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Unstable Identity Compatibility: How Gender Rejection Sensitivity Undermines the Success of Women in Science, Technology, Engineering, and Mathematics Fields

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Abstract

Although the perceived compatibility between one's gender and science, technology, engineering, and mathematics (STEM) identities (gender-STEM compatibility) has been linked to women's success in STEM fields, no work to date has examined how the stability of identity over time contributes to subjective and objective STEM success. In the present study, 146 undergraduate female STEM majors rated their gender-STEM compatibility weekly during their freshman spring semester. STEM women higher in gender rejection sensitivity, or *gender RS*, a social-cognitive measure assessing the tendency to perceive social-identity threat, experienced larger fluctuations in gender-STEM compatibility across their second semester of college. Fluctuations in compatibility predicted impaired outcomes the following school year, including lower STEM engagement and lower academic performance in STEM (but not non-STEM) classes, and significantly mediated the relationship between gender RS and STEM engagement and achievement in the 2nd year of college. The week-to-week changes in gender-STEM compatibility occurred in response to negative academic (but not social) experiences.

Keywords

sociocultural factors, academic achievement, sex-role attitudes, individual differences, mathematics achievement

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Individuals rarely see themselves through the lens of a single social identity—immigrant, Caucasian, atheist, or spouse—but, rather, recognize that they belong simultaneously to multiple, nested identities. When these identities are perceived to be compatible with one another, each one may provide a sense of connection or belonging to a social context (e.g., being a member of a sports team). By contrast, social identities that exist in conflict have been shown to be detrimental to satisfaction and success in conflicting domains (Netemeyer, Boles, & McMurrian, 1996) and seem to increase the risk for physical ailments and depression (Frone, Russell, & Cooper, 1997). For the introverted lawyer or the elderly triathlete, conflicting identities may raise self-doubts about one's belonging and potential for success in domains in which the identities are conflicting.

Given the fact that men outnumber women in most science, technology, engineering, and mathematics (STEM) fields (National Science Foundation, 2009) and prevailing negative stereotypes about women's abilities in those domains, female scientists in the United States may be at risk of perceiving conflict between their gender and their STEM identities (Good, Rattan, & Dweck, 2012; London, Rosenthal, Levy, & Lobel, 2011; Rosenthal,

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London, Levy, & Lobel, 2011; Settles, Jellison, & Pratt-Hyatt, 2009). This perceived conflict may put them at risk for an array of consequences, such as depression, physical ailments, and decreased satisfaction in the STEM domains (Frone et al., 1997; Netemeyer et al., 1996).

Past work has established that women who perceive less compatibility between their gender and their STEM identities (gender-STEM compatibility) have a lower sense of belonging, less confidence, and less motivation in STEM fields (London et al., 2011; Rosenthal et al., 2011; Settles, 2004; Settles et al., 2009). Perceived identity compatibility and its consequences may be especially important when individuals must adapt and respond to the challenges of a new environment, as in the transition to college or the advancement to a major's core courses (London, Downey, Bolger, & Velilla, 2005; Ruble & Seidman, 1996). Despite the emerging research on the consequences of identity compatibility for both social and academic outcomes (London et al., 2011; Settles, 2004), little is known about the stability of this factor—that is, whether or not it is a somewhat dynamic process that changes in response to the environment.

We reasoned that social-identity threat may destabilize gender-STEM compatibility, resulting in a fluctuating sense of gender-STEM compatibility that could potentially constitute one process by which STEM women come to feel alienated and disengaged. In the present study, we examined whether women who are higher in gender rejection sensitivity, or *gender RS*, who may be more likely to perceive subtle forms of threat, have less stable perceptions of gender-STEM compatibility over time. We believe that these fluctuations in gender-STEM compatibility may be detrimental to women's success; therefore, we examined longitudinally whether a fluctuating sense of compatibility would predict negative outcomes in both subjective domains (sense of belonging in STEM domains, concerns about evaluative threat, and gender-STEM compatibility) and objective domains (achievement) for STEM women later in time.

STEM Engagement and Academic Outcomes

It has been well documented that individuals who pursue nontraditional academic and career paths are exposed to various forms of social-identity threat, including being a member of the numeric minority (Inzlicht & Ben-Zeev, 2000), lacking members of one's in-group in positions of authority (e.g., professors or research advisors; Derks, Van Laar, & Ellemers, 2007), feeling excluded from informal social networks (Gersick, Dutton, & Bartunek, 2000), or having peers who hold negative attitudes toward one's group (Murray, Meinholdt, & Bergmann, 1999). Perceptions of bias seem to affect both sense of belonging and academic performance, two factors critical for long-term success in any field. Researchers have established that social-identity threat can result in a lower sense of belonging, less commitment to one's field of study (Litzler, Lange, & Brainard, 2005), and less interest in pursuing quantitative careers (Davies, Spencer, Quinn, & Gerhardstein, 2002). It is important to note that engagement variables such as these seem to be necessary for continued STEM success (Good et al., 2012). Moreover, stereotype-threat research has firmly established that negative stereotypes about women's math ability can interfere with women's classroom success and standardized-test performance, and reducing this threat can improve academic performance (for a review, see Aronson & McGlone, 2009).

STEM-Identity Compatibility

Stereotypes depicting women as people-oriented individuals with a need for affiliation are in stark contrast to stereotypes about STEM professionals. On the one hand, prescriptive and descriptive stereotypes about women suggest that they are (or should be) affiliative, appearance oriented, and driven by emotions (Eagly & Steffen, 1984). On the other hand, the social identity of STEM professionals may be marked by isolation, the irrelevance of physical appearance, and a strict adherence to reason and logic. Given the opposition between these coexisting identities, a growing body of evidence has suggested that the extent to which women perceive their gender and STEM identities as either compatible or incompatible is a critical predictor of women's STEM engagement and academic success (e.g., Good et al., 2012; London et al., 2011; Rosenthal et al., 2011; Settles, 2004; Settles et al., 2009).

For instance, women who perceive STEM careers as incompatible with female-typical communal goals express lower interest in STEM careers than do women who view them as compatible, even when controlling for STEM self-efficacy (Diekman, Brown, Johnston, & Clark, 2010). Furthermore, longitudinal work on female undergraduate STEM majors has shown that gender-STEM compatibility on one day predicts higher levels of motivation and sense of belonging in STEM domains on subsequent days (London et al., 2011). Women's perceived gender-STEM incompatibility (i.e., *identity interference*) has also been linked to lower levels of self-esteem and life satisfaction and higher levels of depression (Settles, 2004). Moreover, this incompatibility is related to poorer performance as a scientist, which suggests that identity incompatibility may ultimately affect women's academic outcomes (Settles, 2004). Taken together, this emerging research suggests that poor gender-STEM compatibility may have debilitating effects on STEM engagement and may go on to affect objective academic performance.

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Identity Threat Affects the Stability of Stereotyped Self-Perceptions

Although research has demonstrated that identity compatibility is important for women in STEM domains, we have extended this work by examining whether the stability of identity compatibility is also important for women's success in STEM fields. Indeed, identity researchers have long known that a stable self-concept is essential for positive adjustment (Campbell, 1990), and there is some evidence that stigmatized individuals may have less stable stereotype-relevant self-perceptions than do nonstigmatized individuals (Aronson & Inzlicht, 2004).

We pursued the possibility that women who are beginning their college STEM careers may be somewhat unsure of their fit in the STEM environment and may look to the environment for cues of belonging or alienation and of success or failure. To the extent that one perceives threat cues in the environment, one's stereotype-relevant identity (e.g., gender-STEM compatibility) may be negatively impacted by that threat. It stands to reason that frequent exposure to social-identity threat may destabilize one's gender-STEM compatibility, resulting in an unstable, fluctuating sense of compatibility over time.

We predicted that this instability would negatively affect women's STEM engagement and performance. We theorized that women who are more perceptive of threat cues (those high in gender RS), who presumably experience more frequent damage to their self-perceptions, may have larger fluctuations in gender-STEM compatibility over time.

A Gender RS Model

In the present study, we focused on individual differences in the perceptions of social-identity threat using the gender RS model (London, Downey, Romero-Canyas, Rattan, & Tyson, 2012). Given that much contemporary bias and marginalization occurs in subtle and ambiguous ways (Dovidio, Gaertner, Nier, Kawakami, & Hodson, 2004; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997), individuals vary in the extent to which they even perceive threats to identity, a necessary precursor to experiencing their negative effects. The gender RS model provides a social-cognitive account of the mechanism by which gender-threat cues in one's environment are perceived and experienced by some women but not others and, thus, accounts for within-group variability in gender-threat experiences and outcomes. Gender RS has been shown to be a stable, trait-like, individual difference that identifies women who, through experiences of gender discrimination, have become more attuned to recognizing cues of gender threat in stereotype-relevant domains (London et al., 2012).

Women high in gender RS are more likely to perceive the presence of subtle gender-threat cues in stereotype-relevant domains than are women low in gender RS (London et al., 2012). In past work that focused on these nontraditional academic domains, women high in gender RS reported more feelings of alienation than did women low in gender RS, and this alienation from the environment ultimately led to disengagement from STEM domains (London et al., 2012). Similarly, Aronson and Inzlicht (2004) found that African Americans who were high in race RS (termed *stereotype vulnerable* in Aronson & Inzlicht, 2004) had less stable stereotype-relevant self-perceptions, a result that confirmed the utility of RS models in detecting instability. Taken together, the gender RS model is well suited for identifying women who may be more perceptive of subtle cues of gender threat and, therefore, more vulnerable to the negative effects of threat in STEM-related academic contexts, including instability in their sense of gender-STEM compatibility.

The Present Study

We theorized that social-identity threats present in the STEM environment may destabilize stereotype-relevant self-perceptions over time. By examining this (lack of) stability longitudinally, we aimed to uncover the process by which STEM women come to feel alienated and disengaged. In the present study, we tested whether higher gender RS predicted higher within-person variation in gender-STEM compatibility during the spring semester of participants' freshman year. We expected that less stable gender-STEM compatibility would go on to undermine women's subjective belonging (i.e., lower their sense of belonging in STEM domains, increase their concerns about evaluative threat, and lower their perceived gender-STEM compatibility) and academic success (i.e., lower their grade point average, GPA, in STEM courses) the following year. Finally, because gender RS was hypothesized to elicit fluctuations in gender-STEM compatibility, we tested the indirect effect of gender RS on engagement and performance outcomes through these fluctuations in gender-STEM compatibility (i.e., we tested whether fluctuations in compatibility mediated the relationship between gender RS and outcomes the following year).

Method

Participants and time course

Prior to the first day of the fall semester, 146 female STEM majors (mean age = 18.08 years, $SD = 1.28$; 38% Caucasian, 39% Asian, 23% other race or ethnicity) completed a questionnaire assessing baseline levels of gender RS,

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gender-STEM compatibility, and subjective-belonging variables and self-reported high school GPA. During the participants' second semester, they completed weekly surveys for 14 weeks (mean number of surveys completed = 12.52, *SD* = 1.05) that included measures of gender-STEM compatibility for each week. Finally, at the beginning of their 2nd year of college, participants (n = 128) completed follow-up measures of gender-STEM compatibility and subjective-belonging variables. We also obtained, with participants' permission, their official academic records for the first semester of their 2nd year of college.

Baseline measures

Gender RS. Participants completed the Gender RS Questionnaire (London et al., 2012), which measures the tendency to anxiously expect and react to gender-based identity threats. Participants read six potentially gender-threatening scenarios (e.g., approaching a male professor about a grading error on one's math test) and rated for each their anxiety, using a scale from 1 (*unconcerned*) to 6 (*concerned*), and their expectations about the likelihood of gender-based rejection, using a scale from 1 (*very unlikely*) to 6 (*very likely*). Gender RS was calculated by computing the product of the anxiety and rejection-expectation scores for each scenario and averaging across all scenarios. Means, standard deviations, and reliabilities of all baseline variables are reported in Table 1.

Subjective-belonging variables. We used three measures to examine gender-STEM compatibility, sense of belonging in STEM domains, and evaluative threat in STEM domains.

Gender-STEM compatibility. Participants completed the Inclusion of Other in the Self measure (Aron, Aron, & Smollan, 1992; Tropp & Wright, 2001), a single item modified to reflect the compatibility between one's gender identity and one's identity as a STEM major (see London et al., 2011). Responses were made using a pictorial scale from 1 to 7, with higher scores indicating greater gender-STEM compatibility.

Sense of belonging in STEM domains. Participants completed an 8-item measure adapted from the Institutional Belonging Scale (Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002), modified to assess feelings of fit within one's STEM major and comfort with STEM professors and classmates (example item: "How do you feel about your major?"; London et al., 2011). Participants made responses using a scale from 1 (*I feel very uncomfortable*) to 10 (*I feel very comfortable*).

Evaluative threat in STEM. Participants completed a 7-item measure created to assess concerns about one's intellectual reputation's being evaluated by others (example item: "I worry about what other people may think of my STEM abilities"). Responses were made using a scale from 1 (*strongly disagree*) to 6 (*strongly agree*).

Control variables. In all analyses, we controlled for participants' prior academic ability (self-reported high school GPA: *M* = 93.42, *SD* = 5.08) and personal RS—that is, the broad tendency to be sensitive to general rejection from others. Participants read descriptions of four scenarios (e.g., "You ask a friend to do you a big favor") and rated how anxious they would expect to feel in each, using scales from 1 (*unconcerned*) to 6 (*concerned*), and how likely they thought rejection would be in each, using scales from 1 (*very unlikely*) to 6 (*very likely*; *M* = 7.42, *SD* = 3.86; Downey & Feldman, 1996). Personal RS was calculated by computing the product of the anxiety and rejection-expectation scores for each scenario and averaging across all scenarios.

Weekly-survey measures

Fluctuations in gender-STEM compatibility. Participants completed the same pictorial measure of perceived gender-STEM compatibility used at baseline for 14 weeks throughout the spring semester of their 1st year in

Table 1. Descriptive Statistics for and Partial Correlations Between Baseline Variables

Variable	*M*	1	2	3	4
1. Gender rejection sensitivity (α = .81)	7.18 (4.58)	—			
2. Gender-STEM compatibility	4.80 (1.65)	–.15	—		
3. Sense of belonging in STEM domains (α = .93)	8.27 (1.23)	–.13	.11	—	
4. Evaluative threat (α = .92)	3.08 (1.22)	.14	–.10	–.27**	—

Note: High school grade point average and personal rejection sensitivity were control variables. Standard deviations are shown in parentheses. STEM = science, technology, engineering, and mathematics.
**p < .01.

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college. Following past work on fluctuations in self-perceptions over time (Aronson & Inzlicht, 2004), we calculated the intraindividual standard deviation of identity compatibility as a measure of within-person stability. Higher scores represent a less stable (more fluctuating) sense of gender-STEM compatibility over the course of the semester.

Most significant event of the week. For the same 14 weeks that they completed the measure of gender-STEM compatibility, participants were also prompted to think about the most significant event of their week, to indicate whether it was positive or negative, and to classify it broadly as an academic experience (e.g., "I'm disappointed with the grade that I received on my biology test"; "[I] spoke to my professor about a possible error on my exam score and he was very sarcastic and not very helpful") or as a social experience (e.g., "My dad just flew out for Afghanistan"; "Someone close to me talked about committing suicide"). Although participants were STEM majors taking more STEM than non-STEM courses, they were not asked to indicate whether the academic experience occurred in a STEM or a non-STEM course.

Second-year follow-up

Subjective belonging. At the beginning of the fall semester of their 2nd year in college, participants completed a follow-up survey that included all of the subjective-belonging measures used in the baseline assessment: gender-STEM compatibility, sense of belonging in STEM domains, and evaluative threat.

Academic performance. Official transcripts were obtained from the university for 105 participants and were used to calculate each participant's STEM and non-STEM GPAs for the fall semester of the 2nd year of college.

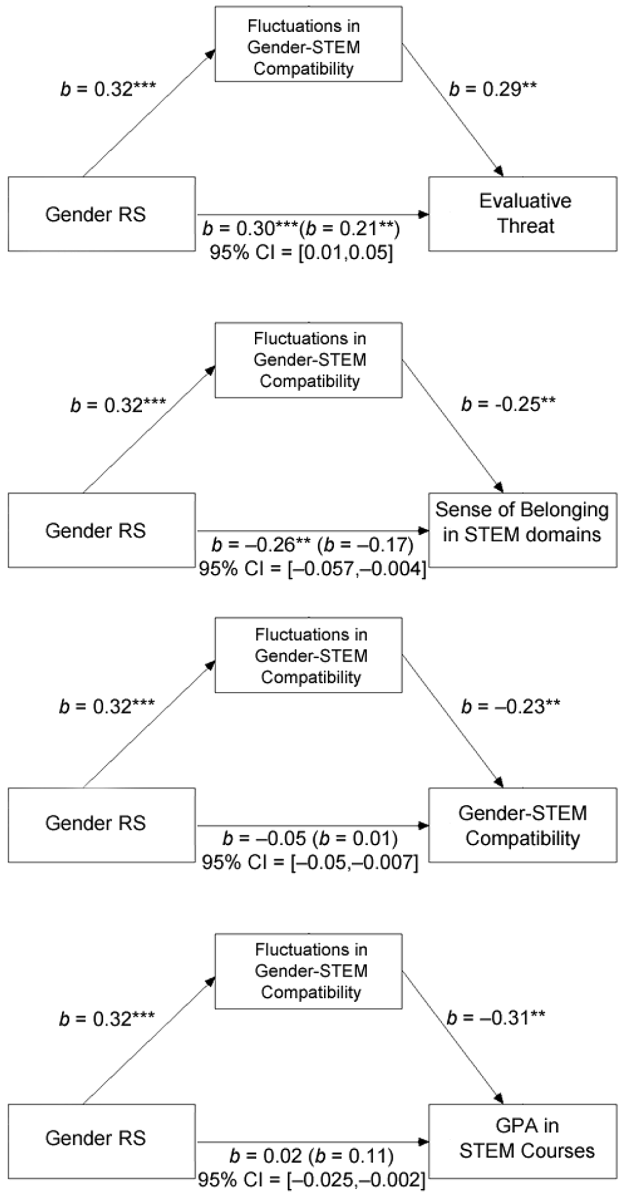

Fig. 1. Mediation models showing the relationship between gender rejection sensitivity, or Gender RS, and 2nd-year outcomes, as mediated by fluctuations in gender-STEM compatibility. Along the lower paths, coefficients inside parentheses show results when the mediator was included in the model, and coefficients outside parentheses show results when the mediator was not included in the model. STEM = science, technology, engineering, and mathematics; CI = confidence interval; GPA = grade point average. Asterisks indicate significant paths (**$p < .01$; ***$p < .001$.)

Results

In all of the analyses reported in the following sections, we controlled for baseline levels of concern about general rejection (personal RS) and prior academic success (high school GPA). Whenever possible, we also controlled for baseline levels of the dependent variable to isolate change over time from preexisting differences.

Does gender RS predict unstable gender-STEM compatibility?

We predicted that gender RS would be related to less stable gender-STEM compatibility over time (see Fig. 1 for partial correlations of baseline variables). Multiple regression analyses (controlling for baseline level of gender-STEM compatibility) confirmed this prediction and revealed that gender RS significantly predicted less stable gender-STEM compatibility over the course of participants' second semester, $\beta = 0.28$, $p = .003$. Gender RS was not related to overall differences in level of gender-STEM compatibility, $\beta = -0.08$, $p = .37$.

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Table 2. Results of Regression Analyses Predicting 2nd-Year Follow-Up Outcomes

	Follow-up outcome									
	Gender-STEM compatibility		Sense of belonging in STEM domains		Evaluative threat		Fall STEM GPA		Fall non-STEM GPA	
Step and predictor	ΔR^2	*b*	ΔR^2	*b*	ΔR^2	*b*	ΔR^2	*b*	ΔR^2	*b*
Step 1[a]	.23***		.22***		.36***		.16**		.14*	
Outcome variable		0.43***		0.30**		0.52***		—		—
High school GPA		–0.00		0.23**		–0.05		0.39***		0.32**
Personal RS		–0.10		–0.04		0.06		0.09		0.11
Gender RS		–0.06		–0.19*		0.16*		–0.01		–0.11
Gender-STEM compatibility		—		–0.04		0.04		–0.07		0.11
Step 2	.04*		.04*		.09***		.05*		.00	
Outcome variable		—		0.29**		0.56**		—		—
High school GPA		–0.03		0.20*		–0.02*		0.36**		0.33**
Personal RS		–0.07		–0.01		0.00		0.13		0.10
Gender RS		0.00		–0.13		0.06		0.03		–0.12
Gender-STEM compatibility		0.42***		–0.05		0.07		–0.07		0.11
Fluctuations in gender-STEM compatibility		–0.21*		–0.20*		0.33***		–0.24**		0.06

Note: STEM = science, technology, engineering, and mathematics; GPA = grade point average; RS = rejection sensitivity.
[a]All control variables were measured at baseline.
*$p < .05$. **$p < .01$. ***$p < .001$.

Do fluctuations in gender-STEM compatibility predict poorer outcomes at follow-up?

We predicted that gender RS and the unstable gender-STEM compatibility it elicits would undermine women's subjective belonging and academic performance at 2nd-year follow-up but that neither predictor would be related to non-STEM GPA. We ran stepwise multiple regressions in which gender RS and the control variables were entered in the first step and fluctuation in gender-STEM compatibility was entered in the second step, predicting gender-STEM compatibility, sense of belonging in STEM domains, evaluative threat, and STEM and non-STEM GPA at follow-up. Baseline gender-STEM compatibility and the baseline level of each dependent variable were entered as additional controls (e.g., analyses predicting evaluative threat at follow-up controlled for evaluative threat at baseline). Gender RS significantly predicted lower sense of belonging in STEM domains, $\beta = -0.19$, $p = .038$, and greater perceptions of evaluative threat, $\beta = 0.16$, $p = .049$. Results are presented in Table 2.

At 2nd-year follow-up, fluctuations in gender-STEM compatibility significantly predicted lower gender-STEM compatibility, $\beta = -0.21$, $p = .015$, lower sense of belonging in STEM domains, $\beta = -0.20$, $p = .019$, and greater perceptions of evaluative threat, $\beta = 0.33$, $p < .001$. These fluctuations also significantly predicted lower STEM GPA, $\beta = -0.23$, $p = .035$, but, as we predicted, were unrelated to non-STEM GPA, $p = .58$.

Does fluctuating gender-STEM compatibility mediate the relationship between gender RS and outcomes at follow-up?

Finally, we examined whether fluctuations in gender-STEM compatibility mediated the relationship between gender RS and outcomes at 2nd-year follow-up, controlling for baseline gender-STEM compatibility in all models. We employed the Preacher and Hayes (2008) bootstrapping test of mediation, for which significant mediation (i.e., a significant indirect effect of gender RS through fluctuations in gender-STEM compatibility) is indicated by a 95% confidence interval that does not include zero. Results are detailed in Figure 1. Fluctuations in gender-STEM compatibility significantly mediated the relationship between gender RS and follow-up levels of gender-STEM compatibility, 95% confidence interval (CI) = [–.051, –.007]; sense of belonging in STEM domains, 95% CI = [–.057, –.004]; evaluative threat, 95% CI = [.005,

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.047]; and STEM GPA, 95% CI = [−.025, −.002]; but not non-STEM GPA.

Why does gender RS predict greater fluctuations in gender-STEM compatibility?

Finally, we reasoned that the relationship between gender RS and fluctuating gender-STEM compatibility could be explained by stronger reactions to identity-threatening negative events (e.g., a professor questioning whether a female student did her calculus homework herself), which individuals higher in gender RS are more likely to detect (London et al., 2012). We used time-lagged hierarchical linear modeling (HLM) to test this prediction (Kenny, Kashy, & Bolger, 1998). These lag analyses allowed us to explore the temporal relationship between an experience in a given week and the outcome variables reported during the subsequent week, controlling for level of the outcome variable during the previous week (Bolger & Zuckerman, 1995; Larson & Almeida, 1999). A set of HLM analyses was used to test whether the occurrence (as opposed to the absence) of a negative academic event during the past week predicted a decrease in perceived gender-STEM compatibility.

Gender RS, the presence of a negative academic event, and their interaction were within-subjects predictors of gender-STEM compatibility (controlling for the prior week's gender-STEM compatibility). Only the interaction achieved significance, $\beta = -0.04$, $p < .01$, which suggests that negative academic events were related to a within-person decline in perceived gender-STEM compatibility, but only for individuals higher in gender RS. Results are presented in Figure 2.

Finally, we examined the alternate hypothesis that participants high in gender RS were more reactive to negative events in general, even if not an identity-threatening one. Therefore, we conducted an alternative HLM analysis in which we replaced negative academic events with negative social events. Neither the main effects nor the interaction achieved significance—gender RS: $p = .15$; negative social event: $p = .25$; Gender RS × Negative Social Event interaction: $p = .22$.

Discussion

Although past work has shown that perceived compatibility between gender and STEM identities is important for women's success in STEM domains, the present study is the first to examine whether the longitudinal stability of identity compatibility can uniquely predict women's engagement and success in STEM domains. Indeed, identity compatibility appears to be a self-assessment that is somewhat dynamic. In the present study, results confirmed the hypothesis that among undergraduate women pursuing STEM majors, higher gender RS was related to larger within-person fluctuations in the perceived compatibility between gender and STEM identities. These fluctuations in gender-STEM compatibility occurred during the spring semester of students' 1st year, a time when many STEM students begin to focus on their major's core courses. Critically, this instability predicted lower feelings of subjective belonging as well as lower academic performance in STEM courses the following fall semester.

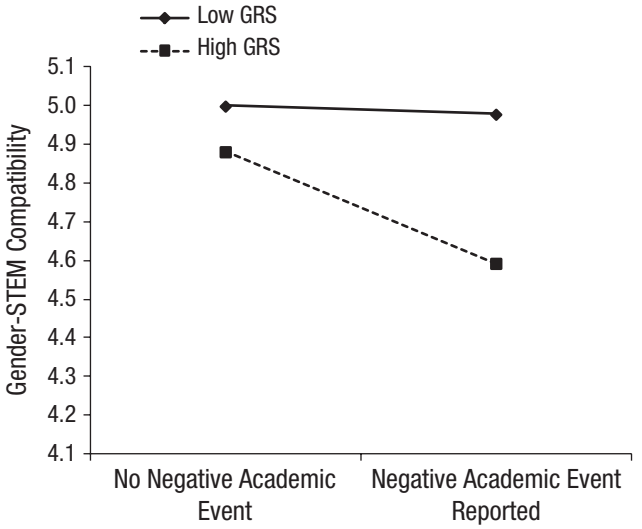

Fig. 2. Gender-STEM identity compatibility as a function of experiencing a negative academic event and gender rejection sensitivity (GRS). STEM = science, technology, engineering, and mathematics.

Past work has identified many factors that may elicit social-identity threat, and sporadic exposure to such factors might lead to these fluctuations in gender-STEM compatibility over time. For instance, a female STEM major may be discouraged when she sees a lack of female role models among her instructors or finds herself to be one of few women in her chosen field (Sekaquaptewa & Thompson, 2003). Instability might also result from exposure to more subtle cues of incompatibility, such as the presence of gendered cues (e.g., video games or posters depicting traditionally male interests, such as sci-fi movies) in some contexts (e.g., her lab) but not others (e.g., her apartment; Cheryan, Plaut, Davies, & Steele, 2009). Even women's pursuit of romantic goals, which varies from day to day, may lead women to become less invested in math and less positive about majoring in a STEM field (Park, Young, Troisi, & Pinkus, 2011). Future work will be needed to determine which threat cues are most likely to produce instability in gender-STEM compatibility.

Indeed, within-person fluctuations in gender-STEM compatibility predicted important declines in subjective

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belonging, which recent research has suggested is intimately tied to women's persistence in STEM fields (e.g., Good et al., 2012). Moreover, we showed longitudinally that the stability of gender-STEM compatibility influenced not only individuals' subjective experience in STEM domains but also their objective performance in STEM courses. The consistency of the findings across both subjective and objective indicators of belonging and success during the following academic year demonstrates the predictive utility of fluctuating gender-STEM compatibility. Moreover, gender RS and fluctuating gender-STEM compatibility were unrelated to grades in non-STEM courses, which indicates that general academic decline was not responsible for these effects.

These findings reaffirm the value of studying the interplay between individual differences and situational variables. The longitudinal, repeated measures diary methodology employed in the present work offers unique advantages by demonstrating the interaction between the person and the situation in a specific context. This methodology allowed us to examine true within-person change over time as well as whether a single event (such as a negative interaction with a professor) can harm women's gender-STEM compatibility, thereby providing insight into one causal mechanism by which women may become less identified with their STEM major. Moreover, because measures were repeated over time, we were able to control for baseline individual differences and thus could more rigorously test our predictions.

Despite the consistency of these findings with our theoretical predictions, they are not without limitations. For example, the generalizability of the findings needs to be examined outside of female STEM majors. Although assessments of comparison groups of non-STEM females or STEM males could shed light on the findings, prior research has suggested that fluctuations in self-perceptions may not occur for nonstigmatized individuals (Aronson & Inzlicht, 2004). Finally, although weekly diary data were collected during the spring semester, follow-up outcomes were not collected until the following fall. On the one hand, this may have allowed for the introduction of outside factors that influenced fall outcomes. On the other hand, having more time between the predictor and outcome measurements may offer a test of longer-lasting effects of fluctuating identity compatibility.

Notwithstanding these limitations, researchers should consider pursuing this notion of stability as a potentially useful, novel predictor. Understanding that people's sense of identity is dynamic and shifting will be an essential step in more broadly illuminating the interplay between threat and self-perceptions.

Author Contributions

S. Ahlqvist developed the theoretical model, analyzed and interpreted the data, and drafted the manuscript. B. London assisted with the development of the theoretical model; supervised data collection, analysis, and interpretation; and critically revised the manuscript. L. Rosenthal collected data and critically revised the manuscript. All authors approved the final version of the manuscript.

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Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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