaction terms included in the model, the main effect still emerged, $\beta = 0.45$, $t(161) = 2.55, p = 0.01$, and both interaction terms were non-significant (identification with mainstream North American culture by student status interaction, $\beta = -0.20$, $t(161) = -0.96, p = 0.34$; identification with mainstream North American culture by ethnicity interaction, $\beta = -0.19$, $t(161) = -0.75, p = 0.45$).

**Mediation by Self-Concept, Goal, and Social Fit**

To test whether the relationship between identification with mainstream culture and state authenticity as mediated by the three types of fit was moderated by either student status (international versus domestic) or ethnicity (White versus non-White), we ran two moderated mediation models (model 59 in PROCESS, version 2.16.3; Hayes, 2016), with identification...
with mainstream culture predicting state authenticity as mediated by the three types of fit, and all paths moderated by student status (international versus domestic) or ethnicity (White versus non-White). In the model testing student status as a moderator, all indices of moderated mediation were non-significant (self-concept fit, $\beta = .004$, SE = .07, 95% CI = [-.16, .12], goal fit, $\beta = .07$, SE = .07, 95% CI = [.04, .24], and social fit, $\beta = .14$, SE = .12, 95% CI = [-.08, .39]). In the model testing ethnicity. In the model testing ethnicity as a moderator, all indices of moderated mediation were also non-significant (self-concept fit, $\beta = .20$, SE = .20, 95% CI = [-.14, .74], goal fit, $\beta = -.10$, SE = .21, 95% CI = [-.64, .17], and social fit, $\beta = -.08$, SE = .14, 95% CI = [-.26, .29])
B.2 Study 4

Sample

This section contains supplementary details about the sample of participants in Study 4.

Income.

Participants self-reported their individual income for the last financial year on a scale of 1 (less than $20,000) to 7 ($150,000 or more). On average, participants reported $M = 1.07$ ($1 = \text{less than } \$20,000; SD = 0.36$).

Participants self-reported their family’s income for the last financial year on a scale of 1 (less than $20,000) to 7 ($150,000 or more). On average, participants reported $M = 4.63$ ($4 = \$50,000 - \$74,999; SD = 1.82$).

Year of study at UBC.

<table>
<thead>
<tr>
<th>Year of Study</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year, undergraduate</td>
<td>76</td>
</tr>
<tr>
<td>Second year, undergraduate</td>
<td>94</td>
</tr>
<tr>
<td>Third year, undergraduate</td>
<td>97</td>
</tr>
<tr>
<td>Fourth year, undergraduate</td>
<td>53</td>
</tr>
<tr>
<td>Fifth year, undergraduate</td>
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</tr>
<tr>
<td>Other</td>
<td>4</td>
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</table>
Country of birth.

<table>
<thead>
<tr>
<th>Country</th>
<th>N</th>
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</thead>
<tbody>
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<td>Austria</td>
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<tr>
<td>Burma</td>
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<tr>
<td>Canada</td>
<td>3</td>
</tr>
<tr>
<td>China</td>
<td>43</td>
</tr>
<tr>
<td>Croatia</td>
<td>1</td>
</tr>
<tr>
<td>France</td>
<td>1</td>
</tr>
<tr>
<td>Germany</td>
<td>1</td>
</tr>
<tr>
<td>Ghana</td>
<td>1</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>8</td>
</tr>
<tr>
<td>India</td>
<td>13</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4</td>
</tr>
<tr>
<td>Iran</td>
<td>9</td>
</tr>
<tr>
<td>Iraq</td>
<td>1</td>
</tr>
<tr>
<td>Japan</td>
<td>4</td>
</tr>
<tr>
<td>Korea, South</td>
<td>10</td>
</tr>
<tr>
<td>Liechtenstein</td>
<td>1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1</td>
</tr>
<tr>
<td>Norway</td>
<td>1</td>
</tr>
<tr>
<td>Pakistan</td>
<td>3</td>
</tr>
<tr>
<td>Panama</td>
<td>1</td>
</tr>
<tr>
<td>Philippines</td>
<td>5</td>
</tr>
<tr>
<td>Romania</td>
<td>1</td>
</tr>
</tbody>
</table>
Russia  $N = 1$
Saint Lucia  $N = 1$
Singapore  $N = 3$
South Africa  $N = 2$
Sudan  $N = 1$
Sweden  $N = 1$
Taiwan  $N = 7$
Thailand  $N = 1$
Turkey  $N = 3$
Uganda  $N = 1$
United Arab Emirates  $N = 5$
United Kingdom  $N = 3$
United States  $N = 8$

*Note.* Unlike in Study 3, in Study 4, this question was asked to first-generation participants only.

**Years in Canada**

For foreign-born participants only (i.e., those not born in Canada), they were asked to self-report the amount of years they had been in Canada on a scale of 1 (Less than 1 year) to 5 (10 years or more). On average, foreign-born participants reported having been in Canada for $M = 3.24$ ($3 = 4$-$6$ years; $SD = 1.48$).

*Anglicized name.*

All participants were asked whether they used an Anglicized name at UBC (“I use a different name at UBC than the name I was given at birth because my birth name is too difficult for most people at UBC to understand or pronounce”). $N = 66$ participants indicated they used an
Anglicized name, \(N = 9\) participants indicated they were not sure if they used an Anglicized name, and \(N = 269\) participants indicated they did not use an Anglicized name.

*English as first language.*

All participants were asked whether English was their first language. \(N = 207\) participants indicated that English was their first language; \(N = 137\) participants indicated that English was not their first language.

*First language (if not English)*

<table>
<thead>
<tr>
<th>Language</th>
<th>(N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic</td>
<td>1</td>
</tr>
<tr>
<td>Cantonese / Yue</td>
<td>18</td>
</tr>
<tr>
<td>French</td>
<td>2</td>
</tr>
<tr>
<td>German</td>
<td>2</td>
</tr>
<tr>
<td>Hindi</td>
<td>3</td>
</tr>
<tr>
<td>Japanese</td>
<td>4</td>
</tr>
<tr>
<td>Korean</td>
<td>14</td>
</tr>
<tr>
<td>Mandarin</td>
<td>56</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
</tr>
<tr>
<td>Persian</td>
<td>10</td>
</tr>
<tr>
<td>Punjabi</td>
<td>5</td>
</tr>
<tr>
<td>Russian</td>
<td>1</td>
</tr>
<tr>
<td>Spanish</td>
<td>1</td>
</tr>
<tr>
<td>Turkish</td>
<td>1</td>
</tr>
<tr>
<td>Urdu</td>
<td>2</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>3</td>
</tr>
</tbody>
</table>
English proficiency.

For participants who indicated English was not their first language, they were asked to self-report their proficiency in English on a scale of 1 ("Poor") to 4 ("Very good"). On average, participants reported “Good” (3) to “Very good” (4) English proficiency ($M = 3.49$, $SD = 0.73$).

Items for Focal Measures

This section contains supplemental details about the measures assessed in Study 4. We first provide exact items of focal study variables and then list the other variables that were measured but are not analyzed in this paper.

Vancouver Index of Acculturation (1 = Strongly disagree / 9 = Strongly agree)

Instructions: Many of these questions will refer to your heritage culture, meaning the original culture of your family (other than Canadian). It may be the culture of your birth, the culture in which you have been raised, or any culture in your family background. If there are several, pick the one that has influenced you most (e.g., Irish, Chinese, Mexican, African). If you do not feel that you have been influenced by any other culture, please name a culture that has influenced previous generations of your family.

- Your heritage culture (other than Canadian) is: ____________________
- I do not know my heritage culture.

1. I often participate in my heritage cultural traditions.
2. I often participate in mainstream North American cultural traditions.
3. I enjoy social activities with people from the same heritage culture as myself.
4. I enjoy social activities with typical North American people.
5. I am comfortable working with people of the same heritage culture as myself.
6. I am comfortable working with typical North American people.
7. I often behave in ways that are typical of my heritage culture.
8. I often behave in ways that are ‘typically North American.’

**Independent-Interdependent Self-Construal** (1 = Strongly disagree / 7 = Strongly agree)

1. I often have the feeling that my relationship with others are more important than my own accomplishments. (INT)
2. I will sacrifice my self-interest for the benefits of the group I am in. (INT)
3. I enjoy being unique and different from others in many respects. (IND)
4. It is important for me to respect decisions made by the group. (INT)
5. I prefer to be direct and forthright when dealing with people I've just met. (IND)
6. My personal identity independent of others is very important to me. (IND)
7. I value being in good health above everything. (IND)
8. It is important for me to maintain harmony within my group. (INT)

**Self-Concept Fit** (1 = Strongly disagree / 7 = Strongly agree)

1. Being at UBC brings out my true self.
2. Even when I’m alone and doing nothing, simply being at UBC makes me feel like myself.
3. I feel alienated from myself at UBC, even when I’m alone. (R)

**Goal Fit** (1 = Strongly disagree / 7 = Strongly agree)

1. UBC’s values are not a good fit to my own personal values. (R)
2. I often feel that UBC is a place that allows me to realize my goals.
3. At UBC, my behavior is never motivated by my own intrinsic goals and values. (R)

**Social Fit** (1 = Strongly disagree / 7 = Strongly agree)

1. I often feel that I do not fit in well when I’m on campus with other UBC students. (R)
2. I often find myself adjusting my behavior to fit in with others’ expectations of me at UBC. (R)
3. When I’m with other students at UBC, I generally feel I can be myself.
State Authenticity

Please look at the pairs of circles below. In each pair, the circle on the left represents who you feel yourself to be RIGHT NOW and the circle on the right represents your REAL SELF at UBC. Your real self is who you truly are (which may not necessarily be the same as who you would like to be).

Which pair of circles best represents how close you feel at this moment to your real self at UBC?

(Choose one label below)

(Pair A) (Pair B) (Pair C) (Pair D) (Pair E) (Pair F) (Pair G)

Approach-Avoidance (Yes / No)

Items 1-7 measure approach; items 8-12 measure avoidance.

Since coming to UBC, I’ve noticed that…

1. when I get something I want, I feel excited and energized.
2. when I’m doing well at something, I love to keep at it.
3. when good things happen to me, it affects me strongly.
4. when I see an opportunity to get something I like, I get excited right away.
5. when I want something, I usually go all-out to get it.
6. I go out of my way to get things I want.
7. if I see a chance to get something I want, I move on it right away.
8. if I think something unpleasant is going to happen, I usually get pretty "worked up."
9. I worry about making mistakes.
10. criticism or scolding hurts me quite a bit.
11. I feel worried when I think I have done poorly at something.
12. I am less stressed compared to my friends.
Positive and Negative Emotionality (1 = Very rarely or never / 5 = Very often or always)

Instructions: Please think about what you have been doing and experiencing since coming to UBC. Then report how much you experienced each of the following feelings, using the scale below.

1. Positive
2. Negative
3. Good
4. Bad
5. Pleasant
6. Unpleasant
7. Happy
8. Sad
9. Afraid
10. Joyful
11. Angry
12. Contented

Full List of Measures

Below is a full list of measures in the order in which they appeared to participants (order of fit and fluency subscales was randomized). Measures with an asterisk are analyzed and reported in this paper.

- Gender*
- Age*
- Sexual Orientation
- Individual Income*
- Family Income*
- Year of Study at UBC
- Faculty at UBC
- Own Educational Attainment*
- Mother’s Educational Attainment
- Father’s Educational Attainment
- Ethnicity*
- Generation Status
- Country Mother Born
- Country Father Born
- Country Born*
- Amount of Time Lived in Canada*
- Age Moved to Canada
- Anglicized Name
• First Language*
• English Proficiency*
• Years Spoken English
• Vancouver Index of Acculturation (VIA)*
• Independent/Interdependent Self-Construal*
• Self-Concept Fit*
• Goal Fit*
• Social Fit*
• Cognitive Fluency
• Motivational Fluency
• Social Fluency
• State Authenticity*
• BIS/BAS*
• Identity Collective Self-Esteem
• Public Collective Self-Esteem
• Stigma Consciousness
• Expected Discrimination
• SPANE (Positive/Negative Affect)*
Outliers

This section contains information about outliers (participants above or below three standard deviations on each given variable) in Study 4. As preregistered, all models including these variables were tested excluding these participants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N Outliers</th>
<th>Resulting Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification with Mainstream Culture</td>
<td>1</td>
<td>343</td>
</tr>
<tr>
<td>Identification with Heritage Culture</td>
<td>6</td>
<td>338</td>
</tr>
<tr>
<td>Independent Self-Construal</td>
<td>0</td>
<td>344</td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>0</td>
<td>344</td>
</tr>
<tr>
<td>Self-Concept Fit</td>
<td>0</td>
<td>344</td>
</tr>
<tr>
<td>Goal Fit</td>
<td>0</td>
<td>344</td>
</tr>
<tr>
<td>Social Fit</td>
<td>0</td>
<td>344</td>
</tr>
<tr>
<td>State Authenticity</td>
<td>0</td>
<td>344</td>
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<tr>
<td>Approach</td>
<td>2</td>
<td>342</td>
</tr>
<tr>
<td>Avoidance</td>
<td>0</td>
<td>344</td>
</tr>
<tr>
<td>Positive Emotionality</td>
<td>2</td>
<td>342</td>
</tr>
<tr>
<td>Negative Emotionality</td>
<td>2</td>
<td>342</td>
</tr>
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</table>
Descriptive Statistics

This section contains descriptive statistics for all measures in Study 4.

<table>
<thead>
<tr>
<th>Measure</th>
<th>M (SD)</th>
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<tbody>
<tr>
<td>Identification with Mainstream Culture</td>
<td>6.79 (1.41)</td>
</tr>
<tr>
<td>Identification with Heritage Culture</td>
<td>6.25 (1.33)</td>
</tr>
<tr>
<td>Independent Self-Construal</td>
<td>5.01 (0.83)</td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>4.77 (0.88)</td>
</tr>
<tr>
<td>Self-Concept Fit</td>
<td>4.64 (1.16)</td>
</tr>
<tr>
<td>Goal Fit</td>
<td>5.06 (0.96)</td>
</tr>
<tr>
<td>Social Fit</td>
<td>4.69 (1.19)</td>
</tr>
<tr>
<td>State Authenticity</td>
<td>4.82 (1.40)</td>
</tr>
<tr>
<td>Approach</td>
<td>1.22 (0.22)</td>
</tr>
<tr>
<td>Avoidance</td>
<td>1.23 (0.26)</td>
</tr>
<tr>
<td>Positive Emotionality</td>
<td>3.61 (0.66)</td>
</tr>
<tr>
<td>Negative Emotionality</td>
<td>2.79 (0.73)</td>
</tr>
</tbody>
</table>
Table. Correlations between measures in Study 4.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>0.143***</td>
<td>0.242***</td>
<td>0.269***</td>
<td>0.220***</td>
<td>0.175***</td>
<td>0.231***</td>
<td>0.204***</td>
<td>0.052</td>
<td>-0.078</td>
<td>0.219***</td>
<td>-0.094</td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td>0.143***</td>
<td>0.184***</td>
<td>0.139*</td>
<td>0.102</td>
<td>0.054</td>
<td>0.035</td>
<td>0.079</td>
<td>0.078</td>
<td>0.049</td>
<td>0.098</td>
<td>-0.005</td>
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<tr>
<td>(3)</td>
<td>0.242***</td>
<td>0.184***</td>
<td>0.202***</td>
<td>0.234***</td>
<td>0.104</td>
<td>0.181***</td>
<td>0.189***</td>
<td>0.243***</td>
<td>-0.140***</td>
<td>0.233***</td>
<td>-0.055</td>
<td></td>
</tr>
<tr>
<td>(4)</td>
<td>0.269***</td>
<td>0.139*</td>
<td>0.202***</td>
<td>0.134*</td>
<td>0.037</td>
<td>0.121*</td>
<td>0.115</td>
<td>0.066</td>
<td>0.045</td>
<td>0.108*</td>
<td>0.048</td>
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<tr>
<td>(5)</td>
<td>0.220***</td>
<td>0.102</td>
<td>0.234***</td>
<td>0.134*</td>
<td>0.567***</td>
<td>0.652***</td>
<td>0.511***</td>
<td>0.267***</td>
<td>-0.180***</td>
<td>0.547***</td>
<td>-0.391***</td>
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</tr>
<tr>
<td>(6)</td>
<td>0.175***</td>
<td>0.054</td>
<td>0.104</td>
<td>0.037</td>
<td>0.567***</td>
<td>0.520***</td>
<td>0.348***</td>
<td>0.156</td>
<td>-0.050</td>
<td>0.364***</td>
<td>-0.299***</td>
<td></td>
</tr>
<tr>
<td>(7)</td>
<td>0.231***</td>
<td>0.035</td>
<td>0.181***</td>
<td>0.121*</td>
<td>0.652***</td>
<td>0.520***</td>
<td>0.536***</td>
<td>0.255***</td>
<td>-0.275***</td>
<td>0.472***</td>
<td>-0.392***</td>
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<tr>
<td>(8)</td>
<td>0.204***</td>
<td>0.079</td>
<td>0.189***</td>
<td>0.115</td>
<td>0.511***</td>
<td>0.348***</td>
<td>0.536***</td>
<td>0.300***</td>
<td>-0.241***</td>
<td>0.489***</td>
<td>-0.380***</td>
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</tr>
<tr>
<td>(9)</td>
<td>0.052</td>
<td>0.078</td>
<td>0.243***</td>
<td>0.066</td>
<td>0.267***</td>
<td>0.156*</td>
<td>0.255***</td>
<td>0.300***</td>
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<td>0.311***</td>
<td>-0.172*</td>
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</tr>
<tr>
<td>(10)</td>
<td>-0.078</td>
<td>0.049</td>
<td>-0.140***</td>
<td>0.045</td>
<td>-0.180***</td>
<td>-0.050</td>
<td>-0.275***</td>
<td>-0.241***</td>
<td>-0.040</td>
<td>-0.298***</td>
<td>0.387***</td>
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<td>(11)</td>
<td>0.219***</td>
<td>0.098</td>
<td>0.233***</td>
<td>0.108</td>
<td>0.547***</td>
<td>0.364***</td>
<td>0.472***</td>
<td>0.489***</td>
<td>0.311***</td>
<td>-0.298***</td>
<td>-0.465***</td>
<td></td>
</tr>
<tr>
<td>(12)</td>
<td>-0.094</td>
<td>-0.005</td>
<td>-0.055</td>
<td>0.048</td>
<td>-0.391***</td>
<td>-0.299***</td>
<td>-0.392***</td>
<td>-0.380***</td>
<td>-0.172</td>
<td>0.387***</td>
<td>-0.465***</td>
<td></td>
</tr>
</tbody>
</table>

Computed correlation used pearson-method with pairwise-deletion.
Results Among Foreign-Born Students Only.

This section contains the results of analyses conducted among foreign-born students only ($N = 155$) in Study 4.

**Relationship Between Identification with Mainstream Culture and State Authenticity**

We ran a parallel model predicting whether foreign-born students who were more highly identified with mainstream North American culture would report greater state authenticity on campus. As with the full sample, foreign-born participants who were more highly identified with mainstream North American culture reported greater state authenticity on campus, $\beta = .21$, $t(150) = 2.67$, $p = .008$.

**Mediation by Self-Concept, Goal, and Social Fit**

Next, we ran a parallel model predicting whether, among foreign-born students only, the effect of identification with mainstream North American culture on state authenticity would be uniquely mediated by self-concept, goal, and social fit. The model was tested using a bootstrap estimation approach with 5000 samples. Results revealed that overall, these measures explained a significant amount of variance in the relationship between identification with mainstream North American culture and state authenticity, $\beta = .17$, $SE = .05$, 95% CI = [.09, .28]. Within the full model, self-concept fit, $\beta = .06$, $SE = .03$, 95% CI = [.01, .15]; and social fit, $\beta = .12$, $SE = .04$, 95% CI = [.05, .23]; were significant as individual mediators. As in the full sample, goal fit was not a unique significant mediator ($\beta = -.009$, $SE = .03$, 95% CI = [-.07, .04]).

**Predicting Approach-Avoidance from Identification with Mainstream Culture and Fit**

Finally, we tested whether among foreign-born students only, greater identification with mainstream North American culture would predict more approach motivation and less avoidance
motivation on campus, as mediated by fit and state authenticity. To test this, we ran two parallel serial mediation models (model 6 in PROCESS, version 2.16.3; Hayes, 2016) in which approach and avoidance were predicted by identification with mainstream North American culture, as mediated by fit (composite measure of all three types of fit) and state authenticity. The model was tested using a bootstrap estimation approach with 5000 samples. Among foreign-born students only, results revealed a significant indirect effect of identification on approach as mediated by fit and state authenticity, $\beta = .04$, $SE = .02$, 95% CI = [.01, .08], and a significant indirect effect of identification on avoidance as mediated by fit and state authenticity, $\beta = -.03$, $SE = .02$, 95% CI = [-.08, -.004].

Moderation by Student Status and Ethnicity.

This section contains the results of analyses testing for moderation by student status (foreign-born versus domestic) and ethnicity (White versus non-White).

Relationship Between Identification with Mainstream Culture and State Authenticity

To test whether the relationship between identification with mainstream culture and state authenticity was moderated by either student status (foreign-born versus domestic) or ethnicity (White versus non-White), we ran a regression model predicting state authenticity from identification with mainstream North American culture, as moderated by student status, and also moderated by ethnicity (entered as two separate interaction terms). With the interaction terms included in the model, the main effect still emerged, $\beta = .21$, $t(334) = 2.73$, $p = .007$, and both interaction terms were non-significant (identification with mainstream North American culture
by student status interaction, $\beta = .06$, $t(334) = 0.54$, $p = .59$; identification with mainstream North American culture by ethnicity interaction, $\beta = -.18$, $t(334) = -1.12$, $p = .27$).

**Mediation by Self-Concept, Goal, and Social Fit**

To test whether the relationship between identification with mainstream culture and state authenticity as mediated by the three types of fit was moderated by either student status (foreign-born versus domestic) or ethnicity (White versus non-White), we ran two moderated mediation models (model 59 in PROCESS, version 2.16.3; Hayes, 2016), with identification with mainstream culture predicting state authenticity as mediated by the three types of fit, and all paths moderated by student status (foreign-born versus domestic) or ethnicity (White versus non-White). In the model testing student status as a moderator, all indices of moderated mediation were non-significant (self-concept fit, $\beta = .004$, SE = .07, 95% CI = [−.15, .13], goal fit, $\beta = .07$, SE = .07, 95% CI = [−.04, .24], and social fit, $\beta = .14$, SE = .11, 95% CI = [−.10, .36]). In the model testing ethnicity. In the model testing ethnicity as a moderator, all indices of moderated mediation were also non-significant (self-concept fit, $\beta = -.08$, SE = .05, 95% CI = [−.20, .004], goal fit, $\beta = -.01$, SE = .03, 95% CI = [−.10, .03], and social fit, $\beta = .0006$, SE = .09, 95% CI = [−.15, .22]).