Article

The Measurement, Nomological Net, and Theory of Perceived Self-Esteem Instability: Applying the Conservation of Resources Theory to Understand the Construct

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Abstract

The current article performs the first focused investigation into the construct of perceived self-esteem instability (P-SEI). Four studies investigate the construct's measurement, nomological net, and theoretical dynamics. Study 1 confirms the factor structure of a P-SEI Measure, supporting that P-SEI can be adequately measured. Study 2 identifies an initial nomological net surrounding P-SEI, showing that the construct is strongly related to stable aspects of the self (i.e., neuroticism and core self-evaluations). In Studies 3 and 4, the Conservation of Resources Theory is applied to develop and test five hypotheses. These studies show that P-SEI is predicted by self-esteem level and stressors, and the relationship of certain stressors is moderated by self-esteem contingencies. P-SEI also predicts stress, depression, anxiety, and certain defensive postures. From these studies and the integration of Conservation of Resources Theory, we suggest that P-SEI emerges through an interaction between environmental influences and personal resources, and we provide a theoretical model to better understand the construct of P-SEI. We suggest that this theory-driven model can prompt the initial field of study on P-SEI.

Keywords

Well-being, intelligence, personality theory, organizational psychology, psychometrics

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Introduction

The evaluation of one's own self-worth, known as self-esteem, is often considered to be a relatively stable aspect of the self (Judge, Erez, Bono, & Thoresen, 2003; Okada, 2010), but research has long shown that within-person variations in these evaluations may influence important personal outcomes, such as depression and life satisfaction (De Man, Gutiérrez, & Sterk, 2001; Meier, Semmer, & Hupfeld, 2009; Oosterwegel, Field, Hart, & Anderson, 2001). While everyone is expected to have their self-evaluations vary to some extent, research has also shown that people have differing tendencies to consistently do so (Chabrol, Rousseau, & Callahan, 2006; Howard, 2017; Kernis et al., 1992; Kernis, Cornell, Sun, Berry, & Harlow, 1993). That is, some people may have their self-esteem level change often, whereas others have a more consistent self-esteem level. This finding led researchers to identify the construct of self-esteem instability (SEI), defined as the "propensity to exhibit variability in self-feelings across time" (Kernis et al., 1993, p. 1190).

SEI is most commonly gauged through repeated measurements of self-esteem, such as daily for two weeks, and the within-person standard deviations of these measurement occasions is considered to be representative of the construct (Kernis, Grannemann, & Barclay, 1989; Zeigler-Hill, 2006). Some authors, however, have attempted to gauge the construct through single-administration, self-report scales (Chabrol et al., 2006; Kernis, Grannemann, & Barclay, 1992; Rosenberg, 1965). In the majority of these attempts, the resultant validity and/or psychometric of the scales was poor, among other concerns, causing the authors of these scales to consider their SEI scales a failure (Kernis et al., 1992; Rosenberg, 1965). Further, Howard (2017) recently analyzed the relation of three prior SEI scales, a newly developed SEI scale, and the traditional method to gauge SEI. The scales had only moderate relationships with the traditional method, suggesting poor construct validity. From this effort, Howard (2017) suggested that these scales may not gauge SEI, but they may instead gauge a different construct that is worthy of study—Perceived SEI (P-SEI).

To date, no research has formally studied P-SEI, and a definition has yet to be proposed for the construct. As such, we define P-SEI as one's perception of their own variability in self-feelings. We argue that P-SEI is related to—but distinct from—SEI itself, which has been supported by prior research applying single-administration scales of SEI (Chabrol et al., 2006; Howard, 2017; Kernis et al., 1992). P-SEI is not a replacement for SEI, but rather extends our understanding of the construct. Further, we propose that P-SEI may be an integral facet of certain aspects of the self, which may include self-assessments, emotional regulation, personality, and/or temperament. Given the wide array of possibilities, P-SEI has the potential to influence a large number of personal outcomes. More importantly, each of these possibilities are central aspects of the self. Thus, not

only does P-SEI have the potential to influence *many* personal outcomes, but it also has the potential to *strongly* influence these outcomes.

A sufficient theoretical lens is needed, however, to appropriately study P-SEI and identify the manner in which the construct relates to both antecedents and outcomes. For this reason, we apply the Conservation of Resources (COR) Theory, which is among the most popular theories to describe interpersonal regulation processes (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014; Hobfoll, 1989, 2001, 2011a, 2011b), to suggest that P-SEI is closely tied to personal self-regulation. Particularly, P-SEI is developed when people are consciously aware that their personal resources are unstable, and they are more mindful of decreases (e.g., stressors) rather than increases in resources within contingent domains (Halbesleben et al., 2014; Hobfoll, 2011a, 2011b). In turn, those with high P-SEI may experience reductions to their psychological well-being and react by engaging in defensive postures to prevent further reductions (Kernis et al., 1993; Seery, Blascovich, Weisbuch, & Vick, 2004).

This application of COR Theory provides a theoretical basis to study P-SEI, but it also allows for a better understanding of COR Theory itself. Recent authors have noted that COR Theory has been primarily used to model the effects of varying levels of resources (i.e., high and low self-esteem), but these authors call for more research investigating the nature of changes in resources (e.g., SEI and P-SEI; Halbesleben et al., 2014; Hobfoll, 2011a, 2012). We heed this call and extend COR Theory to suggest that perceived changes in resources influence personal outcomes, beyond whether such resources are perceived to be high or low.

It should be highlighted that the identification of P-SEI may reduce construct confusion regarding SEI. At least four efforts have been made to develop single-administration, self-report scales of SEI (Chabrol et al., 2006; Howard, 2017; Kernis et al., 1992; Rosenberg, 1965). While each of these authors suggested that their scales do not adequately measure SEI, some subsequent researchers have nevertheless applied the measures for this purpose. Distinguishing P-SEI suggests that the application of these scales to measure SEI is inappropriate, but, more importantly, it provides an avenue that these researchers may nevertheless derive important implications from their results—by discussing their findings in the context of P-SEI. Likewise, not every researcher has access to the resources required to appropriately measure SEI, but they may instead have the resources to provide insights into P-SEI. Thus, not only does identifying the construct of P-SEI reduce construct confusion surrounding SEI, but it also opens new future directions for researchers who may be unable to appropriately study SEI itself.

To achieve the goals of the current article, the following is organized as such: First, we review prior single-administration measures of SEI, discuss the possible nomological net of P-SEI, and integrate COR Theory into the study of P-SEI. Second, four studies confirm the measurement of P-SEI, explore the initial nomological net of P-SEI, and test the hypotheses developed from the application of

COR Theory. Third, we discuss the implications of these studies, thereby providing a firm methodological and theoretical basis for the study of P-SEI.

Background

SEI has traditionally been gauged through multiple measurements of self-esteem over the course of several days, such as daily for one week (Kernis et al., 1989), twice daily for two weeks (Zeigler-Hill, 2006), or weekly for five weeks (Howard, 2017). Some authors, however, have attempted to develop single-administration self-report scales to gauge SEI (Chabrol et al., 2006; Kernis et al., 1992; Rosenberg, 1965), and two recent articles probed the suitability of these measures (Howard, 2017; Webster, Smith, Brunell, Paddock, & Nezlek, 2016). Webster et al. (2016) conducted a meta-analysis of 10 studies, showing that these single-administration scales have a mean uncorrected correlation of .32 and a mean corrected correlation of .47 with the traditional method of gauging SEI. The authors used these findings to suggest that these single-administration scales may adequately gauge SEI. However, many prior psychometric guidelines suggest much larger convergent validity correlation cutoffs for a scale to be considered representative of a construct, such as .70 for uncorrected correlations (Henson, 2001; Streiner, 2003; Streiner, Norman, & Cairney, 2014). Further, Webster et al. (2016) also suggested that single-administration scales may gauge SEI as an "attitude," whereas the traditional measurement may gauge it as a "behavior"—thereby suggesting that single-administration SEI scales are a step removed from actual SEI (p. 11).

Alternatively, Howard (2017) studied the relationship between three previously created single-administration scales, a newly developed single-administration scale, and the traditional method to gauge SEI (measured through daily administrations for two weeks and weekly administrations for five weeks). No correlation of the single-administration scales with the traditional measurement of SEI exceeded the value of $|.50|$, and most convergent validity correlations were only moderate in size ($r \sim |.30|$). These correlations between the single-administration scales and the traditional method to gauge SEI were also comparable in size to those observed between self-esteem level and the traditional method to gauge SEI. This led Howard (2017) to suggest that these single-administration scales do not sufficiently gauge SEI—a stance that is likewise taken in the current article. Howard (2017) continued to suggest that these scales may instead gauge P-SEI, which may also relate to important personal outcomes.

We define P-SEI as one's perception of their own variability in self-feelings. While closely related, the inclusion of the term "perceived" emphasizes that P-SEI is a step removed from SEI (Webster et al., 2016). When reviewing prior studies that used single-administration SEI scales, initial inferences can be made about P-SEI. P-SEI has a strong relationship with self-esteem, which has been observed across multiple scales and measurement methods

(Howard, 2017; Webster et al., 2016). It also relates to certain personal outcomes. Chabrol et al. (2006) showed that their single-administration scale significantly relates to depression, even when controlling for self-esteem level; Kernis et al. (1989) demonstrated that P-SEI has a small-to-moderate relationship with hostility and aggression; and Kernis et al. (1992) showed that the construct has a moderate relationship with social anxiety. The construct also significantly relates to defensive interpersonal tendencies, such as self-consciousness, interpersonal orientations, and fear of negative evaluations (Kernis et al., 1992).

Beyond these relationships, however, few other effects have been investigated, and much is still unknown about P-SEI. Perhaps the three most essential unknown aspects are: (1) the ability of prior measures to sufficiently gauge P-SEI, (2) the nomological net of P-SEI, (3) and the appropriate theoretical lens to study P-SEI, which may inform about the mechanisms in which P-SEI influences personal outcomes. We address each of these in the following.

Measurement of P-SEI

To empirically research any construct, reliable and valid measures are needed. Many single-administration scales have been created in an attempt to gauge SEI, but no established scale has emerged in modern research. Howard (2017) reviewed existing single-administration scales, and noted that two had been used in multiple studies (Kernis, 1992; Rosenberg, 1965) and one other had been applied sporadically (Chabrol et al., 2006). Each of these scales have notable concerns despite their usage, such as wording issues (Rosenberg, 1965), required administration methods (Kernis, 1992), and lack of psychometric or validity evidence (Chabrol et al., 2006). Even yet, the authors of two of these scales spoke out against their application, providing suggestions on methods to create improved single administration scales (Kernis, 1992; Rosenberg, 1965). Using these suggestions, Howard (2017) created the 12-item P-SEI Measure. While the scale does not sufficiently gauge SEI, it was instead supported to be an adequate measure of P-SEI. To our knowledge, this is the only P-SEI scale with empirical support for its psychometric properties, which Howard (2017) initially showed through exploratory factor analysis, and Howard (2017) supported the scale's convergent validity by demonstrating its large relationships with other single administration scales (Chabrol et al., 2006; Rosenberg, 1965).

In the current article, we further investigate the psychometric properties of the P-SEI Measure through confirmatory factor analysis (CFA) to ensure that it is an adequate scale to gauge P-SEI. Because the P-SEI Measure was previously shown to have extremely large factor loadings (all $>.75$) and an extremely strong internal consistency ($\alpha = 97, .95, .96$; Howard, 2017), some repetitive items are expected to be removed during the confirmation of its factor structure. This would result in a more concise measure that may encourage the future study of P-SEI.

Nomological net of P-SEI

Only two constructs have been shown to consistently relate to P-SEI: SEI and self-esteem level (Okada, 2010; Webster et al., 2016). To identify the broader nomological net of P-SEI, the manner in which the construct emerges should be considered. Both, SEI and P-SEI, are believed to be trait-like constructs. While extant research has yet to analyze the test–retest reliability of SEI, the test–retest reliability of P-SEI scales are often quite strong ($r = .90$, Chabrol et al., 2006; $r = .80$, Webster et al., 2016), thereby supporting that the construct may be trait-like. Further, scales that can be used to gauge P-SEI typically include items that gauge a holistic and general self-concept, rather than multiple individual aspects of self-worth that may vary. Thus, P-SEI is conceptualized and operationalized as a trait-like and general construct.

Given these considerations, P-SEI should emerge from more stable and general aspects of the self, such as personality or fundamental self-evaluations. For this reason, we predict that P-SEI has strong relationships with two theoretically similar constructs from these domains: neuroticism and core self-evaluations. Alternatively, P-SEI should be less strongly related to constructs that emerge from less stable aspects of the self, such as emotions and temperament. As such, we predict that P-SEI only has moderate relationships with two theoretically similar constructs from these domains: affect and goal orientations.

By analyzing these relationships, the current article provides initial inferences regarding the manner that P-SEI emerges—as a trait or a state. These efforts can also provide support that P-SEI is a unique construct and the P-SEI Measure has appropriate concurrent validity. With an initial nomological net suggested, we now integrate COR Theory with P-SEI.

Integrating COR Theory with P-SEI

COR Theory is among the most popular theories to describe interpersonal self-regulation processes (Halbesleben et al., 2014; Hobfoll, 1989, 2001, 2011a, 2011b). The theory suggests that individuals seek to acquire and maintain resources, such as objects, conditions, and energies. Stress and other negative personal outcomes occur when there is a loss of resources and/or a threat of loss, but certain individual differences may also serve as a protective resource. Protective resources buffer against the loss of resources and/or other negative personal outcomes.

Since its inception, a great deal of attention has been given to the concept of ''resources,'' and a large criticism of the original COR Theory is its vague and general definition for this concept. Resources were originally defined as ''things that people value'' (Halbesleben et al., 2014, p. 4; Hobfoll, 1988, 1989), but recent authors have noted that this definition (a) can be interpreted in many different ways and (b) could include anything that leads to good outcomes and

exclude anything that leads to bad outcomes (Halbesleben et al., 2014). The former of these concerns draws attention to the potential for COR Theory to be applied inconsistently, leading to notable disparities in research. The latter of these concerns draws attention to the potential for confounds between resources and their outcomes, which is particularly problematic as resources that lead to good outcomes may also lead to bad outcomes (i.e., work engagement can lead to improved performance but also work–family conflict; Halbesleben et al., 2014).

Due to this concern, Halbesleben et al. (2014) proposed that resources should be defined as, "anything perceived by the individual to help attain his or her goals" (p. 5), with the understanding that people simultaneously strive to attain multiple goals. Some resources may lead to many positive outcomes and help people attain many goals (i.e., self-esteem level), but even these resources may aid in the attainment of certain goals more so than others. In other words, the value of a resource can vary depending on the context. For this reason, it is important to consider the goals that self-esteem level may best aid when studying P-SEI, which can be identified by considering self-esteem contingencies.

Self-esteem contingencies represent the domain in which self-worth is derived (Crocker, Brook, Niiya, & Villacorta, 2006; Crocker, Karpinski, et al., 2003), and they are entirely separate from self-esteem level, SEI, and P-SEI. People may derive their self-esteem level from an almost uncountable number of domains, including their work, knowledge, physical appearance, and a host of others. As prior research has suggested and shown, one's self-esteem level may subconsciously indicate whether a person is achieving or failing valued goals in their desired domain (Leary, 2005; Leary & Baumeister, 2000), thereby providing a valuable function towards goal achievement. In this regard, self-esteem level could be considered a valuable resource in regard to any domain from which a person derives their self-esteem, because self-esteem may aid goal achievement in that domain. In turn, self-esteem may be particularly influenced by external influences from these valued domains and not influenced by external influences from unvalued domains.

With these factors taken into consideration, COR Theory can be used to better understand SEI and P-SEI as well as develop testable hypotheses and an initial model (Figure 1). Whenever a person encounters an external influence that may cause resource loss and/or the threat of loss, their protective resources buffer against negative personal outcomes—including the resource loss itself. For this reason, SEI can be conceptualized as an outcome obtained from the interaction between external influences and protective resources influencing self-esteem level; however, external influences may only influence SEI if they arise from valued domains. This causes the relation between external influences on SEI to be moderated by self-esteem contingencies.

Furthermore, as P-SEI is believed to be derived from SEI, P-SEI can also be considered an outcome obtained from the interaction between external

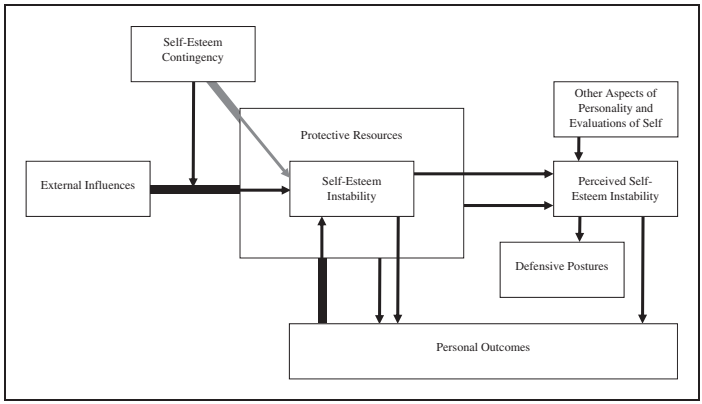

Figure 1. Theoretical model of perceived self-esteem instability.
Note: Grey pathway added after the results of Study 4.

influences and protective resources influencing self-esteem level, which includes a moderating effect of self-esteem contingencies. At the same time, however, we also noted that P-SEI may arise from more general and holistic evaluations of the self. Due to the emergence of P-SEI from evaluations of the self, we suggest that P-SEI is somewhat more reflective of protective resources than it is of external influences, as protective resources are a personal characteristic. We also suggest that P-SEI emerges alongside several other stable aspects of personality and evaluations of the self, causing these other stable aspects to potentially have a direct effect on P-SEI independently from protective resources.

Further, we suggest that P-SEI is related to important personal outcomes, as changes in resources (i.e., self-esteem level) produce such outcomes. P-SEI may relate to indicators of poor personal and psychological well-being, such as stress, depression, and anxiety. People may also enact in defensive postures if they experience resource loss to conserve their remaining resources, causing P-SEI to be positively related to defensive postures.

This conceptualization may help explain prior findings on P-SEI. As mentioned, P-SEI and self-esteem level both have moderate correlations with SEI ($\sim|.30|$; Howard, 2017). P-SEI and self-esteem level have a large correlation with each other ($\sim|.50|$; Howard, 2017). This large correlation may reflect the tendency for P-SEI to be reflective of protective resources, of which self-esteem is often considered. At the same time, however, P-SEI is not *entirely* protective resources. The construct also relates to depression, even when controlling for self-esteem level (Chabrol et al., 2006), and this finding suggests that P-SEI still reflects changes in a powerful resource, self-esteem, in which loss is more salient than gain. Relatedly, P-SEI is related to defensive interpersonal tendencies

(Kernis et al., 1993; Seery et al., 2004), which may be considered a type of defensive posture—one that may be used to deter future loss of self-esteem.

Additionally, prior research on SEI itself supports the existence of these proposed relationships identified by COR Theory, with the assumption that P-SEI may produce similar findings. A prior meta-analysis supported that SEI has a moderate relationship with self-esteem level (Okada, 2010), and the construct relates to both stressors (Greenier et al., 1999) and poor psychological well-being (Greenier et al., 1999; Kernis, Grannemann, & Mathis, 1991; Kernis, Jadrich, Gibert, & Sun, 1996). Some research has identified a connection between SEI and self-esteem contingencies (Crocker, Luhtanen, et al., 2003; Crocker, Sommers, & Luhtanen, 2002) as well as defensiveness (Kernis, Greenier, Herlocker, Whisenhunt, & Abend, 1997). These findings support the ability of COR Theory to inform research on both SEI and P-SEI, but these relationships remain untested in the context of P-SEI. Therefore, to further support this integration of COR Theory and P-SEI, the following relationships is tested in the current article:

Hypothesis 1: P-SEI is negatively related to (a) self-esteem level and (b) core self-evaluations.
Hypothesis 2: P-SEI is positively related to stressors.
Hypothesis 3: The relationship of P-SEI and stressors is moderated by self-esteem contingencies, such that the relationship is stronger when self-esteem is more contingent on the domain.
Hypothesis 4: P-SEI is positively related to (a) stress, (b) depression, and (c) anxiety.
Hypothesis 5: P-SEI is positively related to defensive postures.

It should be noted that testing these relationships does not provide a comprehensive analysis of the proposed model. While SEI was incorporated into the model, the goal of the current article is to analyze P-SEI independently of SEI itself. None of the relationships that involve SEI are tested. Likewise, the relationship of P-SEI with negative personal outcomes is tested, but the proposed model does not limit personal outcomes to negative outcomes alone. For this reason, Figure 2 is provided to more clearly illustrate the differences between the full model and the aspects tested within the current article, and the discussion section further explores the importance—but also drawbacks—of studying P-SEI independent of SEI.

Study 1—Measurement of P-SEI

The goal of Study 1 is to confirm the factor structure of Howard's (2017) P-SEI Measure. Repetitive items are expected to be removed through this process (Brown, 2015; Hair, 2010).

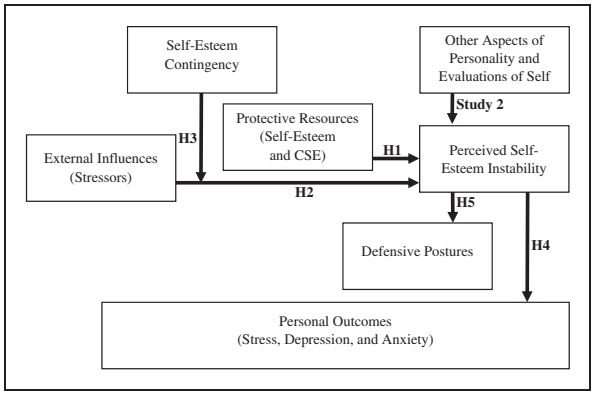

Figure 2. Theoretical model of perceived self-esteem instability tested in the current article.

Method

Participants. Study 1 included 230 participants ($M_{age} = 34.96$, $SD_{age} = 11.04$, 45% female, 91% American) recruited from Amazon's Mechanical Turk (mTurk) in return for a small amount of monetary compensation. This website is a platform that connects people willing to perform tasks on their computer, such as taking a survey, with those who need these tasks performed. Previous studies have shown results using mTurk as valid (Paolacci & Chandler, 2014; Shapiro, Chandler, & Mueller, 2013). To ensure sufficient data quality, we included an attention check (''Mark strongly agree to show that you are paying attention'') and removed those that failed the attention check ($n = 9$). A listwise deletion method was used for all analyses. All statistics, including sample size and demographic information, reflect the sample after removing these participants.

Procedure. Participants signed up for the study via mTurk. They provided their digital informed consent and completed the survey. Then, they were disclosed about the purpose of the study. Institutional review board approval was obtained for all studies.

Measures. P-SEI measure. P-SEI was measured using Howard's (2017) 12-item scale ($\alpha = .97$). An example item is ''My self-worth is unstable.''

Results

To test the psychometric properties of the P-SEI Measure, a CFA was performed with each item loading onto a single latent factor. Using the recommendations of prior authors (Brown, 2015; Hair, 2010), the initial model fit indices

(Standardized Root Mean Square Residual (SRMR) = .03; Root Mean Square Error of Approximation (RMSEA) = .13; Comparative Fit Index (CFI) = .94; Bentler-Bonett Index or Normed Fit Index (NFI) = .92; Goodness of Fit Index (GFI) = .84; Akaike Information Criterion (AIC) = 301.527; $\chi^2 = 253.527$; $df = 54$) met most cutoffs for acceptable fit (SRMR = .08; RMSEA = .10; CFI = .90; NFI = .90, GFI = .90, $\chi^2/df = 5{:}1$), but some fell short of cutoffs for satisfactory fit (SRMR = .05; RMSEA = .08; CFI = .95; NFI = .95, GFI = .95, $\chi^2/df = 2{:}1$). Each item loading was extremely strong (all >.75).

To remove concerning items and improve model fit, modification indices and inter-item correlations were used. We removed four items with the highest summed modification indices of their error variances in a stepwise manner. Each of the removed items also had an extremely strong correlation (>.80) with another remaining item. A CFA with the resulting eight items loading onto a single factor resulted in improved model fit (SRMR = .02; RMSEA = .08; CFI = .98; NFI = .97; GFI = .95; AIC = 81.672; $\chi^2 = 49.672$; $df = 20$) that met almost all cutoffs for satisfactory fit. Each item still had extremely strong factor loadings (all >.75). The Cronbach's alpha of the reduced, 8-item P-SEI Measure was .95. The correlation of the 12-item and the 8-item P-SEI Measure was .996 ($p < .01$), clearly indicating that removing four items did not alter the accuracy of the measure. The correlation of the two measures was again .996 ($p < .01$) using data provided by Howard (2017) in Study 2 of the initial development of the scale. The 8-item scale is included in Appendix 1, and it is henceforth entitled the Reduced P-SEI Measure.

Discussion

Study 1 shows that the Reduced P-SEI Measure is almost statistically identical to the original P-SEI Measure, and the Reduced P-SEI Measure has a satisfactory factor structure.

Study 2—Nomological Net of P-SEI

In Study 2, we explore the nomological net of P-SEI. We analyze the relation of P-SEI with self-esteem level (Hypothesis 1a), core self-evaluations (Hypothesis 1b), the Big Five, affect, and goal orientations. We also test each of these relationships while controlling for self-esteem level, which reflects the relationships of P-SEI beyond one's protective resources alone.

Method

Participants. Study 2 included 90 participants ($M_{age} = 34.69$, $SD_{age} = 11.00$, 48% female, 92% American; 91% employed) recruited from mTurk in return for monetary compensation. We included two attention checks and removed

those that failed either (n = 10). All statistics, including sample size and demographics, reflect the sample after removing these participants.

Procedure. Participants signed up for the study via mTurk. They provided their digital informed consent and completed the survey. Then, they were disclosed about the purpose of the study.

Measures. P-SEI. P-SEI was measured using the Reduced P-SEI Measure ($\alpha = .95$).

Self-esteem level. Self-esteem level was measured using the 10-item Rosenberg Self-Esteem Scale ($\alpha = .94$; Rosenberg, 1965). An example item is "I take a positive attitude toward myself."

Big Five. The Big Five were measured using Saucier's (1994) Mini-Markers scale, which includes eight adjectives to gauge each of the Big Five dimensions: openness to experience ($\alpha = .84$), conscientiousness ($\alpha = .87$), extraversion ($\alpha = .88$), agreeableness ($\alpha = .90$), and neuroticism ($\alpha = .88$). Example adjectives are "Efficient," "Shy," and "Uncreative."

Core self-evaluations. Core self-evaluations were measured using Judge et al.'s (2003) 12-item scale ($\alpha = .93$), which contains the dimensions of self-esteem level ($\alpha = .74$), self-efficacy ($\alpha = .80$), neuroticism ($\alpha = .79$), and locus of control ($\alpha = .71$). An example item is "I complete tasks successfully."

Affect. Affect was measured using the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988), which includes 10 adjectives for positive affect ($\alpha = .92$) and 10 adjectives for negative affect ($\alpha = .96$). Example adjectives are "Excited," "Scared," and "Active." Participants were told to respond in regard to how they feel at the present moment.

Goal orientations. Goal orientations were measured using a 13-item scale created by VandeWalle (1997). The scale includes three dimensions: learning goal orientation ($\alpha = .93$), performance goal orientation ($\alpha = .84$), and avoid goal orientation ($\alpha = .92$). An example item is "I prefer to work on projects where I can prove my ability to others." Only participants that were currently employed were used for all calculations involving goal orientations (n = 82).

Results

Cronbach's alphas, correlations, and partial correlations controlling for self-esteem level are included in Table 1. P-SEI was strongly and negatively correlated with self-esteem level ($r = -.45$, $p < .01$; core self-evaluations, $r = -.48$, $p < .01$). It was also strongly and positively correlated with neuroticism ($r = .57$, $p < .01$; core self-evaluations, $r = .48$, $p < .01$), which was a moderate-to-large correlation when controlling for self-esteem level ($r = .42$, $p < .01$; core self-evaluations, $r = .24$, $p < .01$). P-SEI had moderate-to-large and negative correlations with conscientiousness ($r = -.39$, $p < .01$), core self-evaluations

Table 1. Correlations of all measures applied in Study 2.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. P-SEI	.95	N/A	.00	−.17	.08	.11	.42**	−.26*	−.19	−.10	.24*	−.17	−.04	.14	.12	.16	.11
2. Self-esteem	−.45**	.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3. Openness	−.14	.30**	.84	−.02	.09	.19	.04	.08	.03	.11	.07	.16	.19	.02	.41**	.12	−.20
4. Conscientious	−.39**	.58**	.16	.87	−.08	.28**	−.38**	.19	.18	.19	−.04	.15	.18	−.36**	−.07	−.04	.14
5. Extraversion	−.20	.57**	.24*	.27**	.88	.05	.03	.35**	.22*	.30**	−.30**	.16	.23*	−.08	.15	.24*	−.22*
6. Agreeableness	−.14	.50**	.31**	.49**	.32**	.90	−.28**	−.00	.04	.04	.06	−.01	.05	−.26*	.13	−.21	−.09
7. Neuroticism	.57**	−.59**	−.15	−.59**	−.31**	−.49**	.88	−.39**	−.20	−.22*	.43**	−.19	−.12	.33**	.08	.28*	.38**
8. CSE	−.51**	.89**	.30**	.59**	.63**	.44**	−.66**	.93	.61**	.66**	−.74**	.74**	.30**	−.34**	.20	.08	−.25*
9. Self-Est (CSE)	−.48**	.86**	.28**	.57**	.58**	.44**	−.59**	.91**	.74	.28**	−.25*	.25*	.33**	−.23*	.17	.07	−.03
10. Self-Eff (CSE)	−.43**	.84**	.31**	.57**	.61**	.44**	−.59**	.91**	.79**	.80	−.30**	.35**	.05	−.28**	.33**	.20	−.21
11. Neuro (CSE)	.48**	−.76**	−.19	−.46**	−.59**	−.35**	.67**	−.90**	−.73**	−.74**	.79	−.38**	−.18	.15	.06	.04	.27*
12. LoC (CSE)	−.43**	.71**	.32**	.50**	.49**	.35**	−.52**	.87**	.70**	.73**	−.71**	.71	.24*	−.30**	.18	.02	−.17
13. PA	−.31**	.61**	.33**	.47**	.49**	.33**	−.43**	.65**	.66**	.53**	−.55**	.57**	.92	.03	.12	.14	−.01
14. NA	.35**	−.52**	−.15	−.55**	−.35**	−.45**	.54**	−.60**	−.55**	−.57**	.48**	−.55**	−.29**	.96	−.07	.05	.04
15. Learn	−.12	.45**	.51**	.21	.37**	.33**	−.22*	.48**	.47**	.54**	−.31**	.43**	.36**	−.30**	.94	.37**	−.42**
16. Prove	.08	.12	.16	.04	.26*	−.12	.14	.14	.14	.20	−.07	.10	.18	−.03	.38**	.84	.10
17. Avoid	.28*	−.39**	−.32**	−.13	−.40**	.27*	.42**	−.46**	−.36**	−.44**	.46**	−.39**	−.25*	.24*	−.42**	.05	.91

Note: Numbers below the diagonal are basic correlations. Numbers above the diagonal are partial correlations controlling for self-esteem. Numbers on the diagonal are Cronbach's alphas. Correlations of learn, prove, and avoid orientation were calculated using only participants that were currently employed. P-SEI: perceived self-esteem instability; CSE: Core Self-Evaluations.

*$p < .05$, **$p < .01$.

($r = -.51$, $p < .01$), self-efficacy ($r = -.43$, $p < .01$), locus of control ($r = -.43$, $p < .01$), and positive affect ($r = -.31$, $p < .01$). The construct had moderate and positive correlations with negative affect ($r = .35$, $p < .01$) and avoid goal orientation ($r = .28$, $p \approx .01$). Of these correlations, that of P-SEI with core self-evaluations was the only to be statistically significant when controlling for self-esteem level ($r = -.26$, $p \approx .01$). P-SEI did not have a significant relationship with openness to experience ($r = -.14$, $p \approx .20$), extraversion ($r = -.20$, $p \approx .07$), agreeableness ($r = -.14$, $p \approx .19$), learn goal orientation ($r = -.12$, $p \approx .28$), and prove goal orientation ($r = .08$, $p \approx .47$). These results provide inferences about the nomological net of P-SEI, and they also support Hypotheses 1a and 1b.

Discussion

The results of Study 2 provide several important inferences. P-SEI is distinct from other established aspects of the self. The strongest relationship of P-SEI, with neuroticism, was well below traditional cutoffs of convergent validity (Henson, 2001; Streiner, 2003; Streiner et al., 2014), suggesting that the construct is not repetitive and merits further study. Also, each of the observed relationships was in agreement with expectations: P-SEI was more strongly related to trait and trait-like aspects of the self, and it was more weakly related to state and state-like aspects of the self. This suggests that P-SEI indeed emerges from more stable aspects of the self.

Relatedly, P-SEI was more strongly related to neuroticism than self-esteem level. This result also suggests that P-SEI may be more closely related to aspects of personality, but more research is needed to support this notion. Additionally, many of the significant correlations were no longer significant when controlling for self-esteem level. These results emphasize the need to show that one's perceived instability of self-esteem actually relates to outcomes above and beyond one's perceived level of self-esteem. Likewise, it is necessary to show that P-SEI is related to other constructs more so than protective resources alone, of which self-esteem is assumed to be the most relevant personal resource to P-SEI. With these results taken into consideration, we test our proposed hypotheses in Studies 3 and 4.

Study 3—Integrating COR Theory with P-SEI (cross-sectional)

We previously integrated COR Theory with P-SEI to propose five different hypotheses regarding the relationship of P-SEI with antecedents, outcomes, and even moderators. We provide a cross-sectional test of each hypothesis in Study 3.

Method

Participants. The current study included 138 participants ($M_{age} = 33.31$, $SD_{age} = 9.79$, 37% female, 93% American; 91% employed) recruited from mTurk in return for monetary compensation. We included three attention checks and removed those that failed any ($n = 7$). All statistics, including sample size and demographics, reflect the sample after removing these participants.

Procedure. Participants signed up for the study via mTurk. They provided their digital informed consent and completed the survey. Then, they were disclosed about the purpose of the study.

Measures. P-SEI. P-SEI was measured using the Reduced P-SEI Measure ($\alpha = .97$).

Self-esteem level. Self-esteem level was measured using the 10-item Rosenberg Self-Esteem Scale ($\alpha = .95$; Rosenberg, 1965). An example item is "I take a positive attitude toward myself."

Stress, depression, and anxiety. Stress, depression, and anxiety were measured using the Depression, Anxiety, Stress Scales 21-Item (DASS-21; Stress $\alpha = .96$; Depression $\alpha = .96$; Anxiety $\alpha = .91$). This measure has been shown to be a psychometrically sound instrument that is valid for gauging each of the three personal outcomes (Henry & Crawford, 2005). An example item is "I felt I was close to panic."

Self-esteem contingencies. Self-esteem contingencies were measured using the Contingencies of Self-Worth Scale (Crocker, Luhtanen, Cooper, & Bouvrette, 2003). This scale gauges the extent that respondents' self-esteem is contingent on seven different domains: other's approval ($\alpha = .94$), appearance ($\alpha = .86$), competition ($\alpha = .94$), family support ($\alpha = .89$), virtue ($\alpha = .92$), God's love ($\alpha = .97$), and work competence ($\alpha = .93$). Example items are "My self-worth is affected by how well I do when I am competing with others" (competition) and "Knowing my family members love me makes me feel good about myself" (family support). It should be noted that the original scale includes an academic competence domain. As the current study included working adult participants, we reworded the academic competence items to refer to work competence.

Stressors. To the knowledge of the current authors, no scale exists that gauges stressors that are matched with the self-esteem contingencies identified in Crocker et al.'s (2003) scale. For this reason, we created a measure to gauge stressors that are relevant to each domain of Crocker et al.'s (2003) scale, with five items for each domain. We conducted an item-sort task before administering the scale, which is a supported method for identifying adequate scale items (Anderson & Gerbing, 1991; Howard & Melloy, 2016). Six subject matter experts (SMEs), graduate

students in Management, participated in the item-sort task. Each SME was provided a definition of each domain, and they were asked to indicate the domain that each stressor arose from. The options were each domain and a "None of the Above" choice. We only retained items in which four of the six SMEs identified the correct domain for the stressor. This resulted in the removal of four items. The entire scale is included in Appendix 2.

The resultant Cronbach's alphas of each domain met traditional cutoffs (Other's Approval, $\alpha = .96$; Appearance, $\alpha = .95$; Competition, $\alpha = .94$; Family Support, $\alpha = .91$; Virtue, $\alpha = .94$; God's Love, $\alpha = .80$; Work Competence, $\alpha = .89$).

Defensive postures. Also to the knowledge of the current authors, no scale exists that gauges defensive postures that are matched with the self-esteem contingencies identified in Crocker et al.'s (2003) scale. For this reason, we created a scale to gauge defensive postures that are relevant to each domain of Crocker et al.'s (2003) scale, with five items for each domain. Again, an item-sort task with the six SMEs was conducted. Each SME was provided a definition of each domain, and they were asked to indicate the domain that each defensive posture pertained to. The options were each domain and "None of the Above." We only retained items in which four of the six SMEs identified the correct domain for the stressor. This resulted in the removal of three items, and the entire scale is included in Appendix 3.

The Cronbach's alphas of each domain met traditional cutoffs (Other's Approval, $\alpha = .89$; Appearance, $\alpha = .91$; Competition, $\alpha = .74$; Family Support, $\alpha = .88$; Virtue, $\alpha = .97$; God's Love, $\alpha = .95$; Work Competence, $\alpha = .80$).

Results

Table 2 includes all correlations, partial correlations, and Cronbach's alphas of Study 3. As Hypotheses 1a and 1b were tested in Study 2, we only reanalyzed the relationship of P-SEI with self-esteem level. The resultant correlation was $-.64$ ($p < .01$), supporting Hypothesis 1a.

Hypothesis 2 predicted that P-SEI is positively related to stressors. P-SEI was significantly, positively, and strongly correlated with stressors from all seven domains ($r = .35$ to .62, all $p < .01$). While this result strongly supports Hypothesis 2, the relationship of P-SEI was weaker when controlling for self-esteem level. For the partial correlations controlling for self-esteem level, P-SEI was significantly, positively, and moderately correlated with stressors from five of the seven domains (Other's Approval Stressors, $r = .23$, $p < .01$; Appearance Stressors, $r = .14$, $p \approx .10$; Competition Stressors, $r = .21$, $p \approx .02$; Family Stressors, $r = .15$, $p \approx .09$; Virtue Stressors, $r = .18$, $p \approx .04$, God's Love Stressors, $r = .21$, $p \approx .01$; Work Stressors, $r = .17$, $p \approx .04$). While the partial correlations were weaker than the basic correlations, these results still provide overall support of Hypothesis 2 in a more conservative analysis of P-SEI.

Table 2. Correlations of all measures applied in Study 3.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. P-SEI	.97	N/A	.36	.24	.26	.26	.19	.12	.13	−.05	.11	.11	.23	.14	.21	.15	.18	.21	.17	.03	.15	.07	.08	.19	.12	.20
2. Self-esteem	−.64	.95	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3. Stress	.63	−.65	.96	.71	.51	.05	.02	.02	−.04	.05	.03	.01	.32	.33	.35	.17	.09	.19	.40	.35	.31	.29	.28	.17	.07	.39
4. Depression	.63	−.81	.84	.96	.39	.03	−.09	.01	−.18	.02	.01	.03	.25	.09	.32	.17	.01	.15	.37	.25	.29	.24	.28	.21	.10	.30
5. Anxiety	.51	−.54	.68	.63	.91	.03	−.10	−.05	−.05	−.04	.19	−.12	.37	.13	.28	.23	.28	.20	.22	.24	.17	.21	.18	.33	.09	.15
6. SEC OA	.49	−.49	.35	.41	.28	.94	.45	.31	.39	.04	.28	.26	.05	.08	.16	−.13	.08	−.10	.17	.03	−.11	−.08	−.08	.06	−.02	.06
7. SEC APP	.41	−.43	.30	.30	.15	.56	.86	.39	.33	.04	.15	.26	.08	.20	.08	−.00	−.08	−.03	.03	.00	−.23	−.10	−.05	−.01	−.02	.06
8. SEC COM	.19	−.16	.11	.13	.04	.34	.41	.94	.35	.19	.05	.50	.08	.11	.06	−.03	.02	.10	.16	.03	−.07	−.32	−.06	.07	.08	.05
9. SEC FAM	.06	.05	−.06	−.15	−.07	.31	.28	.34	.89	.28	.24	.48	−.00	.16	−.01	−.29	−.09	−.10	.06	.06	−.05	−.07	−.30	−.09	−.05	−.01
10. SEC VIR	−.09	.07	−.01	−.05	−.08	−.00	.00	.18	.29	.92	.18	.44	.04	.10	−.01	−.01	−.21	−.18	.04	.08	.11	−.06	.03	−.38	−.13	−.00
11. SEC GOD	.12	−.05	.05	.05	.18	.27	.16	.06	.24	.18	.97	.26	.11	.13	.19	.16	.23	−.21	.13	19	−.08	.16	−.06	.01	−.34	.03
12. SEC WRK	.16	−.12	.09	.12	−.04	.29	.29	.51	.46	.42	.26	.93	.02	.15	−.08	.03	−.12	−.11	.16	.13	−.00	−.05	.03	−.06	.00	.03
13. STR OA	.52	−.59	.58	.60	.57	.32	.31	.16	−.03	−.01	.12	.09	.96	.26	.47	.34	.11	.23	.37	.20	.13	.14	.21	.07	.07	.21
14. STR APP	.52	−.68	.63	.59	.45	.38	.43	.19	.08	.02	.12	.19	.56	.95	.35	.23	.03	.02	.22	.20	.09	.20	.09	.03	.04	.18
15. STR COM	.62	−.82	.69	.78	.58	.47	.40	.16	−.05	−.07	.15	.06	.70	.71	.94	.32	.33	.07	.48	.20	.08	.15	.17	.23	.08	.34
16. STR FAM	.47	.60	.49	.56	.48	.20	.26	.07	−.27	−.05	.16	.10	.57	.54	.63	.91	.29	.14	.23	.16	.06	.15	.49	.17	.12	.17
17. STR VIR	.38	−.40	.32	.33	.43	.26	.11	.08	−.10	−.22	.23	−.06	.32	.29	.50	.45	.94	.18	.33	.20	.04	.18	.19	.51	.09	.18
18. STR GOD	.35	−.30	.33	.32	.32	.06	.11	.14	−.12	−.19	−.18	−.07	.35	.21	.28	.28	.27	.80	.15	.07	.20	.07	.18	.27	.62	.12
19. STR WRK	.53	−.67	.66	.70	.50	.43	.31	.22	.01	−.02	.13	.20	.62	.57	.75	.54	.49	.30	.89	.28	.09	.09	.23	.34	.19	.40
20. DEF OA	.42	−.62	.61	.62	.49	.32	.27	.12	.01	.02	.18	.18	.49	.54	.60	.47	.39	.24	.58	.89	.26	.52	.37	.45	.12	.44
21. DEF APP	−.00	.18	.12	.02	.05	−.18	−.28	−.09	−.04	.13	−.09	−.02	.00	−.05	−.10	−.06	−.04	.14	−.05	.10	.91	.43	.28	.07	.18	.19
22. DEF COM	.26	−.32	.42	.40	.34	.09	.06	−.25	−.09	−.08	.16	−.01	.30	.36	.35	.30	.29	.16	.28	.58	.34	.74	.38	.18	.16	.29
23. DEF FAM	.39	−.53	.52	.57	.40	.20	.19	.03	−.28	−.01	−.02	.09	.45	.42	.52	.65	.36	.30	.50	.57	.14	.47	.88	.19	.29	.38
24. DEF VIR	.40	−.43	.39	.46	.48	.24	.18	.13	−.10	−.37	.03	−.00	.30	.31	.47	.38	.59	.36	.51	.44	−.02	.29	.37	.97	.34	.23
25. DEF GOD	.24	−.23	.20	.24	.20	.09	.09	.11	−.06	−.14	−.32	.03	.20	.19	.23	.23	.17	.64	.29	.24	.13	.22	.36	.40	.95	.16
26. DEF WRK	.51	−.60	.63	.63	.42	.33	.30	.13	−.04	−.05	.06	.10	.49	.52	.65	.47	.37	.27	.64	.65	.05	.41	.57	.42	.26	.80

Note: Numbers below the diagonal are basic correlations. Numbers above the diagonal are partial correlations controlling for self-esteem. Numbers on the diagonal are Cronbach's alphas. Correlations ≥.17 and <.22 are significant at .05 level. Correlations ≥.22 are significant at .01 level. P-SEI: perceived self-esteem instability.

Hypothesis 3 predicted that the relationship of P-SEI and stressors is moderated by self-esteem contingencies, such that the relationship was stronger when self-esteem is more contingent on the domain. To test this, each stressor and contingency variable was mean-centered, then each was multiplied with the other variable from its respective domain to create an interaction term. For each domain, a separate regression was performed with self-esteem level, the stressor variable, the contingency variable, and the interaction term predicting P-SEI. The results of these regressions are included in Table 3.

The interaction was significant for three of the seven domains (Other's Approval, $B = -.089$, S.E. $= .034$, $t = -2.591$, $p \approx .01$; Appearance, $B = -.120$, S.E. $= .039$, $t = -3.062$, $p < .01$; Competition, $B = -.118$, S.E. $= .038$, $t = -3.127$, $p < .01$). This result partially supports Hypothesis 3, but also suggests that the interactive effect of stressors and self-esteem contingencies predicting P-SEI may be more nuanced than originally predicted.

Hypotheses 4a, 4b, and 4c predicted that P-SEI would positively relate to stress, depression, and anxiety. P-SEI had significant, strong, and positive correlations with stress ($r = .63$, $p < .01$), depression ($r = .63$, $p < .01$), and anxiety ($r = .51$, $p < .01$). When controlling for self-esteem level, P-SEI still had significant, moderate, and positive partial correlations with stress ($r = .36$, $p < .01$), depression ($r = .24$, $p < .01$), and anxiety ($r = .26$, $p < .01$). These results support Hypotheses 4a, 4b, and 4c.

Finally, Hypothesis 5 predicted that P-SEI is related to defensive postures. P-SEI had significant, moderate-to-strong, and positive correlations with defensive postures from six of the seven domains (Other's approval defensive postures, $r = .42$, $p < .01$; Appearance defensive postures, $r = -.00$, $p \approx .99$; Competition defensive postures, $r = .26$, $p < .01$; Family defensive postures, $r = .39$, $p < .01$; Virtue defensive postures, $r = .40$, $p < .01$; God's love defensive postures, $r = .24$, $p < .01$; Work defensive postures, $r = .51$, $p < .01$). Again, while this result strongly supports Hypothesis 5, the relationship of P-SEI was notably weaker when controlling for self-esteem level. For the partial correlations controlling for self-esteem level, P-SEI was significantly, positively, and moderately correlated with two of the seven defensive postures (Other's approval defensive postures, $r = .03$, $p \approx .69$; Appearance defensive postures, $r = .15$, $p \approx .09$; Competition defensive postures, $r = .07$, $p \approx .40$; Family defensive postures, $r = .08$, $p \approx .35$; Virtue defensive postures, $r = .19$, $p \approx .03$, God's love defensive postures, $r = .12$, $p \approx .17$; Work defensive postures, $r = .20$, $p \approx .02$). While the correlations provided strong support for Hypothesis 5, the partial correlations did not provide clear support.

Discussion

Study 3 firmly supported Hypotheses 1a and 1b, which proposed that P-SEI is negatively related to self-esteem level and core self-evaluations. To test all other

Table 3. Regression results predicting P-SEI in Study 3.

	B (S.E.)	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	6.787 (.379)	17.903**	5.854 (.483)	12.114**	6.340 (.505)	12.552**	5.685 (.622)	9.146**	6.204 (.460)	13.473**	6.426 (.408)	15.743**	6.352 (.386)	16.472**	6.182 (.506)	12.215**
1.) Self-esteem	−.695 (.071)	−9.809**	−.499 (.091)	−5.511**	−.586 (.095)	−6.168**	−.472 (.119)	−3.971**	−.587 (.088)	−6.708**	−.618 (.077)	−7.996**	−.064 (.073)	−8.288**	−.575 (.096)	−6.019**
2a.) SEC OA			.195 (.069)	2.810**												
3a.) STR OA			.182 (.072)	2.538*												
4a.) INT OA			−.089 (.034)	−2.591*												
2b.) SEC APP					.146 (.085)	1.721										
3b.) STR APP					.133 (.081)	1.646										
4b.) INT APP					−.120 (.039)	−3.062**										
2c.) SEC COM							.047 (.066)	.721								
3c.) STR COM							.275 (.115)	2.379*								
4c.) INT COM							−.118 (.038)	−3.127**								
2d.) SEC FAM									.164 (.078)	2.118*						
3d.) STR FAM									.209 (.100)	2.096*						
4d.) INT FAM									−.055 (.052)	−1.049						
2e.) SEC VIR											.021 (.083)	.255				
3e.) STR VIR											.258 (.116)	2.233*				
4e.) INT VIR											.110 (.092)	1.194				
2f.) SEC GOD													.136 (.056)	2.416*		
3f.) STR GOD													.236 (.071)	3.337**		
4f.) INT GOD													.060 (.033)	1.790		
2g.) SEC WRK															.055 (.084)	.657
3g.) STR WRK															.188 (.098)	1.921
4g.) INT WRK															−.033 (.058)	−.575
R^2		.41		.51		.48		.48		.45		.44		.47		.44

Note: P-SEI: perceived self-esteem instability.
*$p < .05$, **$p < .01$.

hypotheses, each analysis controlled for self-esteem level to ensure that observed results were not due to perceptions of personal resources. Hypothesis 2 was firmly supported: P-SEI is positively related to stressors from most domains. Hypothesis 3 was partially supported: self-esteem contingencies moderated three of the seven domains' relationships between stressors and P-SEI. Hypotheses 4a, 4b, and 4c were firmly supported: P-SEI is positively related to stress, depression, and anxiety. Finally, Hypothesis 5 was partially supported: P-SEI was positively related to defensive postures from most domains, but it was only related to defensive postures from two domains when controlling for self-esteem level. Together, these results have several implications for our understanding of P-SEI. Before discussing these results, however, we perform a fourth and final study.

Study 4—Integrating COR Theory with P-SEI (time-separated)

Study 3 suffered from the same methodological concern of Studies 1 and 2—a reliance on the cross-sectional, self-report design. This research design is prone to common-method bias that may distort observed relationships, among other concerns (Conway & Lance, 2010; Lindell & Whitney, 2001; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To reduce such concerns and obtain more accurate inferences, we replicate the findings of Study 3 using a time-separated design.

Method

Participants. The current study used a time-separated design that included 290 participants at Time 1 (47% female, 93% American; 85% employed), 174 participants at Time 2, 133 at Time 3, 112 participants at Time 4, and 97 participants at Time 5. If a participant did not participate in a prior measurement occasion, they were not allowed to participate in subsequent measurement occasions. Therefore, the 97 participants at Time 5 participated at all five time points.

Further, participants were recruited from mTurk in return for monetary compensation. We included three attention checks and removed those that failed any ($n = 19$). All statistics, including demographic information, reflect the sample after removing these participants.

Procedure. Participants signed up for the study via mTurk. They provided their digital informed consent and completed the first survey, which included demographic information. One day later, participants were emailed the second survey, which included the self-esteem contingency and stressor scales. On the next day, participants were emailed the third survey link, which included the self-esteem scale. One day after, participants were emailed the fourth survey link, which

included the Reduced P-SEI Measure. Finally, on the following day, participants were emailed the fifth survey link, which included the stress, depression, anxiety, and defensive posture scales. After completing all surveys, the participants were disclosed about the purpose of the study.

Measures. All measures applied in Study 3 were also applied in Study 4.

Results

Table 4 includes all correlations, partial correlations, and Cronbach's alphas of Study 3. As Hypotheses 1a and 1b were tested in Study 2, we only reanalyzed the relationship of P-SEI with self-esteem level. The resultant correlation was $-.56$ ($p < .01$), supporting Hypothesis 1a.

Hypothesis 2 predicted that P-SEI is positively related to stressors. P-SEI was significantly, positively, and strongly correlated with stressors from six of seven domains (Other's approval stressors, $r = .49$, $p < .01$; Appearance stressors, $r = .52$, $p < .01$; Competition stressors, $r = .47$, $p < .01$; Family stressors, $r = .42$, $p < .01$; Virtue stressors, $r = .25$, $p < .01$, God's love stressors, $r = .14$, $p \approx .14$; Work stressors, $r = .53$, $p < .01$). This result strongly supports Hypothesis 2, but the relationship of P-SEI was notably weaker when controlling for self-esteem level. For the partial correlations controlling for self-esteem level, P-SEI was significantly, positively, and moderately correlated with stressors from four of seven domains (Other's approval stressors, $r = .21$, $p \approx .03$; Appearance stressors, $r = .26$, $p < .01$; Competition stressors, $r = .06$, $p \approx .51$; Family stressors, $r = .19$, $p \approx .05$; Virtue stressors, $r = .02$, $p \approx .83$, God's love stressors, $r = -.04$, $p \approx .70$; Work stressors, $r = .40$, $p < .01$). The partial correlations were weaker than the basic correlations, but these results provide support of Hypothesis 2 in a very conservative analysis of P-SEI. The results of the relevant analyses are included in Table 5.

Hypothesis 3 predicted that the relationship of P-SEI and stressors is moderated by self-esteem contingencies, such that the relationship was stronger when self-esteem level is more contingent on the domain. The interaction was significant for one of the seven domains (Other's approval, $B = -.129$, S.E. $= .051$, $t = -2.513$, $p \approx .01$). This result does not support Hypothesis 3, but it still suggests that the interactive effect of stressors and self-esteem contingencies predicting P-SEI may be more nuanced than originally predicted.

Hypotheses 4a, 4b, and 4c predicted that P-SEI would positively relate to stress, depression, and anxiety. P-SEI had significant, strong, and positive correlations with stress ($r = .51$, $p < .01$), depression ($r = .54$, $p < .01$), and anxiety ($r = .45$, $p < .01$). When controlling for self-esteem level, P-SEI still had significant, moderate, and positive partial correlations with stress ($r = .30$, $p < .01$), depression ($r = .25$, $p \approx .01$), and anxiety ($r = .23$, $p \approx .02$). These results support Hypotheses 4a, 4b, and 4c.

Table 4. Correlations of all measures applied in Study 4.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1.) P-SEI	.96	N/A	.29	.25	.23	.10	.24	.04	−.06	−.23	−.28	.12	.21	.26	.06	.19	.02	−.04	.40	.16	.14	−.03	.33	.15	.16	.35
2.) Self-esteem	−.56	.92	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.) Stress	.51	−.56	.91	.41	.44	.32	.17	.05	.08	.02	.04	.19	.23	.17	−.06	.19	.13	.19	.21	.33	.26	.22	.19	.07	−.10	.25
4.) Depression	.54	−.71	.64	.95	.49	.10	−.08	.12	−.12	−.27	−.10	−.08	.20	.20	.10	.17	.18	.13	.30	.30	.04	.02	.14	.26	.17	.47
5.) Anxiety	.45	−.52	.60	.66	.88	.14	.13	.20	.15	.04	.09	.12	.16	.05	−.07	.16	.17	.01	.35	.44	−.01	.12	.19	.19	.02	.31
6.) SEC OA	.36	−.51	.52	.42	.37	.93	.40	.10	.31	.18	.04	.19	.12	.25	.19	.07	−.01	.02	.04	−.09	−.01	−.09	.07	.01	.11	.11
7.) SEC APP	.39	−.37	.34	.21	.30	.51	.84	.19	.19	.11	.06	.28	.03	.24	.09	.09	−.08	−.02	.02	−.02	−.22	−.20	.07	−.08	−.08	.07
8.) SEC COM	.08	−.09	.09	.15	.21	.13	.21	.94	.05	.09	.00	.48	.04	−.19	−.14	.11	.04	.09	.03	.14	−.14	−.20	.04	.03	.00	.09
9.) SEC FAM	−.08	.06	.03	−.13	.10	.24	.16	.05	.87	.56	.31	.30	.11	.17	−.02	−.33	−.15	−.00	−.02	.17	.16	.11	−.44	−.30	−.11	−.22
10.) SEC VIR	−.25	.10	−.04	−.26	−.02	.10	.07	.08	.56	.93	.29	.30	−.02	.01	−.10	−.23	−.26	−.17	−.17	.08	.04	.05	−.33	−.62	−.27	−.35
11.) SEC GOD	−.26	.04	.01	−.10	.05	.01	.04	.00	.32	.29	.98	.04	.04	.08	−.06	−.09	−.02	−.14	−.12	.23	.10	.24	−.20	−.07	−.42	−.14
12.) SEC WRK	.14	−.06	.19	−.01	.14	.20	.29	.48	.30	.29	.04	.90	−.05	.07	−.00	−.00	−.04	.09	.05	−.03	−.06	−.14	−.02	−.24	−.02	−.20
13.) STR OA	.49	−.63	.50	.56	.43	.40	.26	.09	.05	−.08	.01	−.02	.95	.31	.27	.33	.23	.20	.35	.33	.00	.08	.23	.25	.07	.22
14.) STR APP	.52	−.63	.46	.56	.36	.49	.41	−.09	.09	−.06	.04	.09	.59	.94	.34	.17	−.00	.16	.30	.12	.10	−.07	.11	.12	.10	.09
15.) STR COM	.47	−.78	.40	.60	.36	.50	.34	−.02	−.05	−.14	−.07	.05	.62	.66	.92	.22	.10	.09	.40	−.11	−.19	−.13	.12	.11	.04	.07
16.) STR FAM	.42	−.50	.42	.46	.38	.31	.26	.14	−.32	−.25	−.10	.03	.54	.43	.51	.90	.43	.18	.31	.04	−.06	−.01	.60	.35	.14	.27
17.) STR VIR	.25	−.42	.33	.41	.34	.20	.08	.07	−.16	−.28	−.04	−.01	.42	.26	.38	.55	.96	.27	.35	.13	−.05	.27	.29	.36	.18	.34
18.) STR GOD	.14	−.30	.32	.30	.16	.17	.09	.11	−.02	−.20	−.14	−.11	.34	.31	.29	.30	.36	.78	.25	.02	.06	−.01	.06	.11	.40	.14
19.) STR WRK	.53	−.40	.38	.48	.48	.23	.17	.07	−.04	−.20	−.13	.07	.50	.46	.54	.45	.46	.34	.86	.15	−.09	−.01	.35	.16	.20	.47
20.) DEF OA	.39	−.48	.50	.53	.58	.18	.16	.16	.12	.02	.18	.00	.52	.38	.31	.27	.31	.16	.31	.84	.26	.53	.16	.20	−.06	.21
21.) DEF APP	.20	−.14	.29	.13	.07	.07	−.15	−.12	.15	.03	.09	−.05	.09	.17	−.00	.02	.01	.10	−.03	.29	.86	.39	.06	.05	.06	.10
22.) DEF COM	.08	−.18	.28	.15	.20	.02	−.12	−.18	.09	.03	.23	−.13	.18	.06	.06	.08	.32	.04	.07	.55	.40	.72	.01	.05	−.07	.17
23.) DEF FAM	.45	−.36	.35	.34	.33	.24	.19	.07	−.43	−.34	−.20	−.00	.39	.31	.35	.66	.40	.16	.44	.30	.11	.08	.93	.35	.27	.27
24.) DEF VIR	.26	−.26	.20	.36	.29	.14	.20	.05	−.31	−.62	−.08	−.22	.35	.25	.27	.42	.42	.18	.25	.29	.08	.09	.40	.96	.33	.24
25.) DEF GOD	.26	−.23	.12	.28	.14	.21	.01	.02	−.12	−.29	−.42	−.01	.20	.22	.20	.24	.26	.44	.27	.06	.09	−.03	.33	.37	.93	.34
26.) DEF WRK	.45	−.31	.38	.54	.41	.25	.18	.11	−.23	−.36	−.15	−.17	.36	.27	.29	.38	.42	.22	.53	.32	.14	.22	.35	.30	.38	.84

Note: Numbers below the diagonal are basic correlations. Numbers above the diagonal are partial correlations controlling for self-esteem. Numbers on the diagonal are Cronbach's alphas. When N = 97, Correlations ≥.20 and <.26 are significant at .05 level. Correlations ≥.26 are significant at .01 level. When N = 112, Correlations ≥.19 and <.25 are significant at .05 level. Correlations ≥.25 are significant at .01 level. When N = 173, Correlations ≥.15 and <.20 are significant at .05 level. Correlations ≥.20 are significant at .01 level. P-SEI: perceived self-esteem instability.

Table 5. Regression results predicting P-SEI in Study 4.

	B (S.E.)	t	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Constant	7.265 (.551)	13.194**	6.470 (.738)	8.766**	5.876 (.686)	8.563**	6.869 (.919)	7.473**	6.612 (.677)	9.773**	7.251 (.607)	11.939**	7.444 (.580)	12.835**	6.101 (.608)	10.029**
1.) Self-esteem	−.732 (.103)	−7.113**	−.554 (.138)	−4.001**	−.457 (.129)	−3.538**	−.657 (.175)	−3.759**	−.605 (.130)	−4.665**	−.737 (.115)	−6.427**	−.768 (.110)	−7.002**	−.508 (.115)	−4.438**
2a.) SEC OA			.060 (.095)	.633												
3a.) STR OA			.213 (.105)	2.036*												
4a.) INT OA			−.129 (.051)	−2.513*												
2b.) SEC APP					.244 (.109)	2.250*										
3b.) STR APP					.233 (.095)	2.464*										
4b.) INT APP					−.061 (.063)	−.939										
2c.) SEC COM							.038 (.092)	.416								
3c.) STR COM							.072 (.164)	.438								
4c.) INT COM							.053 (.075)	.710								
2d.) SEC FAM									.024 (.104)	.227						
3d.) STR FAM									.216 (.135)	1.592						
4d.) INT FAM									.013 (.060)	.216						
2e.) SEC VIR											−.216 (.100)	−2.162*				
3e.) STR VIR											−.140 (.150)	−.937				
4e.) INT VIR											−.085 (.091)	−.927				
2f.) SEC GOD													−.186 (.059)	−3.149**		
3f.) STR GOD													−.097 (.083)	−1.178		
4f.) INT GOD													−.011 (.034)	−.336		
2g.) SEC WRK															.053 (.110)	.481
3g.) STR WRK															.408 (.109)	3.754**
4g.) INT WRK															−.016 (.068)	−.229
R^2		.32		.38		.40		.32		.33		.35		.38		.40

Note: P-SEI: perceived self-esteem instability.
*$p < .05$, **$p < .01$.

Finally, Hypothesis 5 predicted that P-SEI is related to defensive postures. P-SEI had significant, moderate-to-strong, and positive correlations with defensive postures from six of the seven domains (Other's approval defensive postures, $r = .39$, $p < .01$; Appearance defensive postures, $r = .20$, $p \approx .05$; Competition defensive postures, $r = .08$, $p \approx .45$; Family defensive postures, $r = .45$, $p < .01$; Virtue defensive postures, $r = .26$, $p \approx .01$, God's love defensive postures, $r = .26$, $p \approx .01$; Work defensive postures, $r = .45$, $p < .01$). Again, while this result strongly supports Hypothesis 5, the relationship of P-SEI was notably weaker when controlling for self-esteem level. For the partial correlations controlling for self-esteem level, P-SEI was significantly, positively, and moderately correlated with two of the seven defensive postures (Other's approval defensive postures, $r = .16$, $p \approx .11$; Appearance defensive postures, $r = .14$, $p \approx .16$; Competition defensive postures, $r = -.03$, $p \approx .78$; Family defensive postures, $r = .33$, $p < .01$; Virtue defensive postures, $r = .15$, $p \approx .14$, God's love defensive postures, $r = .16$, $p \approx .12$; Work defensive postures, $r = .35$, $p < .01$). While the correlations provided strong support for Hypothesis 5, the partial correlations did not provide clear support.

Discussion

Study 4 replicated the results of Study 3 while controlling for self-esteem level in a time-separated design. P-SEI was significantly predicted by self-esteem level (Hypothesis 1a) and certain stressors (Hypothesis 2). The relationship between the stressors and P-SEI was largely not moderated by self-esteem contingencies (Hypothesis 3), although certain contingencies had a significant direct effect on the construct. P-SEI also predicted stress (Hypothesis 4a), depression (Hypothesis 4b), anxiety (Hypothesis 4c), and certain defensive postures (Hypothesis 5).

General Discussion

We sought to advance research on P-SEI by studying its measurement, nomological net, and theoretically identified relationships. Study 1 supported the psychometric properties of the Reduced P-SEI Measure, allowing future research to progress more easily. Study 2 identified an initial nomological net of P-SEI, indicating that the construct is more related to stable aspects of the self (neuroticism and core self-evaluations) than varying aspects (affect and goal orientations). This finding also suggests that P-SEI is trait-like, especially considering prior research that has shown that the test–retest reliability of P-SEI scales is very strong (Chabrol et al., 2006; Webster et al., 2016). Studies 3 and 4 tested the predictions developed from the integration of P-SEI with COR Theory, which resulted in several important discoveries.

Self-esteem level and core self-evaluations were both strongly and negatively related to P-SEI, suggesting that protective resources are indeed predictive of

P-SEI. Stressors were also significantly related to P-SEI across both studies and negative life events tend to increase P-SEI. While the relationship of P-SEI with some of these stressors was moderated by self-esteem contingencies, such that the relationship was stronger in the presence of the contingency, self-esteem contingencies did not moderate *all* relationships between P-SEI and stressors. This suggests that some stressors may have an impact that is strong enough to influence P-SEI, even if one's self-esteem is not based on that domain—a consideration that is further discussed below.

Furthermore, P-SEI was significantly related to stress, depression, and anxiety in both studies, even when controlling for self-esteem level. This indicates that P-SEI does indeed have powerful effects on personal outcomes, which emphasizes the need to further study the construct. Finally, partial support was provided for the relationship between P-SEI and defensive postures. This indicates that people may enact an array of behaviors when they perceive their self-esteem as being instable, and not all people may shift towards certain defensive postures to protect their resources—another consideration that is further discussed below.

Theoretical Implications

The current studies supported that Howard's (2017) P-SEI Measure effectively gauges P-SEI, which allows future researchers to have greater confidence in their results. The scale has a confirmed unidimensional factor structure, produces strong internal consistencies, and exhibits theoretically supported relationships.

Also, the current article provided further support that P-SEI is trait-like. More importantly, the current article provides justification as to *why* P-SEI is trait-like. Changes in self-esteem are believed to be due to environmental influences, and they are often considered fleeting. That is, an event occurs, self-esteem is reduced or increased, and it returns to a baseline after a certain amount of time; however, external events are not the only influence on P-SEI. P-SEI is a product of the interaction between external events and protective resources, and the influence of protective resources may cause P-SEI to be more trait-like than state-like. Those with ample protective resources may have relatively unwavering self-esteem; those with little protective resources may have consistently wavering self-esteem. When P-SEI is gauged at multiple time points, those with ample protective resources would consistently score lower, whereas those with little protective resources should consistently score higher—thereby producing a strong test–retest reliability. Thus, these cumulative results suggest that P-SEI may be more reflective of the self (and protective resources) than the environment (and external influences), which provides a theoretical rationale as to why P-SEI may be more trait-like.

Relatedly, prior authors have suggested that controlling for self-esteem is required for all analyses involving SEI, due to its association with self-esteem level (Kernis et al., 1992, 1993; Seery et al., 2004). Identifying the relationship

between protective resources and P-SEI further emphasizes the need to control for self-esteem level when analyzing P-SEI. P-SEI emerges from an interaction between the environment and protective resources, but it is more than only one or the other. Controlling for self-esteem level and observing significant relationships can support the uniqueness of P-SEI from protective resources, thereby emphasizing its importance, and more research is needed that achieves this goal to encourage the further study of P-SEI.

Additionally, we discovered an initial nomological net surrounding P-SEI. The construct was strongly related to neuroticism and core self-evaluations, while being more weakly related to affect and goal orientations. This suggests that P-SEI emerges alongside aspects of personality or fundamental self-evaluations, again supporting that the construct is more trait-like than state-like. This finding may aid in linking P-SEI to other domain-relevant theories.

Perhaps the most important contribution of the current article, however, was providing a theoretical lens to study P-SEI, which can allow a more holistic understanding of the construct. Researchers can investigate the other principles and corollaries of COR Theory to further develop the theoretical understanding of P-SEI, as only a subset were tested in the current article. Further, linking P-SEI with COR Theory also links the construct with the broader self-regulation system, which may open many other perspectives. For instance, Control Theory (Muraven & Baumeister, 2000) and Affective Events Theory (Weiss & Cropanzano, 1996) have been used to understand self-regulation, and they may likewise be able to provide insights into P-SEI.

Even unexpected findings in the current results can provide important insights into P-SEI. Although not hypothesized, authors have suggested and shown that self-esteem contingencies have a direct influence on personal well-being (Crocker et al., 2003; Crocker et al., 2006). In Studies 3 and 4, self-esteem contingencies produced significant direct effects on P-SEI, and these direct effects suggest that placing one's self-esteem in certain domains may reduce P-SEI. While many explanations can be provided, certain domains may incur stressors that weakly influence self-esteem (resulting in lower P-SEI), whereas other domains may incur stressors that strongly influence self-esteem (resulting in greater P-SEI). Thereby, where one derives their self-esteem may directly affect how they perceive their self-esteem. Further research is needed to confirm this notion, however, which is suggested along with other future directions below.

Finally, the current article further solidified that P-SEI is indeed a theoretically unique construct. When paired with prior work supporting that P-SEI and SEI are empirically distinct, this cumulative research firmly supports that single-administration, self-report measures should not be used to draw inferences regarding SEI but should rather be used to draw inferences about P-SEI—a research endeavor that is important in its own right.

Future directions

Future research should also expand upon the current application of COR Theory. Particularly, COR Theory draws clear distinctions between the effects of resource loss and gain—one does not simply have the opposite effects of the other. Resource loss is more salient than gain, and defensive postures most often occur due to resources loss rather than gain. A better understanding of P-SEI could be obtained through likewise differentiating the effects of resource loss and gain—a direction that was not taken in the current article.

Further, certain aspects of COR Theory have been only recently incorporated into empirical research. For instance, Hobfoll (2001, 2011b) suggested that resources do not operate independently. Instead, several resources may increase or decrease with each external event, which has been labeled as resource caravans, and certain environmental conditions can serve as caravan passageways that amplify or reduce the movement of multiple resources (Hobfoll, 2001, 2011b). Future research should consider the ability of personal resources, such as self-esteem level, to vary alongside other resources to obtain a complete understanding of P-SEI.

Also, the dynamics of SEI occur and change over time, and P-SEI is believed to function similarly. For this reason, P-SEI naturally lends itself to longitudinal research, and event-oriented perspectives should be considered in the future study of P-SEI. Recent authors (Koopmann, Lanaj, Bono, & Campana, 2016; Morgeson, Mitchell, & Liu, 2015; Schecter, Pilny, Leung, Poole, & Contractor, 2017) have highlighted that many psychological theories, including COR Theory, are centered around microtime interactions that occur over the span of minutes or even seconds; however, researchers rarely test the dynamics surrounding individual events, instead opting to study general constructs without the context of time. It is likely that P-SEI influences people's reactions to specific events, such that they may react more (less) defensively if their P-SEI is high (low), for example. Future research should test how these microtime events cumulate to produce longer lasting effects.

Finally, as noted further in the limitations section, future research should study the dynamics of SEI and P-SEI together. The intent of the current article was to (a) distinguish P-SEI as a separate construct from SEI, which should be both methodologically and theoretically treated as a separate construct; as well as (b) theoretically and empirically explore the core relationships of this distinct construct to prompt future research on the topic. Future research, however, should identify the extent that P-SEI relates to these other important aspects of the self beyond SEI. In doing so, it could be determined whether perceiving changes in one's level of self-esteem have notable outcomes beyond the actual changes in self-esteem level.

Limitations

Many of our hypotheses were tested by analyzing multiple relationships. We did not statistically correct for family-wise error rates, such as Bonferonni corrections, due to concerns regarding statistical power (Cohen, 1992; Nakagawa, 2004). We did, however, provide holistic interpretations of our analyses to address such concerns. For instance, seven analyses tested hypotheses regarding stressors, contingencies, and/or defensive postures. We considered zero or one significant analysis as not supportive of the hypothesis; two or three significant analyses as partially supportive; and four or more significant analyses as full support. This coincides with the likelihood of achieving this number of significant results given a .05 level of significance. Given this level of significance, zero or one significant analyses would occur at a rate of 96%, two significant analyses would occur at a rate of 4%, and more than three significant analyses would occur at a rate of less than 1%. Thus, we believe that our holistic interpretations are appropriate given the infrequency of significant results occurring due to chance alone.

Some concerns could be raised regarding the applied P-SEI measure. The Cronbach's alphas were quite large across the studies, suggesting that the scale may contain some redundant items. Future research may consider an even more abbreviated version of the measure.

Concerns could also be raised about our use of mTurk for data collection purposes. Many prior researchers have asserted that samples obtained via mTurk are comparable, and possibly even preferred, to other commonly used data collection techniques for survey research, such as snowball sampling, network sampling, or panel data collection services (Kees, Berry, Burton, & Sheehan, 2017; Landers & Behrend, 2015; Paolacci & Chandler, 2014; Shapiro et al., 2013; Sheehan, 2018; Woo, Keith, & Thornton, 2015). Nevertheless, future researchers should replicate the current results using different approaches to collecting data.

Issues regarding single-source, cross-sectional studies are well-known, which was the design applied in Studies 1, 2, and 3. Such research designs can produce distorted relationships primarily due to common-method bias (Conway & Lance, 2010; Lindell & Whitney, 2001; Podsakoff et al., 2003). A time-separated design, however, was applied in Study 4, which helps alleviate concerns regarding common-method bias and provide more accurate inferences regarding the relationships of interest (Conway & Lance, 2010; Podsakoff et al., 2003). For this reason, the findings of Study 4 can be assumed to be more reliable than those of Studies 1, 2, or 3. Future research should continue applying sophisticated research designs to further probe these relationships. Similarly, our discussion noted that certain dynamics of P-SEI may unfold over time. It is important for future researchers to apply longitudinal designs to investigate dynamics that may occur over time as well as observe possible causal relationships of P-SEI.

We did not include SEI in any of the current studies, disallowing a full test of our model. This methodological decision was chosen for two reasons. First, the primary goals of the current article were to (a) provide a theoretical framework that could explain the many relationships of P-SEI and (b) study the core relationships of P-SEI. We felt that these initial efforts must be achieved before more sophisticated research could study P-SEI in an appropriate manner. We agree that future research should study P-SEI and SEI together, as many of the relationships of one may be tempered while controlling for the other; however, we also felt that these subsequent investigations did not belong in the current article, as they may distract from the current purpose and investigations. More focused future research should certainly study the dynamics of SEI and P-SEI together, and future researchers should consider novel theoretical perspectives in which one may produce different effects than the other.

Second, as noted by prior authors (Chabrol et al., 2006; Howard, 2017), the preferred measurement method of SEI requires multiple measurement occasions, which may hamper the study of the construct. As previously mentioned, not every researcher has the resources to perform a multiwave longitudinal study over the course of days or weeks, and those who apply single-administration, self-report measures of SEI may do so due to these limiting factors. For these reasons, we wanted the current series of studies to resemble prior work that applied such measures and, more importantly, future research that may study P-SEI in isolation. Likewise, including further measurement occasions may result in participant dropout and reduced motivation (Chabrol et al., 2006; Howard, 2017). As these additional measurement occasions were not necessary for the study of P-SEI alone, it was preferred not to include these measurement occasions due to concerns regarding data quality, which we again believe may be a perspective shared by those that have previously applied single-administration, self-report measures of SEI and/or future researchers of P-SEI. Nevertheless, future authors should consider the merits of studying P-SEI and SEI together.

Appendix 1: Reduced perceived self-esteem instability measure

In the following, indicate how much you agree or disagree that the statement describes yourself. For these questions, answer in regards to how you feel right now.

1—Strongly disagree
2—Disagree
3—Slightly disagree
4—Neither disagree or agree
5—Slightly agree
6—Agree

7—Strongly agree
1.) My opinion of myself often changes.
2.) My self-esteem is instable.
3.) Certain events make my self-esteem change.
4.) I have an unstable opinion about myself.
5.) My feelings about myself change.
6.) My self-esteem level is constantly changing.
7.) My self-esteem is NOT constant.
8.) I am often unsure how I view myself.

Appendix 2: Stressor measure

In the following, indicate how much you agree or disagree that the statement describes yourself. For these questions, answer in regards to how you feel right now.

1—Strongly disagree
2—Disagree
3—Slightly disagree
4—Neither disagree or agree
5—Slightly agree
6—Agree
7—Strongly agree
1.) I have felt that others are disapproving of me.
2.) I have been unable to get the approval of others.
3.) Other people have been judging me.*
4.) I have felt that others don't respect me.
5.) Other people have a negative opinion of me.
6.) I have been feeling ugly.
7.) My body is not as attractive as it used to be.
8.) I look unattractive.
9.) My body is less physically pleasing that others.
10.) Overall, I do not look good.
11.) In many ways, I am doing worse than others.
12.) For most tasks, I do worse than others.
13.) When I compare myself to others, I usually fall short of their achievements.
14.) Whenever I do a competitive task, I lose.
15.) In comparison to others, I do worse.
16.) My family and I have been getting into arguments.
17.) My family and I do not have a great relationship.
18.) I am uncertain whether my family cares for me.
19.) I am uncertain whether my family is proud of me.

20.) I am uncertain whether my family loves me.
21.) I have not been following my morals.
22.) I have been breaking my ethical values.
23.) I have been disregarding my ethics.
24.) I have been straying from my moral principles.
25.) I have been doing unethical activities.
26.) I have not been feeling God's love.
27.) I have been feeling stress from my religious beliefs.*
28.) I have been disobeying God.
29.) I feel distant from God.
30.) I feel distant from others at my place of worship.*
31.) My work has been stressful.
32.) I am distant from others at work.*
33.) My work performance has been substandard.
34.) I have not been performing well recently at work.
35.) I have been falling short of work goals.

*That item was removed during the item-sort task.

Appendix 3: Defensive postures measure

In the following, indicate how much you agree or disagree that the statement describes yourself. For these questions, answer in regards to how you feel right now.

1—Strongly disagree
2—Disagree
3—Slightly disagree
4—Neither disagree or agree
5—Slightly agree
6—Agree
7—Strongly agree

1.) I have been avoiding the judgement of others.
2.) I have been avoiding the approval of others.
3.) I have been doing things that others cannot judge me for.
4.) I have been avoiding the respect of others.
5.) I have been doing things that do not involve the judgments of others.
6.) I have been distancing my mind from my body.*
7.) I have stopped thinking about my appearance.
8.) I have been focusing on things other than my looks.
9.) I have been focusing my thoughts on things other than my appearance.
10.) I have been thinking about things other than my looks.
11.) I have been avoiding competition.

12.) I have stopped comparing myself to others.
13.) I have stopped thinking about my performance in relation to others.
14.) I have been avoiding situations in which my performance could be compared to others.
15.) I have been doing things that cannot be compared to others.
16.) I have been avoiding my family.
17.) I have stopped talking to my family as much as I used to.
18.) I have been associating with people rather than my family.
19.) I have been focusing on my relationships with people outside of my family.
20.) I have stopped maintaining my relationships with my familiar members.
21.) I have been ignoring issues about ethics and morals.
22.) I have been shifting my thoughts away from ethics and morals.
23.) I have stopped thinking about my ethical principles.
24.) I have stopped caring about whether things that I do are unethical.
25.) I have been distancing myself from ethical and moral issues.
26.) I have been avoiding my place of worship.
27.) I have stopped thinking about religious issues.
28.) I have been distancing myself from religious issues.
29.) I have stopped concerning myself with God's love.
30.) I have been thinking less about God.
31.) I have stopped caring as much about work.
32.) I have been distancing myself from work issues.
33.) I have been avoiding others at work.*
34.) I have been focusing on activities outside of work.*
35.) I have been doing more things that are irrelevant to work.

*That item was removed during the item-sort task.

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