

ABSTRACT

STANHOPE, DANIEL STERLING. Core Self-Evaluations in the Context of Training: The Impact of Self-Regard on Training Outcomes. (Under the direction of Samuel B. Pond III.)

Research supports the viability of the core self-evaluations construct in multiple work contexts, but the training domain is absent investigation. This study used hierarchical regression analysis to examine the relationship between core self-evaluations and training outcomes derived from Kirkpatrick's (1976) 4-level taxonomy. Military personnel ($n = 446$) from a language acquisition training program comprised the sample. Those with high core self-evaluations were more likely to identify the training as practical and useful, engaged in higher levels of metacognitive activity, experienced higher levels of self-efficacy, set goals that were more difficult, and had higher intentions and motivation to transfer the training to the job setting. Further, core self-evaluations showed incremental validity over cognitive ability and training motivation for nearly half of the 12 outcomes investigated. CSE showed predictive validity for attitudinal, motivational, and self-regulative variables, but did not account for variance in objective measures of training learning and performance. The implications of these findings are discussed from a theoretical and practical standpoint, and areas for future research are highlighted.

Core Self-Evaluations in the Context of Training: The Impact of
Self-Regard on Training Outcomes

by
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BIOGRAPHY

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Core Self-Evaluations in the Context of Training: The Impact of Self-Regard on Training Outcomes

In addition to other disciplines in the social and behavioral sciences, industrial and organizational psychology has historically acknowledged the impact of personal disposition on human behavior. Individual differences have myriad linkages with work outcomes, including various training criteria. These outcomes include training motivation (e.g., Colquitt, LePine, & Noe, 2000), training performance (Salas & Cannon-Bowers, 2001), and transfer of training (e.g., Colquitt et al., 2000). Research that supports dispositional influence exploits singular traits such as conscientiousness, as well as multi-dimensional frameworks such as the Five-Factor Model of personality (Costa & McCrae, 1992). Circa 1997, a new dispositional predictor with expected pragmatic value materialized: core self-evaluations.

Core self-evaluations (CSE)—one’s fundamental self-appraisal—is a dispositional construct predictive of various work outcomes (Judge, Locke, & Durham, 1997). Although job satisfaction was the original criterion of interest, empirical inquiries eventually surfaced from researchers interested in the potential of CSE predicting other work outcomes (Judge, Erez, & Bono, 1998). Heretofore, published research has yet to examine the influence of CSE within the training context. Accordingly, the main objective of the present study is to investigate CSE’s relation with training outcomes derived from Levels 1, 2, and 3 of Kirkpatrick’s (1976) training criteria taxonomy. This study serves to add clarification to the theoretical and empirical utility of core self-evaluations in a previously unexplored context.

The training domain is unique to CSE research and provides a propitious context for empirical investigation. Understanding antecedents of training effectiveness helps ascertain

the quality of a given intervention and ensures benefit for both the *trainee* and *trainer*. This study examines a military training program designed to teach foreign language acquisition. Participants are military personnel from an authentic training setting, so this study capitalizes on results obtained with a real-world sample, in a real-world setting. Ultimately, advancing the literature on a nascent construct, within an unexplored context is a step toward the transcendent goal of understanding the influences and dynamics of the human disposition.

Theoretical Background of Core Self-Evaluations

Core self-evaluations (CSE) is a higher-order construct underlying a broad set of personality traits that encompass fundamental self-appraisals including general self-regard, self-assuredness, and self-sufficiency. Soon after introduction to the literature (Judge, Locke, & Durham, 1997), researchers spoke of its promising utility by claiming it “may further explicate the psychological processes underlying the dispositional source of job satisfaction” (Judge, Locke, Durham, & Kluger, 1998, p. 18). A more recent portrayal connotes the shift from a satisfaction-specific conceptualization to a more robust one: “[CSE is] the fundamental appraisal of one’s worthiness, effectiveness, and capability as a person” (Judge et al., 2003, p. 304). This depiction indicates that CSE may act as a dispositional mechanism that drives criteria extending beyond the domain of satisfaction. Extrapolating from ancillary evidence relating positive self-concept to motivation and performance (Judge, Thoresen, Bono, & Patton, 2001), and considering CSE’s linkages with satisfaction, it conceivably followed that researchers found positive associations between CSE and other work criteria, including job performance (Judge & Bono, 2001) and goal setting (Erez & Judge, 2001). As of yet, seemingly no publicized research has investigated CSE’s relation to training.

Four Indicators of Core Self-Evaluations

Judge and colleagues conceptualized CSE as a broad set of personality traits, and applied three stipulations to determine its trait manifestations: evaluative, fundamental, and broad in scope. Judge et al. (1997) used these criteria to identify four indicators: (a) general self-efficacy, (b) emotional stability, (c) locus of control, and (d) self-esteem. Judge and Bono (2001) noted that these traits share many conceptual similarities; and Judge et al. (2003) speculated that these traits share similarities because they are all indicators of a deeper, common core construct (i.e., CSE). These are among the most studied traits in the work outcome literature, and are well represented in the training literature. However, the training context is void any investigation into the latent construct underlying these trait indicators (i.e., CSE). Thus, understanding CSE's impact on training is called for.

General self-efficacy. General self-efficacy (G-SE) is an indicator of CSE, because it refers to “one’s estimate of one’s fundamental ability to cope, perform, and be successful” (Judge & Bono, 2001, p. 80). Cervone (1997) asserted that generalizations across diverse domains not accounted for by specific self-efficacy are obtained when idiosyncratic social and self-referent beliefs are assessed. Self-referent beliefs about cross-situational efficacy form primary appraisals of dispositional value, and are encompassed by CSE. Those high in G-SE feel capable and equipped with the cognitive and skill-based resources to succeed in a variety of situations and to perform adroitly at a variety of training demands. Gist and Mitchell (1992) postulated that self-efficacy influences task choice and effort, persisting through disconfirming feedback, and better training outcomes. In accord, Tipton and Worthington (1984) found individuals high in G-SE expended more effort, persevered, and

adapted more effectively on tasks of differing complexities. Training often covers unfamiliar or novel knowledge and skills. G-SE accounts for variability across diverse and complex situations, as it reflects self-referent beliefs not confined to the parameters of a given context. So, the decision to engage, the manifestation of heightened motivation, and the persistence of individuals with high G-SE—and thus, high CSE—is accentuated in the training context.

Emotional stability. Emotional stability is a manifestation of CSE, as it reflects the “tendency to be confident, secure, and steady” (Judge & Bono, 2001, p. 80). Low emotional stability is indicative of negative cognitive and explanatory styles, resulting in a focus on the negative aspects of one’s self (Pinder, 2008, p. 192); and, the proclivity to perceive and recall negative information and experiences (Johnson, Rosen, & Levy, 2008). These individuals tend to be insecure, apprehensive, and susceptible to feelings of helplessness and anxiety, all of which heighten in novel situations (Costa & McCrae, 1992). Therefore, it is feasible to expect a low CSE trainee to have trouble adjusting to a complex training environment, especially if other stressors are present such as negative feedback, frustration, or social pressure. Further, these trainees are at higher risk for performance anxiety and other handicappers. A trainee high in emotional stability—and thus, CSE—should be poised and able to avoid burning up limited cognitive resources on matters such as impression management and anxiety. Rowold (2007), in the training context, found high emotional stability to positively predict motivation to learn and transfer motivation. Thus, a high CSE trainee should have positive perceptions of varying training situations, experience more motivation and persistence, experience and recall positive information, and ultimately generate better training outcomes.

Locus of control. Locus of control (LOC) is an indicator of CSE, as it refers to the fundamental beliefs individuals hold concerning who or what controls events in their lives (Rotter, 1966). *Internals* (internal LOC) believe they control outcomes of events and ascribe causality to internal factors such as effort and ability. Internals attribute successes or failures to factors within themselves, and believe in their own capacity. *Externals* (external LOC) believe the environment, powerful others, or fate determines events, and tend to attribute successes and failures to external sources. It is unlikely that they intensify effort amid tribulation because they lack belief in their capacity to influence outcomes. The confidence internals possess about outcome controllability influences performance and motivation. A study about military training effectiveness found LOC predicted training performance (Bradley & Nicol, 2006); and Colquitt et al. (2000) found LOC predicted skill acquisition and training transfer. Internal LOC is linked to achievement-orientation, low anxiety, and increased motivation (Spector, 1982). LOC's affect on motivation and effort is due to belief that actions (e.g., exerting effort) influence attainment of positive outcomes. In fact, Williams, Thayer, and Pond (1991) found internals had higher effort–performance expectancy, which related with higher motivation to learn. In Noe and Schmitt's (1986) exploratory model of training effectiveness, LOC was posited to influence reactions to assessment (internals more receptive of and constructive with feedback on strengths and weaknesses), expectancies about effort leading to mastery, and expectancies about mastery leading to rewards. I presume those with high CSE—and thus, internal LOC—possess strong expectancies that effort (internal factor) will lead to mastery, and that training mastery will lead to outcomes and coveted rewards.

Self-esteem. Self-esteem is the core self-appraisal and most fundamental evaluation of the self (Judge et al., 1998). Self-esteem is key to self-concept, and research shows it has long-term stability (Costa & McCrae, 1994). Those with high self-esteem have consistent and coherent self-concepts, whereas those with low self-esteem have unclear and malleable ones. This instability evinced in Brown and Dutton's (1995) finding that when those with low self-esteem failed, they overgeneralized the negative implications, which proved deleterious to subsequent performance. However, individuals with high self-esteem construed this as a learning opportunity and did not endure diminished motivation and performance. The training environment is likely to present situations where a trainee encounters hindrances and adversity. The esteem-influenced reactions to these phenomena (e.g., changes in motivation and effort) depend on CSE and ultimately influence the quality of the training experience. As a case in point, Quick, Joplin, Nelson, Mangelsdorff, and Fiedler (1996) linked self-esteem to self-reliance in a military training context. They concluded that individuals with low self-esteem had counterproductive tendencies and higher burnout, and would likely be at greater risk regarding personal well-being and ability to function effectively in training. Training provides opportunities for an individual with a low self-regard to doubt oneself, withhold effort, and self-handicap. Negative feedback and setbacks are only a couple of the training aspects that exacerbate this self-doubt. Trainees with high CSE—thus, high self-esteem—are likely to invest more and persist in training, and therefore benefit from enhanced outcomes.

CSES: The Construct and the Measure

Measuring singly or in combinations the traits of G-SE, emotional stability, LOC, and self-esteem provides valuable dispositional insight. However, directly measuring the underlying cause of these manifest indicators (i.e., CSE) is ideal because (a) omitting indicators could result in predictor deficiency and variance unaccounted for, (b) avoiding aggregates and composites helps limit error and helps with reliability and validity, and (c) a direct measure is more precise, practical, and economical. Judge et al. (2003) developed such a measure for CSE called the Core Self-Evaluations Scale (CSES), and employed a series of studies to provide support for its structural and external validity.

Bono and Judge (2003) drew several conclusions about the relations among the four indicators: (a) they have conceptual similarities, (b) empirical relations are strong, and (c) they consistently indicate a higher-order factor. In harmony is Erez and Judge's (2001) verdict that CSE (as a single factor) is a stronger and more consistent predictor of work criteria than any of the single traits of which it is presumably composed. This is consistent with numerous studies that evinced CSE's superordinate structure (e.g., Erez & Judge, 2001; Judge & Bono, 2001; Judge, Erez et al., 2002). Hence, this study taps CSE's higher-order latent trait; and thus, measuring a single indicator or combination of indicators in lieu of the underlying trait would theoretically result in substantial loss of variance accounted for. (See Appendix A for more information on the theoretical background behind this construct and measure, including a more comprehensive literature review.)

Core Self-Evaluations and Training

CSE and Training Effectiveness

Training effectiveness is assessed from both the situation (e.g., training design) and the person (e.g., trainee characteristics). Whereas historically the former has received the most attention (Goldstein & Ford, 2002), the latter has become a focal area of research (e.g., Baldwin & Ford, 1988; Herold, Davis, Fedor, & Parsons, 2002). Not enough focus has been on the learner within the learning context, and Tannenbaum and Yukl (1992) posit that when trainee characteristics are linked to outcomes, investigators typically examine ability or trainability in lieu of disposition. Campbell (1989) quipped that trainees do not fall out of the sky; they bear idiosyncratic experiences, attitudes, and tendencies. Recognizing individual differences and the influence they exert on training effectiveness is advantageous. To date, training literature is void of investigations into whether CSE predicts variance in training outcomes, so any influence I hypothesize is inferential. As basis for these conjectures, I call upon motivational theories, as well as convergent findings from related contexts.

A first theory, Lazarus's (1991) cognitive appraisal process, posits that the primary appraisal an individual makes in a situation is the overall positivity of the event, and the secondary appraisal is a valuation of the ability to cope with and manage the situation. CSE may influence primary and secondary appraisals, and thereby influence the motivation to engage in training (direction, intensity, and duration of effort). Those low in CSE will view training negatively, deem training outcomes to be out of their control and unmanageable, and conclude that their effort is futile. Although training is identical, individual differences in CSE will lead to different experiential engagement; thus, trainees with high CSE will

approach and leave training with a positive outlook, opt to engage in training, exert adequate effort throughout training, and believe in their efficacy to influence training outcomes.

A second theory, social-cognitive theory, emphasizes the role of cognitive processing, which facilitates decision-making based on learned expectations and awareness of what leads to desirable outcomes. Bandura (1986) described human capabilities inherent to social-cognitive theory, including (a) anticipation and forethought, (b) self-regulation, (c) self-reflection, and (d) intentionality. High CSE trainees are likely to positively self-assess and anticipate valued outcomes, which thereby catalyzes intentions and initiates goal-driven behavior. Furthermore, they will adeptly self-regulate learning and performance throughout the experience, as they are “likely to take on tasks, set goals, alter goals, and attempt to master their environments if they positively assess their own capabilities” (Pinder, 2008, p. 461). This culminates in those with high CSE demonstrating heightened training outcomes.

A third theory, valence-instrumentality-expectancy theory (VIE; Vroom, 1964), posits that individuals cognitively weigh the expectancy that a given behavior will lead to outcomes, that outcomes will be rewarded, and that rewards will be valued. The choice of engaging and exerting the requisite effort is based on the individual’s belief that he or she can influence the outcomes. High CSE trainees believe in their self-sufficiency and capacity (LOC), deem themselves capable (G-SE) and worthy (self-esteem), and value the outcomes because success is consistent with their high self-regard. Indeed, Noe (1986) reported that trainees were more motivated to perform well if they perceived that (a) effort led to performance, (b) training performance led to job performance, and (c) job performance was instrumental in obtaining desired outcomes and avoiding undesired ones.

A fourth theory that provides rationale for CSE's influence on training is goal setting theory. Individuals who set specific, difficult goals and who are committed to those goals are likely to exert effort and perform at high levels (Locke, Latham, & Erez, 1988; Mento, Steel, & Karren, 1987; Tubbs, 1986). Mesmer-Magnus and Viswesvaran (2007) reported that goal setting yielded higher learning outcomes and improved not only training performance, but also the potential that trained knowledge and skills transfer to the job. These findings correspond to Erez and Judge's (2001) finding of CSE's relation to motivation, goal setting, and goal commitment. I propose that high CSE trainees set difficult goals, are predisposed to higher goal commitment, heightened motivation, and higher knowledge and skill acquisition and application. Self-concordance theory supplements goal setting, positing that individuals are happiest and most productive when goals match enduring interests and values (Judge, Bono, Erez, & Locke, 2005). If CSE is high, then self-regard is high and more goal self-concordance is experienced (Luthans & Youssef, 2007). Judge, Bono et al. (2005) found in two studies that CSE related to goal self-concordance, such that individuals with high CSE were more likely to pursue goals for intrinsic and value-congruent reasons. I propose that high CSE trainees will not only set goals that are lofty and consistent with their positive self-concept, but also have commitment and motivation to attain them to sustain their self-image.

A final theory that provides rationale for CSE and training is control theory (Carver & Scheier, 1981), which posits that comparisons between standards and performance result in attitudes and behaviors that strive to reduce gaps. The three responses to discrepancies are (a) increasing effort to reach standards, (b) reducing standards to match performance, or (c) withdrawing. Bandura and Cervone (1983) indicated that when internals with high self-

efficacy faced this predicament, they opted for an intensification of effort. Emotional stability should also help because it allows for avoiding withdrawal-provoking anxiety, viewing the discrepancy as a learning experience, and using negative feedback constructively. Additionally, a high self-esteem should remain unperturbed and prevent one from altering standards or acting incongruently with his or her positive self-regard. Training presents complex challenges, and I expect that a trainee with high CSE will perform at a level that matches the high standards derived from an esteemed self-worth. In the instance where performance does not meet expectation, rather than reducing standards or withdrawing, the individual will intensify effort to reach the preconceived levels of learning and performance.

CSE, Training Criteria, and Hypotheses

Kirkpatrick (1976) facilitated training assessment via a training criteria taxonomy consisting of four levels: (a) reactions, (b) learning, (c) behavior, and (d) results. This taxonomy reduced the convolution of training evaluation by providing a simple, yet systematic means of operationalizing training outcomes. Despite being the most influential and frequently used approach (Goldstein & Ford, 2002), researchers have offered two noteworthy amendments, both having discernible utility and backing (Alliger, Tannenbaum, Bennett, & Traver, 1997; Kraiger, Ford, & Salas, 1993). Next, I describe the levels, including the hypothesis associated with each level and the specific rationale driving my conjectures.

CSE and Level 1 (Reactions). Trainee reactions are attitudinal measures that capture subjective evaluations about the training experience. Reactions include evaluative

judgments about features such as trainer characteristics and training content. Originally, this level included all reactions, regardless of the nature. In response to criticism that a unidimensional conception of reactions was impractical, Alliger et al. (1997) offered a modification, which dichotomized the level into affective reactions and utility reactions. *Affective* refers to satisfaction and enjoyment with the training experience, whereas *utility* captures evaluative judgments about whether the trainee perceived the training as relevant, useful, and practical.

I expect CSE to relate positively to both satisfaction (affective reactions) and perceived usefulness (utility reactions) of training. Firstly, extrapolating from CSE's relation with other satisfaction indices (e.g., subjective well-being and job satisfaction), I expect these oft-evidenced positive relationships (e.g., Judge, Heller, & Klinger, 2008; Judge, Locke, Durham, & Kluger, 1998) to generalize to the training domain. Secondly, individuals with high CSE tend to carry positive outlooks, and engage in attitudes and behaviors that maintain that outlook. Conversely, those with low CSE tend to selectively attend to and recall negative aspects of situations. Training often involves difficult learning situations and provides the opportunity for self-doubt, frustration, and dissatisfaction. Unlike those with low CSE, high CSE trainees have a stable sense of self-worth, use critical feedback as means for improving, and view setbacks as valuable learning experiences. Finally, those with high CSE are likely to view training as instrumental to attaining valued outcomes, and develop proficiency seen as both useful and desired. Thus, a high CSE trainee is likely to approach training positively, attend to and recall positive and useful aspects of the training, perceive

the negative aspects as valuable opportunities, and form overall positive perceptions of the training experience.

Hypothesis 1: Core self-evaluations is positively related to (a) affective reactions, and (b) utility reactions to training.

CSE and Level 2 (Learning). Level 2 refers to training-specific learning and behavior that indicates the amount of knowledge and skills acquired during training, regardless of whether they transfer to the work context. Whether trainees learned the training content is a fundamental issue of evaluation (Campbell, 1988); and, learning outcome data are critical because if learning has not taken place then it is unlikely that a change in behavior will ensue. Research backs this assertion, showing that high levels of learning correlate with high levels of transfer (Ford, Smith, Weissbein, Gully, & Salas, 1998).

Early explication of learning outcomes was absent a clearly contoured classification scheme. Due to the overly simplistic and vaguely defined nature of this level, Kraiger et al. (1993) further delineated it by trichotomizing the unidimensional conceptualization into (a) cognitive learning, (b) skill-based learning, and (c) affective learning. They drew from multiple disciplines (e.g., cognitive and social psychology), inspired by affluent streams of research (i.e., Bloom, 1956; Gagné, 1984), to arrive at an integrated classification that trisected the classical conception into three theoretically grounded indicants of learning. This accentuated facets of learning that were often neglected due to emphasis on a restricted set of criteria that caused both omission and inappropriate clustering of various outcomes. Further elucidation of learning criteria prevents the use of a constrained notion of learning that fails to capture adequately a complex training program and a rich learning experience.

The first set—cognitive learning outcomes—capture aspects of learning that include declarative knowledge and cognitive strategy. Declarative knowledge can be demonstrated via paper-and-pencil tests; includes facts, information, and understanding of training content; and is essential for higher-order learning. Cognitive strategy refers to such processes as metacognition, which includes self-regulation, monitoring, and self-assessment. Metacognition aids learning and is the mechanism through which individuals monitor progress, identify successes and failures, and adjust strategies to benefit maximally from the experience (Ford et al., 1998). Ford et al. (1998) reported metacognition as significantly related to post-training learning, performance, and self-efficacy. In corroboration, Schmidt and Ford (2003) reported metacognition to be a significant predictor of cognitive, skill-based, and affective learning outcomes even after controlling for ability and experience.

The second learning criteria component offered by Kraiger et al. (1993) is skill-based learning outcomes. Researchers frequently refer to skill-based outcomes as post-training performance, and measure these outcomes several ways including behavior-based assessments and skill-based proficiency tests. The more advanced trainee exhibits fluid, seemingly automatic performance that is relatively free from error. Conversely, the less advanced trainee is privy to err and likely to perform poorer on skill-based proficiency tests.

The third learning dimension is affective learning outcomes. According to Kraiger et al. (1993), affective learning is a training outcome because “attitudes can determine behavior or performance. ... [and] because motivation is also an internal state that affects behavior” (p. 318). Gagné (1984) theorized that assessing learning only at the behavioral level was

restrictive and that attitudinal and motivational outcomes should be included. Two oft-studied attitudinal and motivational learning outcomes are self-efficacy and goal setting.

Self-efficacy influences choice of activity, effort, persistence, and task performance (Bandura, 1977). Research has shown that the learning outcome of self-efficacy is a viable predictor of training transfer and skill maintenance (e.g., Ford et al., 1998). Salas and Cannon-Bowers (2001) asserted that self-efficacy consistently leads to better learning and performance; and Schwoerer et al. (2005) emphasized its relevance before, during, and after training. Locke and Latham (1990) demonstrated the importance of specific and difficult goals, and asserted that these goals motivate behavior by influencing direction, arousal, and persistence of effort. Further, Mesmer-Magnus and Viswesvaran (2007) reported that goal setting cultivated transfer intentions, and concluded that goals led to high learning outcomes and thus improved not only performance but also the potential that knowledge and skills transferred to the job. Therefore, attitudinal and motivational outcomes are not only important in and of themselves, but they also influence learning, performance, and transfer.

I expect a positive relationship between CSE and all three dimensions of learning outcomes (cognitive, skill-based, and affective). Firstly, a trainee with high CSE is apt to approach training with a mastery approach, to learn the content as a means of internalizing the knowledge and skills. Secondly, high CSE trainees are likely to deem themselves capable of performing well (G-SE and self-esteem), believe in their agency to influence outcomes (internal LOC), and therefore exert motivation and effort. Thirdly, those with high CSE are likely to set challenging goals, and be committed to their goals (this was evinced by Erez & Judge, 2001, in both laboratory and work setting). Fourthly, high CSE trainees are

likely to engage in metacognitive strategy (e.g., planning and self-monitoring) to ensure success. Low CSE trainees will tend to view training negatively, deem outcomes to be out of their control and unmanageable, and conclude their efforts are futile. These self-referenced appraisals are a function of low emotional stability (tendency to seek negativity), external LOC (not believing in one's agency), and low G-SE (not believing the task is manageable). Fifthly, high-level learning and performance is consistent with the high self-regard seen in those with high CSE, and any discrepancies should serve as motivation to intensify effort to achieve a level of learning and performance that matches those high standards.

Hypothesis 2: Core self-evaluations is positively related to cognitive learning outcomes as measured by (a) metacognition, and (b) end-of-course grades.

Hypothesis 3: Core self-evaluations is positively related to skill-based learning outcomes as measured by (a) reading proficiency scores, and (b) listening proficiency scores.

Finally, “insomuch as self-efficacy beliefs have to do with a person’s confidence about her capability to perform a particular task in a particular context, then deliberate training for that task-in-context ought to increase the strength of self-efficacy beliefs” (Pinder, 2008, p. 367). CSE manifests in the tendency to possess confidence in cross-situational capabilities (G-SE). Training should serve to bolster self-efficacy beliefs for those with high CSE, as they are likely to engage, exert persistent effort, and glean more from the experience. Indeed, Schwoerer et al. (2005) demonstrated in a training setting that G-SE significantly influenced changes in specific self-efficacy from Time 1 to Time 2, suggesting CSE has a dispositional influence on post-training perceptions of program-specific efficacy. Erez and Judge (2001) found CSE was correlated with goal setting, and

this finding should generalize to the training setting. Not only are high CSE trainees more likely to engage in goal setting, but also more likely to set challenging goals reflective of the high standards that are consistent with their esteemed self-regard and concordant with their values and interests.

Hypothesis 4: Core self-evaluations is positively related to affective learning outcomes as measured by (a) self-efficacy, and (b) goal setting.

CSE and Level 3 (Behavior). Kirkpatrick's (1976) third level refers to skill maintenance, transfer of training, and behaviors exhibited in the actual work context. It is important to emphasize the distinction between behavior criteria (Level 3) and learning criteria (Level 2). Learning represents the *acquisition* of behaviors, whereas transfer represents the *application* of behaviors. Differentiating between behavioral-based learning outcomes and on-the-job behavior outcomes is critical in training evaluation.

An important aspect of behavior criteria, and transfer of training in general, is the attitudinal and motivational intentions of the trainee to commit to and implement learned material. Machin and Fogarty (2004) alleged training-relevant implementation intentions are likely to influence the likelihood of using transfer enhancement procedures such as goal setting, skill practice, and searching for opportunities to demonstrate skills acquired during training. Further, the authors posit that intentions are instrumental in making salient aspects of the environment that are relevant to transfer. Without intention to transfer, trainees will lack motivation to use what they have learned and lack participation in strategies that foster higher transfer (e.g., skill maintenance and actively seeking opportunities to apply skills). As

noted in Smith, Jayasuriya, Caputi, and Hammer (2008), though transfer is an important outcome that requires measurement in the workplace, intentions to transfer is a useful proxy.

Erez and Judge (2001) found CSE predictive of goal setting and goal commitment. This commitment to self-set goals implies increased maintenance for trained knowledge and skills, and that goals will continue to motivate individuals past the confines of training. This is due to the trainee internalizing the training, finding utility in the training, and desiring to sustain standards and high self-regard. This should result in enhanced motivation to transfer and intentions to transfer. In addition to motivation and intention, the trainee should show higher levels of efficacy, which influences engagement in trained knowledge and skills when back in the work setting. Thus, CSE should not only influence *acquisition* of training material, but should also influence the *application* of trained material (i.e., Level 3).

Hypothesis 5: Core self-evaluations is positively related to transfer behavior as measured by (a) intentions to transfer, and (b) motivation to transfer.

Level 4 (Results). Results in Kirkpatrick's (1976) taxonomy refer to organizational outcomes and objectives such as productivity, turnover, costs, and absenteeism. Despite the importance of these training criteria, it is beyond the scope of this study to address them.

Method

Sample and Procedures

The data for this study consisted of responses from approximately 446 military personnel who participated in foreign language acquisition training. The actual sample size for the analyses ranged from 120–446 due to missing data. I opted for pairwise deletion—as opposed to listwise deletion—in order to avoid losing available data. This allowed me to

avoid substantial loss in power and to avoid throwing out trainees as a result of a small amount of missing data. The military organization that provided the training required language acquisition training for every member and offered pay incentives for those that scored above a pre-established cutoff. Trainees comprised different cohorts based upon when they entered training. The present study examined two independent cohorts—Cohort A and Cohort B—that were comprised of 249 (56%) and 197 (44%) trainees, respectively. There were 10 different target languages, and the military organization placed a trainee in his or her respective language at random. There is nothing to suggest that individuals contained within the different cohorts or within the different languages should vary significantly from each other. Students in the training were predominately male, and ranged in age from 18 to 44 years ($M = 27.1$, $SD = 4.4$).

At the beginning of the training program, each trainee filled out a pre-training survey that assessed multiple constructs, which included CSE and training motivation. Trainees then entered standardized foreign language acquisition training, which lasted approximately 4–6 months and aimed at developing proficiency in the target language. Throughout the training, trainees were assessed with content-relevant quizzes and module tests that the instructor scored. Each trainee received an end-of-course grade calculated from these quizzes and tests. At the end of training, each trainee completed a post-training questionnaire that assessed multiple constructs. Among the constructs measured at this time were reactions to training, post-training self-efficacy (affective learning outcome), goal setting (affective learning outcome), metacognitive activity (cognitive learning outcome), intentions to transfer (behavior outcome), and motivation to transfer (behavior outcome). In addition to the post-

training surveys, trainees completed aptitude tests to assess their foreign language listening and reading proficiency. These tests consisted of two components of the Defense Language Proficiency Test (DLPT-Reading and DLPT-Listening; skill-based learning outcomes).

Measures

Core self-evaluations. I measured CSE (see Appendix B) using the Core Self-Evaluations Scale (CSES; Judge et al., 2003). This is a 12-item instrument, half being reverse-scored. CSES used a 5-point Likert-type agreement scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with a neutral point in the middle (*neither disagree nor agree*). Example items include, “When I try, I generally succeed,” and “I do not feel in control of my success in my career.” This measure is as an alternative to the indirect method of assessing CSE, which involves aggregating responses on the four individual scales (i.e., G-SE, emotional stability, LOC, and self-esteem) to form a composite. Internal consistency reliability was sufficiently high ($\alpha = .89$) for the CSES in this study.

Reactions criteria (Level 1). I assessed *affective training reactions* (see Appendix C) with eight items that tap the trainees’ overall satisfaction and enjoyment with the training. The scale used a 5-point Likert-type format that ranged from 1 (*dissatisfied*) to 5 (*satisfied*), with a neutral point in the middle (*neither dissatisfied nor satisfied*). The scale consisted of an item stem (“How satisfied are you with each of the following?”), followed by items such as, “Overall effectiveness of the instructor,” and “Classroom’s physical environment (e.g., temperature, lighting, etc.)” Affective reactions showed unidimensionality and sufficient reliability ($\alpha = .85$) in this study.

Utility reactions (see Appendix D and Appendix E) tap whether trainees perceived the training as useful and relevant. The utility items involved content such as whether the training was applicable to their jobs, and whether training was successful in distilling relevant knowledge and skills. Participants responded to four items on a 7-point Likert-type agreement scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), including a neutral middle point (*neither disagree nor agree*). Participants responded to three additional items on a 5-point Likert-type satisfaction scale ranging from 1 (*dissatisfied*) to 5 (*satisfied*), with a neutral point in the middle (*neither dissatisfied nor satisfied*). Both utility reactions measures were unidimensional with sufficient internal consistency ($\alpha = .94$ and $\alpha = .85$, respectively).

Cognitive learning criteria (Level 2). *Metacognitive activity* (see Appendix E) was measured with nine items derived from a scale used by Ford et al. (1998), and also by Schmidt and Ford (2003). This measure consisted of a Likert-type agreement scale with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), including a neutral middle point (*neither disagree nor agree*). The scale consisted of an item stem (“From the midpoint of training through the end of training...”), followed by a series of statements about trainees’ engagement in metacognitive activities such as, “I set goals for myself in order to direct my learning activities,” and “I noticed where I made mistakes and focused on improving those areas.” The scale showed sufficient internal consistency ($\alpha = .92$).

End-of-course grade ($M = 87.5$, $SD = 6.0$) was calculated using weekly quizzes and three to five module tests that were administered throughout the training. These paper-and-pencil tests tapped the declarative knowledge that trainees had acquired up to the point of each administration, and covered both listening and reading.

Skill-based learning criteria (Level 2). The knowledge and skills trained in this context concerned target language proficiency. I used a standard instrument designed by the Defense Language Institute (DLI) to assess this learning outcome. The Defense Language Proficiency Test (DLPT) consists of two sections: listening and reading. These tests tapped the language skill proficiencies that trainees acquired during training. The scoring rubric is identical for both sections of the DLPT; a trainee's score fell into one of seven proficiencies (0, 0+, 1, 1+, 2, 2+, and 3), a higher score denoted greater proficiency. Specific psychometric information is not available, but individuals with expertise in training-relevant linguistics and psychometrics developed the DLPTs according to well-defined assessment criteria; and they are used in high-stakes testing by the United States Department of Defense (DoD).

Affective learning criteria (Level 2). *Post-training self-efficacy* (see Appendix F) was measured with a scale developed specifically for the purposes of this training. The scale taps one's confidence in his or her ability to perform successfully on specific tasks identified as critical by subject matter experts (SMEs), evaluators, incumbents, and knowledgeable experts in the field. The scale consisted of eight items that range from 1 (*strongly disagree*) to 7 (*strongly agree*), including a neutral point (*neither disagree nor agree*). A stem preceded the scale ("In the language being trained, I am confident in my current ability to..."), and is followed by items that include, "Discuss local weather," and "Discuss operational terminology." The scale showed sufficient internal consistency reliability ($\alpha = .92$). *Goal setting* (see Appendix G) was measured by personal goals trainees set at the end of training. Two items captured trainees' self-set goals, in which they indicated (a) personal

goal for listening proficiency at the end of training and (b) personal goal for speaking proficiency at the end of training. The proficiency scale corresponded with the systematic scoring of DLPT tests (0+, 1, 1+, 2, 2+, and 3).

Behavior criteria (Level 3). I measured behavior outcomes using both transfer intentions and transfer motivation. Machin and Fogarty (2004) asserted that relevant transfer intentions likely consist of intentions to use transfer enhancement procedures such as goal setting, practicing skills learned in training, and seeking opportunities to demonstrate skills learned during training. *Motivation to transfer* (see Appendix H) consisted of seven items, and used a likelihood scale format. A stem was presented (“Please estimate the likelihood that you will...”), followed by response options that ranged from 0% to 100%, with 10% gradients (11 response options total). Example items include, “Improve your language proficiency,” and “Volunteer for mission tasks that require language skills.” The scale demonstrated unidimensionality and sufficient reliability ($\alpha = .94$).

Intentions to transfer measure (see Appendix I) consisted of four items, and used a Likert-type agreement scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with a neutral point (*neither disagree nor agree*). Example items include, “I intend to volunteer for duties where I can practice and use my language skills,” and “I intend to use the language skills that I learned during training on deployments in my AOR where this language is used.” This scale demonstrated unidimensionality and sufficient internal consistency ($\alpha = .90$).

Language difficulty. Studies must account for content difficulty when measuring and meaningfully comparing differences in training criteria. Content difficulty in this training context is the pre-established levels of difficulty with which non-native speakers

learn the various languages. The present study used a 4-level scale used by military organizations and other government agencies to categorize language difficulty. The operationalization is the difficulty of a native English speaker to learn the targeted language (Silva & White, 1993). Each language resides in one of four categories, with higher categories denoting higher difficulties (e.g., Category IV represents the highest level of difficulty). Examples of the four categories reflected in this study include Spanish (Category I), Indonesian (Category II), Russian (Category III), and Modern Standard Arabic (Category IV). I controlled for language difficulty in order to ensure that the influence of CSE on training outcomes was attributable to its inherent variability rather than to variability in a confounding or alternative variable (i.e., language difficulty). The data included 151 Cat I trainees (34.0%), 47 Cat II trainees (10.4%), 128 Cat III trainees (28.7%), and 120 Cat IV trainees (26.9%).

Cognitive ability. Cognitive ability is a commonly used gauge for measuring individuals and is one of the most well validated predictors of desired work outcomes, including training criteria (Alvarez, Salas, & Garofano, 2004). Cognitive ability measures for this study consisted of scores on the Armed Forces Qualification Test (AFQT). The AFQT is an overall score computed from four areas of the Armed Services Vocational Aptitude Battery (ASVAB): (a) Word Knowledge, (b) Paragraph Comprehension, (c) Arithmetic Reasoning, and (d) Mathematics Knowledge.

Training motivation. Training motivation is an oft-cited predictor of effective training outcomes (e.g., Alvarez et al., 2004; Tziner, Fisher, Senior, & Weisberg, 2007), and is defined as “the direction, intensity, and persistence of learning-directed behavior in

training contexts” (Colquitt et al., 2000, p. 678). I assessed training motivation at the beginning of training via self-report (see Appendix J). The scale consisted of seven items that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*), with a neutral point (*neither disagree nor agree*). The content of the scale tapped the trainees’ motivation to participate in the training experience, acquire language skills, and master the training content. Example items include, “I am motivated to learn the language I have been assigned,” and “I am motivated to perform well in language training.” The scale showed unidimensionality and sufficient internal consistency ($\alpha = .82$).

Results

Descriptive Statistics and Zero-order Correlations

The first step in the analysis was to examine the descriptive statistics and intercorrelations amongst study variables. In Table 1, I present means, standard deviations, and zero-order correlations, along with scale reliabilities (coefficient α) where appropriate. Even prior to statistically controlling for language difficulty, there is interesting information amid the intercorrelations. Firstly, the control variable (i.e., language difficulty) is negatively correlated with nearly all of the variables, as expected. Namely, as the level of language difficulty escalated, so too did the undesirable manifestation of the training criterion coupled with it. Thus, trainees that went through training that was more difficult reported it to be less satisfying, practical, and useful; reported lower self-efficacy and personal goals; reported lower transfer intentions and motivation; and, scored lower on the proficiency tests. Secondly, the affective reactions and two utility reactions measures demonstrated comparable patterns of correlations with other training criteria, the majority of which were

positive and significant at $p < .01$. This, at least initially, supports the practicality of both forms of reactions. Thirdly, the positive intercorrelations among the three training levels are noteworthy. Past research provides mixed findings regarding the interrelatedness of Kirkpatrick's (1976) four levels. According to the initial findings, all levels appear to be significantly and positively related (not including Level 4, which was not examined). Lastly, CSE initially seems to relate positively to self-regulatory mechanisms and motivational mechanisms, but does not seem to relate to the objective learning and performance criteria.

CSE and Training Criteria

To address the research hypotheses in a more refined manner, I used hierarchical regression analyses to examine the relationship between CSE and the various training criteria. The analysis consisted of regressing each of the training outcome variables on CSE, while statistically controlling for the effects of language difficulty. Thus, language difficulty was entered in the first block of the regression and CSE was entered in the second block, with the given training outcome variable as the dependent variable. I present the results of the hierarchical regression analysis in Table 2. As expected, language difficulty explained a significant portion of the variance for a majority of the 12 variables. The two exceptions were end-of-course grades and metacognitive activity, which were the two cognitive learning outcomes (Level 2). Further, all relationships were negatively impacted by increases in language difficulty. Thus, as the difficulty of the language acquisition training increased, desirable training outcomes decreased (excepting the cognitive learning outcomes). The standardized regression coefficient for the language difficulty variable, which reflects its unique contribution to the explanation of the total variance in the dependent variable, ranged

from $\beta = -.21$ ($p = .007$) to $\beta = -.40$ ($p < .001$); which is a magnitude indicative of statistical *and* practical significance.

The next step was to investigate whether CSE accounted for variance beyond the statistically controlled language difficulty variable. A significant ΔR^2 value indicates that CSE predicts variance in the training outcome above and beyond that accounted for by the variable entered in the first step (i.e., language difficulty). Hypothesis 1 concerned CSE's prediction of training reactions (Level 1). CSE did not account for variance in affective training reactions beyond that of language difficulty. However, CSE did predict above and beyond language difficulty for both the 4-item measure of utility reactions ($\Delta R^2 = .04$; $p = .005$) and the 3-item measure of utility reactions ($\Delta R^2 = .02$; $p = .049$). CSE demonstrated disparate influence on the two reactions types; thus, results partially support Hypothesis 1.

The next three hypotheses addressed whether CSE predicted variance in Level 2 learning outcomes (cognitive, skill-based, and affective), while statistically controlling for language difficulty. The cognitive learning outcomes measured in this study (metacognition and end-of-course grade) were the only two learning outcomes that were uninfluenced by language difficulty. Metacognition was significantly predicted by CSE ($\Delta R^2 = .05$; $p < .001$), though. End-of-course grades, on the other hand, were predicted by neither language difficulty nor CSE. Thus, results partially support Hypothesis 2 because CSE significantly predicted one of the two cognitive learning outcomes.

Variance in skill-based learning outcomes—as indicated by objective measures of listening and reading proficiency—was accounted for by language difficulty. The finding that increased training difficulty was accompanied by poorer performance on proficiency

assessments was not surprising (expecting an individual with the target language of Chinese-Mandarin to acquire the same level of proficiency as an individual with the target language of Spanish is unrealistic). However, CSE did not account for additional variance beyond that of language difficulty for either proficiency measure. Thus, Hypothesis 3, which predicted CSE would influence skill-based listening and reading proficiency, was not supported.

Affective learning represents the third type of learning outcome, and was assessed with post-training self-efficacy and two measures of goal setting. Despite language difficulty accounting for a significant portion of the variance in each of these three outcomes, CSE still predicted above and beyond language difficulty for post-training self-efficacy ($\Delta R^2 = .06$; $p < .001$), listening proficiency goal setting ($\Delta R^2 = .03$; $p = .016$), and reading proficiency goal setting ($\Delta R^2 = .03$; $p = .015$). Thus, Hypothesis 4 was supported, as CSE demonstrated influence over each of the affective learning outcomes, controlling for language difficulty.

The final hypothesis (Hypothesis 5) concerned CSE's ability to predict variance in two proxies for Level 3 behavior outcomes, while statistically controlling for language difficulty. In the absence of actual transfer data, I employed measures for transfer intentions and transfer motivation. Despite language difficulty accounting for a significant portion of the variance in both outcomes, CSE accounted for variance above and beyond for intentions to transfer ($\Delta R^2 = .10$; $p < .001$) and motivation to transfer ($\Delta R^2 = .03$; $p = .021$). Thus, Hypothesis 5 was supported, as CSE significantly predicted each of the transfer proxies while controlling for language difficulty.

Incremental Validity over Cognitive Ability and Training Motivation

The next set of hierarchical multiple regressions examined the incremental validity of CSE over cognitive ability and training motivation (controlling for language difficulty). If CSE accounts for variance in training outcomes beyond that attributable to these two oft-cited predictors (e.g., Alvarez et al., 2004), then this further evinces the utility of the dispositional construct. I entered language difficulty into the first block of the regression, and then entered cognitive ability and training motivation into the second block, and entered CSE into the third block. Again, each training outcome served as the dependent variable in these analyses. I present the results in Table 3. I investigated the relationship between CSE and only eight of the training criteria because four were dropped from further analyses for not having variance explained by CSE in the initial regressions. The initial regressions addressed the study's hypotheses and this subsequent analysis was exploratory, absent expectations as to whether CSE would predict variance incremental to that of two established predictors of numerous training outcomes (Alvarez et al., 2004).

A significant ΔR^2 value indicates that CSE predicts variance in the given training outcome that is unaccounted for by the variables entered in the first and second steps (i.e., language difficulty, cognitive ability, and training motivation). CSE failed to account for variance beyond that of the controls for three of the eight training outcomes: 4-item measure of utility reactions ($\Delta R^2 = .02$; $p = .056$), 3-item measure of utility reactions ($\Delta R^2 = .01$; $p = .122$), and motivation to transfer ($\Delta R^2 = .02$; $p = .058$). However, two of the aforementioned models were close to statistical significance. Overall, the three-step model accounted for a rather modest amount of variance in the training outcomes (ranged from $R^2 = .06$ to $R^2 = .21$).

Metacognitive activity was the only (of two) cognitive learning outcomes that was tested in this set of analyses (end-of-course grade dropped because of nonsignificance in the initial analysis), and CSE predicted variance incremental to that of cognitive ability and training motivation ($\Delta R^2 = .03$; $p = .003$). CSE also demonstrated incremental validity over these three variables for each of the three affective learning outcomes. CSE accounted for variance in post-training self-efficacy ($\Delta R^2 = .05$; $p < .001$), listening proficiency goal setting ($\Delta R^2 = .02$; $p = .05$), and reading proficiency goal setting ($\Delta R^2 = .03$; $p = .039$) incremental to that explained cognitive ability and training motivation. Finally, the last pair of training outcomes—motivation to transfer and intentions to transfer—were shown by the regressions to be differentially predicted by CSE. CSE explained incremental validity over cognitive ability and training motivation for intentions to transfer ($\Delta R^2 = .06$; $p < .001$), but it did not explain variance beyond that of the controls for motivation to transfer ($\Delta R^2 = .02$; $p = .058$).

Discussion

The purpose of the present study was to investigate the general utility of the higher-order construct of core self-evaluations by examining its predictive validity with outcomes derived from Kirkpatrick's (1976) training criteria taxonomy. Research supports the viability of CSE in various work contexts and with various work-related outcomes, but little to no research to date has explored CSE's relationship with training. Given the importance of dispositional influence and the prevalence of training, it seemed worthwhile to investigate a nascent individual differences construct in a context in which it had not been thoroughly explored by prior research. If CSE accounts for a significant amount of variance in training criteria, then its usefulness as a dispositional predictor would be further substantiated.

Before discussing the relation between CSE and training outcomes, it is noteworthy to reiterate the predication that it would be necessary to statistically control for language difficulty. The only training characteristic unique to this setting was the placement of trainees into four different categories of language difficulty. Despite random assignment, controlling for language difficulty allows me to attribute more rigorously the findings of the study to the dispositional influence of CSE rather than to a potentially confounding language difficulty effect. As expected, the analyses showed that language difficulty adversely influenced nearly all of the training outcome variables. The data indicated that as training difficulty increased, desired training outcomes decreased. This was not only manifested by lessened training learning and performance, but also by lower satisfaction and utility reactions, lower self-efficacy, lower goal setting, lower motivation to transfer, and lower intentions to transfer the material learned in training to the work setting.

The zero-order correlations indicate that failure to control for training difficulty could feasibly lead to misleading results. When assessing the effectiveness of a given training program, the evaluator should take into account the differential levels of difficulty. As obvious as this prescription may seem, it would be rather easy for an evaluator to combine multiple similar training programs together without taking into account the profound impact that training complexity has on different outcomes. Another implication that may not have been so obvious is the finding that difficulty level not only impacted objective performance measures, but it also impacted trainees' affective reactions, utility reactions, self-efficacy, goal setting, and motivation and intentions to transfer. In training settings characterized by higher levels of difficulty, perhaps trainers should allocate more energy toward ancillary

tactics of ensuring that these trainees stay efficacious, motivated, and cognizant of the importance of the training material despite the challenging nature of the content.

Exemplifications of the aforementioned are incentivizing trainees and positively reinforcing successes (and ensuring that successes occur), setting aside time to facilitate a goal setting process, and making salutary outcomes salient—including instrumental means to outcomes.

Two noteworthy findings that were secondary to the main purpose of the study were (a) the patterns of zero-order correlations displayed by affective reactions and utility reactions, and (b) the interrelations among the different training criteria levels. First, the initial findings support the utility of both affective and utility reactions, as both types correlated positively with multiple training outcomes, and at similar magnitudes. This lends credence to Alliger et al.'s (1997) delineation and suggests that measuring one without the other could lead the researcher to neglect valuable information. Second, past research has led to varying opinions regarding the interrelations of Kirkpatrick's (1976) taxonomic 4-level structure. Initial findings from this study support the positive unidirectional interrelatedness among the different training criteria levels. The zero-order correlations demonstrate that as one level of training criteria increases (or decreases) the others do as well. Thus, information about assessment at one level of training criteria—for example, utility reactions—can allow the evaluator to make likelihood assumptions about the nature of other training criteria—for example, motivation to transfer. The functional relationships between CSE and affective and utility reactions are further detailed in subsequent sections, but further examination into the interrelations among training criteria is beyond the realm of this study.

The core query driving this study asked whether CSE was a viable dispositional predictor of various training outcomes. Support, or lack thereof, for Hypotheses 1–5 provided a compilation of specific evidences used to attempt to answer the aforementioned general query. Hypothesis 1 concerned the relationship between CSE and reactions to training. The affective reactions and utility reactions had differential relations with CSE, regardless of controlling for language difficulty. In both cases (with the control and without the control), *affective reactions* were not influenced by an individual’s level of CSE. This is contrary to my expectation that a trainee with high CSE would enter and leave training with a positive outlook, leading to a higher satisfaction with the experience. This indicates that affective reactions are not purely dispositional reflections of an individuals’ general positivity, which corroborates findings from Sitzmann, Brown, Casper, Ely, and Zimmerman (2008) that demonstrated affective reactions were most influenced by characteristics of the training program (e.g., training difficulty and trainer likability) rather than personality. However, both utility reactions measures were significantly and positively influenced by CSE, controlling for language difficulty. Utility reactions seem to be influenced by both characteristics of the training and personal disposition (as evidenced by significant relations with both). These findings suggest that trainees with high CSE are more likely to value the training outcomes and the means to said outcomes. Further, they are more inclined to both perceive of and recall training that is useful and instrumental for attaining valued outcomes.

Hypotheses 2–4 concerned learning criteria, which Kraiger et al. (1993) partitioned into three categories (i.e., cognitive, skill-based, and affective). Hypothesis 2 forecasted CSE to account for variance in cognitive learning outcomes of metacognition and end-of-course

grades. The results provide partial support, as CSE accounted for significant variance in metacognitive activity, but not in end-of-course grades. People are “likely to take on tasks, set goals, alter goals, and attempt to master their environments if they positively assess their own capabilities” (Pinder, 2008, p. 461). Individuals with high CSE have an elevated sense of competence and self-worth and therefore engage in the activities mentioned by Pinder (2008), each of which indicates self-regulation and metacognitive activity. Those with high CSE expect to do well, effectively monitor successes and failures, make adjustments in strategy, and strive to maintain their high standards and positive self-image. In terms of the objective measure of end-of-course grade, CSE did not predict this outcome. This was the first of a series of objective measures not predicted by the dispositional measure of CSE. I will recapitulate this set of findings as they surface in ensuing sections.

Hypothesis 3 was concerned with skill-based learning criteria, and predicted that CSE would account for variance in trainees’ post-training proficiency scores. Contrariwise, CSE predicted neither listening nor reading proficiency. This finding added a second and third objective measure—in addition to end-of-course grade—left unaccounted for by CSE. The reason for this seemingly inexistent relationship between an individual’s fundamental appraisal of his or her competence and worth, and his or her objective demonstration of learning and performance is unclear. This not only contradicts findings demonstrating CSE predicting job performance and other objective performance criteria (e.g., Judge & Bono, 2001; Judge et al., 2003), but also opposes past research linking self-evaluative traits (e.g., self-efficacy, G-SE, LOC) to training learning and performance (e.g., Bradley & Nicol, 2006; Salas & Cannon-Bowers, 2001). Because this seems to go against the conclusions of past

research, I am hesitant to make the inference that the null findings are indicative of CSE's general influence on knowledge and skill-based training outcomes, so this relationship should be further explored in future studies.

Hypothesis 4 concerned the last of the learning criteria, affective learning outcomes. I measured two forms of affective learning outcomes: post-training self-efficacy and goal setting. I hypothesized that CSE would positively relate to each of the measures, and this supposition was fully supported. First, CSE explained variance in post-training self-efficacy while statistically controlling for language difficulty, which was not surprising partly because of the generalized trait version of self-efficacy (G-SE) being a direct indicator of CSE. This finding corroborates Schwoerer et al.'s (2005) finding that pre-training G-SE significantly influenced changes in specific self-efficacy from Time 1 to Time 2, and lends support to CSE being manifested in the general tendency to possess confidence in one's capabilities across diverse domains. Higher levels of CSE lead to higher levels of post-training self-perceived competence. Perhaps these individuals are better able to internalize the content of instruction and transform that into usable knowledge and skills. This finding supports the utility of CSE because self-efficacy is important before, during, and after training (Salas & Cannon-Bowers, 2001), and is significantly related to other desirable training outcomes (Gist & Mitchell, 1992).

Also conferred was support for CSE's relation to the other affective learning outcome: goal setting. The ability for CSE to predict variance in goal setting, while statistically controlling for language difficulty further evinced CSE's dispositional source of motivation and self-regulation. CSE has consistently shown predictive validity with goal

setting in multiple contexts (e.g., Erez & Judge, 2001; Judge, Bono et al., 2005), but until this study had not been examined in the training setting. This adds evidence for the generalizability of past research demonstrating CSE's correlations with goal setting, goal self-concordance, and goal commitment. It appears that high CSE trainees are more apt to set goals that align with their values and interests, and goals that are challenging—in accord with their heightened standards and self-regard. Furthermore, they are more motivated to commit to these goals because they are intrinsically appealing and because attainment sustains their self-image. CSE's impact on goal setting is important because goal setting has consistently related to motivation and performance (Locke & Latham, 1990; Locke et al., 1988).

It is noteworthy to reiterate that, for learning criteria overall, the general trend in this set of findings was that CSE demonstrated predictive validity for affective, self-regulatory, and motivational learning outcomes, but not for objective measures of learning from training and performance. CSE predicted metacognition, post-training self-efficacy, and goal setting controlling for language difficulty. In fact, CSE not only predicted the former three outcomes, but explained variance incremental to that of cognitive ability and training motivation (despite the three-step model accounting for a rather modest amount of total variance in the training outcomes). However, CSE was unable to predict variance in end-of-course grades, DLPT listening, and DLPT reading scores. It is slightly perplexing that CSE accounted for variance above and beyond that of well established predictors for certain learning outcomes, but did not explain any variance in others. This finding is not entirely

clear, and future research should further investigate the impact of CSE on training performance, particularly objective measures of performance.

The final hypothesis (Hypothesis 5) focused on transfer of training. I used two proxies to assess this level: (a) intentions to transfer and (b) motivation to transfer. CSE accounted for significant variance in both measures, controlling for language difficulty. Furthermore, CSE significantly predicted variance in intentions to transfer incremental to that of cognitive ability and training motivation. This finding was not surprising because I expect individuals with high CSE to have the intention of, and motivation to, use and maintain post-training levels of proficiency. Further, those with high CSE set goals that are more difficult (consistent with their high self-regard), more aligned with enduring values and interests (goal self-concordance), and are thus more committed to the attainment of said goals. This leads to goal pursuit, which makes knowledge and skill transfer instrumental in goal attainment, thus increasing intentions and motivation to transfer. This finding is consistent with other findings in this study, that CSE significantly predicts motivational and attitudinal measures (e.g., metacognition, self-efficacy, goal setting). This finding is also consistent with CSE's predictive validity with utility reactions. If an individual views the training as practical and useful (i.e., high utility reactions), then he or she is more likely to be motivated to utilize knowledge and skills gained from the experience. Those with high CSE are more likely to exit training with the intentions and motivation to utilize training content in their daily work environment. If training does not transfer to the job, then its usefulness is limited. Knowing motivational antecedents to transfer is important for research and practice, as both motivation to learn and transfer motivation have been shown to be predictors of positive training

outcomes and greater training effectiveness (e.g., Cannon-Bowers, Salas, Tannenbaum, & Mathieu, 1995; Mathieu, Tannenbaum, & Salas, 1992). Thus, individual differences in CSE are important to assess when designing or implementing training due predictive validity with transfer motivation and intentions, and subsequent impact on overall training effectiveness.

Limitations and Future Research

No study is without limitations, and this was no exception. These first limitations are of a methodological nature. External validity inferences and the generalizability of the findings to the general population should be made with caution. The sample was a rather homogenous group of individuals that were training to become elite military personnel. It may be overly optimistic to assume that the characteristics of these individuals are fully representative of the general population. However, the mechanisms through which CSE work should not be specific to this sample, and the general implications that CSE has for training is important nonetheless. Furthermore, past research on the individual indicators of CSE and training outcomes using military samples have supported their generalizability (e.g., Noe, 1986). It would be fruitful, however, for future research to investigate CSE's relation to training outcomes in additional training settings. Language acquisition training within the military is a specific training context and exploring similar research questions in different settings and with different samples would serve to increase cross-situational validity and transportability. Training is a multifarious endeavor that consists of very diverse contexts; thus, cross-validation in multiple settings would be informative.

A limitation related to the previous is the presence of range restriction in the data. Homogeneity due to certain characteristics of the sample led to universally high levels of

CSE. Again, the sample was elite military personnel that possessed generally high levels of confidence about their capabilities. The mean scale score for CSE was 4.04 (maximum of 5), and the standard deviation was 0.51. This high average score and low variance may have led to ceiling effects, and may have confined the variance in the predictor to a smaller portion of the construct's latent continuum. Less variability results in truncated correlations that are likely to be underestimated, and the actual relationships between the predictor and criteria may be more pronounced than what was indicated by the data. Future research should attempt to replicate this study with a more normally distributed population. Further, future research should examine whether the CSES garners data throughout the general population that conforms to the normal distribution, and whether different response formats (e.g., seven response options instead of five) are better able to capture variance in CSE.

The next methodological limitation was the inability to avoid same-source data. Having the same individuals provide data for both the predictor and the criterion contributes to the plausibility of common-source bias, and this may have led to inflated correlations. Research demonstrates that self-ratings are generally confined to a smaller portion of the construct continuum than other-ratings and are therefore less variable (Scullen, Mount, & Judge, 2003). This is a potential problem with the reactions data (Level 1), cognitive learning outcome of metacognition (Level 2), affective learning outcomes of goal setting and self-efficacy (Level 2), and intentions and motivation to transfer (Level 3). However, this was not a problem with cognitive ability, end-of-course grade, or the DLPT proficiency test scores. Several aspects of the present study mitigate this possible bias. First, the time interval (18–24 weeks) between self-report on the predictor (i.e., CSE) and self-report on the

criteria was substantial enough to infer that responding on the former should have little to no impact on responding on the latter. Second, the constructs under investigation differ enough to assume small carry-over from one type of scale to the other. Lastly, there is reason to believe that the military personnel are sufficiently motivated to complete the measures with vigilance and objectivity. That said, the CSE and training literature would benefit from future research that replicates this study using multiple sources, and relying less on same-source data.

The previous call for research segues into the next limitation, because it has to do with the choice of measures. I used the proxies *intentions to transfer* and *motivation to transfer* instead of an actual Level 3 transfer outcome. This limits inferences made about CSE and Level 3 outcomes, and alters the interpretability of the findings. However, research does demonstrate the usefulness of these proxies (Machin & Fogarty, 2004), and supports the relation between them and actual transfer (Smith et al., 2008). So, although these measures are not perfect indicators of actual transfer, the results of CSE's affects on transfer—as measured in the present study by intentions and motivation—are meaningful nonetheless. It is still important that readers interpret these results with this limitation in mind. A fruitful call for future research is to investigate the impact of CSE on actual training transferred to the job. CSE predicting transfer motivation and intentions are noteworthy, but evidence of its prediction of actual Level 3 behavior would add substantially to the utility of the construct.

One appropriate area of future research is to test CSE's relationship with Kirkpatrick's (1976) Level 4 results criteria. The study of distal organizational outcomes

such as company profit margins and turnover were beyond the scope of this study and were not investigated. However, Level 4 results are of certain interest and future research should look into CSE's relationship with this criteria. There are obvious benefits to knowing if, for example, individuals with high CSE are less likely to turnover as a result of training, or if a given organization is likely to increase profit due to training high CSE individuals. Further, along these lines, one could do a utility analysis to estimate the impact that CSE's relation to training outcomes has on an organization. There are many potential areas for research here, as CSE and Level 4 results criteria have yet to be examined together.

There is a multitude of areas for future research other than those mentioned to this point. One such area would be to compare CSE to other dispositional traits and taxonomies, such as the Five-Factor Model of personality (Costa & McCrae 1992), goal orientation, and dispositional affectivity in the context of training. This has been done with work criteria such as job performance and job satisfaction (Judge et al., 2003), but not with training. If CSE is able to explain variance unaccounted for by other dispositional predictors then that would support its utility as a dispositional trainee characteristic. A final area for future research would be to investigate the relation of the CSES to the shared variance of the individual instruments for each trait indicator. Researchers have examined this in work settings with supportive results, but have not done so in the training context. I used the 12-item CSES in lieu of four separate measures (one for each of the indicators), but if one were to use both measures and compare the results, then this would provide useful information. If, in a training setting, the CSES demonstrates incremental validity over an optimally weighted

composite of the four indicator scales then it should merit further recognition as an instrument capable of rendering valid and reliable inferences.

Conclusion

Motivational decisions have a dispositional source that influences the creation of self-set goals, assessments of situations, interpretations of situations, and reactions to these interpretations (Herold et al., 2002). These dispositional antecedents are important to understand, and CSE could represent a valuable dispositional driver of important work outcomes. In sum, research supports the utility of CSE as a broad dispositional predictor that has considerable merit in numerous work contexts. In the current study, CSE significantly predicted training outcomes from each of the three levels of training criteria that I examined. Those with high CSE were better able to identify the training as practical and useful, engaged in higher levels of metacognitive activity, experienced higher levels of self-efficacy, set goals that were more difficult, and had higher intentions and motivation to transfer the training to the job setting. Further, CSE predicted variance in a majority of the aforementioned training outcomes incremental to that of cognitive ability and training motivation. This is evidence that CSE offers unique and important information for prediction in the training context. Predominant personality typologies, traits, and established predictors are important for training research and practice, and this relatively new construct, CSE, may predict variance in training outcomes unaccounted for by predecessors. Ultimately, this study evinces CSE's positive relationship with multiple training outcomes, and further substantiates claims made by practitioners and members of the research community that advocate for the general utility

of CSE and for the potential value of CSE as a viable dispositional construct in numerous work settings.

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Table 1
Descriptive Statistics, Reliabilities, and Zero-Order Correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Core self-evaluations	4.04	.51	(.89)															
Training motivation	6.20	.73	.33**	(.82)														
Cognitive ability	229.65	20.57	-.04	-.08	—													
Affective Reactions	3.28	.92	.11	.08	-.19*	(.85)												
Utility Reactions (4)	5.13	1.41	.23**	.26**	-.27**	.51**	(.94)											
Utility Reactions (3)	3.67	.99	.17*	.14	-.14	.81**	.58**	(.85)										
Metacognition	5.88	.69	.22**	.14*	-.06	.10	.06	.08	(.92)									
Course Grade	87.54	6.00	.08	.11*	.11*	.41**	.34**	.47**	.03	—								
DLPT-Listening	3.44	1.55	.08	.10*	-.08	.49**	.37**	.53**	.03	.52**	—							
DLPT-Reading	4.01	1.52	.03	.11*	.03	.49**	.35**	.49**	-.03	.54**	.71**	—						
Post-training self-efficacy	5.20	1.04	.25**	.13*	-.12*	.42**	.67**	.53**	.21**	.33**	.34**	.25**	(.92)					
Goal-Listening	3.77	1.47	.20*	.16	-.19*	.34**	.38**	.37**	-.01	.36**	.52**	.37**	.36**	—				
Goal-Reading	3.90	1.47	.20*	.13	-.17*	.38**	.40**	.42**	.01	.39**	.55**	.41**	.40**	.96**	—			
Intentions to transfer	5.84	.92	.33**	.27**	-.12	.40**	.66**	.48**	.19*	.33**	.37**	.29**	.40**	.45**	.46**	(.90)		
Motivation to transfer	8.98	2.12	.19*	.14	-.16*	.29**	.40**	.37**	.10	.29**	.33**	.26**	.27**	.39**	.41**	.69**	(.94)	
Language difficulty	2.49	1.21	-.05	-.08	.36**	-.31**	-.34**	-.34**	-.07	-.06	-.40**	-.33**	-.22**	-.30**	-.34**	-.23**	-.22**	—

Note. $n = 120\text{--}446$. The parenthetic values on the diagonal are the scale reliabilities (coefficient α).

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

Table 2
CSE and Training Outcomes

Variable	R^2	ΔR^2	β^a	df
Affective reactions				
Step 1: Language difficulty	.10**	.10**	-.31**	153
Step 2: Core self-evaluations	.11	.01	.10	152
Utility reactions (7-point)				
Step 1: Language difficulty	.12**	.12**	-.33**	152
Step 2: Core self-evaluations	.16**	.04**	.21**	151
Utility reactions (5-point)				
Step 1: Language difficulty	.12**	.12**	-.34**	154
Step 2: Core self-evaluations	.14*	.02*	.15*	153
Metacognition				
Step 1: Language difficulty	.01	.01	-.06	270
Step 2: Core self-evaluations	.05**	.05**	.22**	269
Course grade				
Step 1: Language difficulty	.00	.00	-.05	382
Step 2: Core self-evaluations	.01	.01	.07	381
DLPT-Listening				
Step 1: Language difficulty	.16**	.16**	-.40**	363
Step 2: Core self-evaluations	.16	.00	.06	362
DLPT-Reading				
Step 1: Language difficulty	.11**	.11**	-.33**	363
Step 2: Core self-evaluations	.11	.00	.01	362
Post-training self-efficacy				
Step 1: Language difficulty	.05**	.05**	-.21**	270
Step 2: Core self-evaluations	.11**	.06**	.24**	269
Goal setting (Listening)				
Step 1: Language difficulty	.09**	.09**	-.29**	153
Step 2: Core self-evaluations	.12*	.03*	.19*	152
Goal setting (Reading)				
Step 1: Language difficulty	.12**	.12**	-.34**	153
Step 2: Core self-evaluations	.15*	.03*	.18*	152
Intentions to transfer				
Step 1: Language difficulty	.05**	.05**	-.21**	153
Step 2: Core self-evaluations	.15**	.10**	.32**	152
Motivation to transfer				
Step 1: Language difficulty	.05**	.05**	-.21**	153
Step 2: Core self-evaluations	.08*	.03*	.18*	152

Note. $n = 153-383$. $df =$ degrees of freedom.

^a β represents standardized beta coefficient.

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

Table 3

Incremental Validity of CSE over Cognitive Ability and Training Motivation

Variable	R^2	ΔR^2	β^a	df
Utility reactions (7-point)				
Step 1: Language difficulty	.12**	.12**	-.26**	152
Step 2: Cognitive ability and training motivation	.19**	.08**		150
Step 3: Core self-evaluations	.21	.02	.15	149
Utility reactions (5-point)				
Step 1: Language difficulty	.12**	.12**	-.33**	154
Step 2: Cognitive ability and training motivation	.13	.01		152
Step 3: Core self-evaluations	.14	.01	.12	151
Metacognition				
Step 1: Language difficulty	.01	.01	-.05	252
Step 2: Cognitive ability and training motivation	.02	.02		250
Step 3: Core self-evaluations	.06**	.03**	.20**	249
Post-training self-efficacy				
Step 1: Language difficulty	.05**	.05**	-.20**	252
Step 2: Cognitive ability and training motivation	.06	.01		250
Step 3: Core self-evaluations	.11**	.05**	.23**	249
Goal setting (Listening)				
Step 1: Language difficulty	.09**	.09**	-.26**	153
Step 2: Cognitive ability and training motivation	.11	.02		151
Step 3: Core self-evaluations	.14*	.02*	.16*	150
Goal setting (Reading)				
Step 1: Language difficulty	.12**	.12**	-.32**	153
Step 2: Cognitive ability and training motivation	.13	.01		151
Step 3: Core self-evaluations	.16*	.03*	.17*	150
Intentions to transfer				
Step 1: Language difficulty	.05**	.05**	-.19*	153
Step 2: Cognitive ability and training motivation	.12**	.06**		151
Step 3: Core self-evaluations	.18**	.06**	.27**	150
Motivation to transfer				
Step 1: Language difficulty	.05**	.05**	-.18*	153
Step 2: Cognitive ability and training motivation	.07	.02		151
Step 3: Core self-evaluations	.09	.02	.16	150

Note. $n = 154-253$. $df =$ degrees of freedom.

^a β represents standardized beta coefficient.

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

APPENDICES

APPENDIX A

PROPOSAL:

Core Self-Evaluations in the Context of Training:

The Impact of Self-Regard on Training Outcomes

Statement of the Problem

The amount of resources organizations devote perennially to training is astonishing. Various sources report the magnitude of these annual figures to reach \$200 billion total and \$1,201 per employee (2008 Corporate Learning Handbook). As astounding as these alleged yearly expenditures seem, the dollar estimates are actually liable to escalate as globalization, technological advancement, and expanding work roles continue to force organizations to keep up with an ever-changing work environment. Because this immense amount of money, time, and energy is committed to training, ensuring the effectiveness of any given program is essential. Understanding the antecedents of effective training is a major step in this endeavor, especially because tailoring an intervention or program to the needs of involved parties is highly preferable over generic *one-size-fits-all* programs that typically lack credible empirical utility. Even those that have demonstrated pragmatic value in specific situations are constrained by the ever-present threat of situational specificity that confines their generalizability.

Consistent with other domains in industrial and organizational psychology, training effectiveness is generally dependent upon two focal determinants: person and situation. Whereas situation (training design) has historically received the most attention, training evaluators need to know more about the role of individual differences. In fact, several of the usual suspects in individual differences research, such as the Five-Factor Model of personality (Costa & McCrae, 1992) and goal orientation, have received support in predicting training outcomes. Core self-evaluations is showing the potential to join the previously mentioned variables, and its documented ability to predict variability in training outcomes

seems imminent. Core self-evaluations is building a body of evidence in other organizational areas of interest and if the momentous findings translate over to the training context then this will provide additional reasoning for researchers and practitioners to pay heed to its utility.

Dispositional measures are immensely beneficial when capable of accounting for variance in venerated work outcomes such as performance and satisfaction. Core self-evaluations (CSE), one of the more recently postulated personality constructs, claims to do just that and is steadily building evidence backing that assertion. CSE is an individual's general self-regard, as well as his or her fundamental evaluations concerning self-perceived competence and worth, and proponents claim it to be consistent across situations and stable over time. CSE is most recognizable by its four dispositional manifestations (general self-efficacy, emotional stability, locus of control, and self-esteem); and research supports the notion that it is an underlying superordinate construct rather than simply the composite of the aforementioned measures (Judge, Erez, Bono, & Thoresen, 2003). Despite investigations into relationships with various work outcomes, research on CSE in the training context is seemingly nonexistent. Psychologists, researchers and practitioners alike, are optimistic about the potential utility of CSE, so further empirical inquiry into the utility of CSE in the domain of training is an important next step.

An established training system will contribute approximately 420 language-training participants for carrying out this investigation. I will use this sample to investigate links between CSE and training outcomes, primarily following Kirkpatrick's (1976) prominent training criteria framework. I hypothesize that CSE will be positively related to training

outcomes across three of the four levels (the fourth level being beyond the scope of this study) of Kirkpatrick's (1976) taxonomy.

Core Self-Evaluations in the Context of Training:
The Impact of Self-Regard on Training Outcomes

In addition to other disciplines in the sociological and psychological sciences, industrial and organizational research has historically acknowledged the impact of personal disposition on human behavior. Individual differences have myriad linkages with work outcomes that include broad criteria such as job satisfaction (e.g., Staw & Ross, 1985) and job performance (e.g., Barrick & Mount, 1991), as well as with more narrow criteria such as effort exertion (Yeo & Neal, 2004) and skill acquisition (Ackerman, Kanfer, & Goff, 1995). Dispositional influences also impact a host of training variables and outcomes, such as training motivation (Colquitt, LePine, & Noe, 2000) and post-training performance expectations (e.g., Schwoerer, May, Hollensbe, & Mencl, 2005). Research that is supportive of these dispositional influences exploits singular traits such as conscientiousness, as well as multi-dimensional frameworks such as the Five-Factor Model of personality (Costa & McCrae, 1992). Circa 1997, a new dispositional predictor with expected pragmatic value materialized: core self-evaluations.

Core self-evaluations (CSE), a construct primarily pertaining to self-perceived competence and value, was originally proposed as a dispositional measure capable of predicting job satisfaction (Judge, Locke, & Durham, 1997). As investigative attempts to verify this relationship progressed, researchers became increasingly more optimistic about the potential of CSE predicting outcomes of interest extending beyond the realm of job satisfaction (Judge, Erez et al., 1998). The mounting support for the utility of CSE using indirect methods of measurement eventually led to the development of the Core Self-

Evaluations Scale (CSES; Judge, Erez, Bono, & Thoresen, 2003). However, some assert that it may be premature to declare that CSE is a viable superordinate personality construct, and furthermore, to proclaim the CSES to be a reliable and dependable measure of this construct (e.g., Johnson, Rosen, & Levy, 2008). This speculation is prudent, due in part to the predominant dispositional traits (e.g., Big Five and positive affectivity) being many years the elder, and thus having extensive evidence to support their utility. Nevertheless, support for CSE is steadily mounting and it could potentially join the aforementioned traits as a leading predictor of work outcomes. In fact, CSE could feasibly add depth and profundity unaccounted for by these established dispositional traits.

The main objective of the present study is to investigate the CSE construct and to examine its relationships with training outcomes derived from Levels 1, 2, and 3 of Kirkpatrick's (1976) training criteria taxonomy. Ultimately, this study helps clarify the theoretical and empirical utility of core self-evaluations in a previously untapped context. If CSE demonstrates predictive validity with training outcomes, this would provide support to claims made by practitioners and the research community about CSE's likelihood of being a valuable dispositional construct in various organizational settings.

As previously mentioned, this organizational setting (training) is unique to CSE research and provides a propitious context for empirical inquiry. The 2008 Corporate Learning Handbook approximated that employers spent \$1,201 per employee the previous year on training, and this estimate should continue to escalate due in part to the constant need for organizations to keep up with a demanding and ever-changing environment.

Understanding the antecedents of an effective training experience helps ascertain the quality

of a given intervention and consequently ensures benefits for both the trainee and the organization; the latter of which include increased workforce productivity and company profit margins (Arthur, Bennett, Edens, & Bell, 2003). This study will examine an established military training program designed to teach foreign language. Since military personnel will serve as the participants, this study will capitalize on results obtained with a real-world sample, in a real-world setting. Advancing the literature on a relatively youthful construct, core self-evaluations, within a previously unexplored context is another step toward the transcendent goal of understanding the influences and dynamics of the human disposition.

Theoretical Background of CSE and Training

General Background of Core Self-Evaluations

Core self-evaluations (CSE) is a higher-order latent construct underlying a broad set of personality traits that encompass the fundamental appraisals individuals have in regards to general self-regard, confidence, and self-assuredness. CSE made its debut in the publicized literature venue via Judge and colleagues a little over a decade ago (Judge, Locke, & Durham, 1997), and soon thereafter researchers spoke of the promising utility of the construct by saying that it “may further explicate the psychological processes underlying the dispositional source of job satisfaction” (Judge, Locke, Durham, & Kluger, 1998, p. 18). It is evident that these core evaluations initially offered a means of providing a dispositional predictor of job satisfaction. However, a more recent portrayal of CSE connotes the shift from a satisfaction-specific conceptualization to a more robust one: “[CSE is] the fundamental appraisal of one’s worthiness, effectiveness, and capability as a person” (Judge

et al., 2003, p. 304). Three operative words (capability, worthiness, and effectiveness) imply more than just satisfaction. This depiction indicates that, in addition to satisfaction, these core evaluations include fundamental assumptions that influence performance and other work outcomes as well. Further, extrapolating from ancillary evidence relating positive self-concept to motivation and performance (Judge, Thoreson, Bono, & Patton, 2001), and considering the significant linkages found between CSE and satisfaction, it logically followed that researchers should look into possible associations that CSE had with other work criteria, including job performance (Judge & Bono, 2001) and goal setting (Erez & Judge, 2001).

Three guiding principles led to the initial formulation of what was indicative of a core set of self-referenced evaluations. Traits needed to be: (a) evaluative, rather than descriptive; (b) fundamental and central to one's self-concept; and (c) broad in scope, reminiscent of cardinal traits (Judge & Bono, 2001). The four traits that met the designated criteria were generalized self-efficacy, emotional stability, locus of control, and self-esteem. Judge and colleagues identified these four traits as manifestations of a broader personality trait (i.e., CSE). Despite skeptics asserting that CSE should be considered an aggregate of the four individual causal indicators rather than an underlying superordinate construct (e.g., Johnson et al., 2008), supportive evidence (e.g., factor analytic evidence and incremental validity studies) suggested that CSE was indeed a higher-order latent construct (e.g., Erez & Judge, 2001; Judge, Bono, & Locke, 2000; Heller, Judge, & Watson; 2002). Accordingly, in the present study, I consider CSE to be the underlying cause of variation in each of the four indicators rather than an arbitrarily named composite. I will discuss the recognized factor

structure of CSE and explain each of the four individual traits in detail in subsequent sections of this proposal.

Dispositional Influence of Core Self-Evaluations

Judge et al. (1997) initially conceptualized the core self-evaluations construct as a dispositional source of individual variation in job satisfaction. Contrary to early theory focusing solely on the importance of manipulating the work setting to create a satisfied and productive worker, more recent theories also incorporate dispositional sources of influence. A 5-year longitudinal study at the individual level of analysis by Staw and Ross (1985) found that dispositional factors showed significant cross-situational consistency and better predicted job satisfaction than changes in pay and social status in the midst of occupational transition and circumstantial variation. These findings attracted attention within and outside of the research community because it was among the first studies to seemingly imply that happy workers could not be created, only hired. These findings did not refute the importance of situational factors, however, they did serve to illustrate that individual differences also played an integral role.

Results from a study by Bowling, Beehr, and Lepisto (2006) corroborated previously stated findings regarding dispositional influences. They investigated the relationship between affective disposition and various work outcomes. Two significant findings are particularly pertinent. First, the authors reported that job satisfaction, organizational commitment, job involvement, career commitment, and career satisfaction all showed significant stability over a 5-year period. Second, individuals with a positive affective disposition scored relatively higher from Time 1 to Time 2, whereas those with a negative

affective disposition scored relatively lower from Time 1 to Time 2. One can infer that the latter set of findings suggest that individuals with positive dispositions monitor and attend to the positive aspects of their circumstances, whereas those with negative dispositions tend to be cognitively lured to negative circumstantial elements. It is apparent that dispositional factors are particularly affluent predictors of satisfaction and other work outcomes, in that positive individuals tend to experience positive emotions and maintain positive self-regard across shifting circumstances. It is conceivable that a positive self-concept, or high core self-evaluations, acts as the underlying mechanism through which this dispositional positivity materializes.

Judge and Bono's (2001) meta-analysis reported the four traits encompassing CSE to be among the best dispositional predictors of job satisfaction, with individual correlations ranging from .26 for self-esteem to .45 for generalized self-efficacy; and cumulatively (representative of CSE as a higher-order construct) correlating at .41. Judge, Heller, and Klinger (2008) provided compelling evidence when they utilized a multi-source longitudinal design to compare CSE with two popular personality taxonomies: Five Factor Model (FFM; Costa & McCrae, 1992) of personality and dispositional affectivity. A particularly relevant finding was that when the three typologies were concurrently examined, only CSE remained significantly related to job satisfaction. The finding that CSE predicted incremental variance beyond that of arguably the two most popular dispositional predictors used in industrial and organizational research implies that nontrivial amounts of variance are left unaccounted for should researchers omit measures of CSE when investigating the relationship between personality and work-related criteria.

Judge et al. (1998) found CSE to have a considerable impact on job satisfaction (reporting correlations of .48 and .36 for self-report and reports by significant others, respectively) that were consistent and independent of job attributes. The authors posited that the way people perceive themselves affects how they experience their jobs and lives. Further, the authors noted that individuals who consider themselves worthy and capable bring a “positive frame” to encountered situations, whereas those with a low self-regard bring a “negative frame” to parallel situations. Analogous to the framing imagery resides the cognitive explanation for the perceptual inconsistencies between different individuals encountering identical stimuli. The mechanism through which individuals perceive the same stimulus differently is said to be self-referential and facilitated by self-schemata (Fischer, Tarquinio, & Vischer, 2003). Individual differences in the construal of like stimuli are homologous to the effect CSE has on individual differences in work attitudes and behavior. Individuals with differential levels of CSE will perceive the same work conditions or circumstances differently, and subsequent attitudes, intentions, and behaviors will reflect that.

Judge et al. (1998) referred to how cognitive structures, or schemata, affect how individuals process information about themselves and the world. They acknowledged the similarities, yet discriminated between self-schemata and CSE in two ways: (a) CSEs are beyond scripts because they are evaluative, and (b) CSEs are fundamental traits and therefore much broader in scope. Further, Cantor (1990) asserted that schemata likely mediate the relationship between dispositions (e.g., CSE) and interpretations of the outside world. The substantial impact that schema-laden scripts have on our everyday lives is undeniable.

Therefore, CSE, as an underlying factor in the development of schemata, plays a substantial role in how individuals interpret experiences and how the contingent attitudes and behaviors reflect that interpretation. For the purposes of this study, two individuals experiencing the same training design are still likely to form different attitudes, acquire differential knowledge, and perform different behaviors based on differences in self-referenced interpretations of the training situation, thus leading to different training outcomes.

The progression from job satisfaction to other work-related attitudes and behaviors (e.g., job performance and motivation) came next in the chronological dispersal of CSE into the work outcome literature. Judge, Erez, and Bono (1998) provided an early argument in favor of the use of CSE as a viable predictor of job performance, mainly calling upon its potential to both catalyze work motivation and act as an ability factor. In describing the motivation component, Judge et al. (1998) referenced Lazarus's (1991) event information appraisal process. This process involves individuals' appraisals of the positivity or negativity of an event, judgments of who is responsible for the event's outcome, and whether or not it is manageable. CSE influences all stages of this process, and therefore influences the individuals' motivation to engage in courses of action (specifically, whether or not to exert effort, how much effort, and for how long). Using the aforementioned process, individuals low in CSE will have the tendency to view issues during training negatively, deem them to be out of their control and unmanageable, and conclude that their efforts would be insufficient. These self-referenced appraisals are mainly a function of low emotional stability (tendency to seek negativity), an external locus of control (not believing in one's own agency), and low self-esteem and general self-efficacy (not believing the task is

manageable). Any or all combinations of the aforementioned dispositions might explain an individual's tendency to lack motivation, tendency to exert minimal effort, or tendency to cease the exertion of effort abruptly. Beyond withholding effort, this lack of motivation can result in self-handicapping, self-fulfilled prophecies, learned helplessness, and other phenomena that are deleterious to an individual's work and training outcomes.

In addition to influencing work outcomes by influencing motivation, Judge, Erez et al. (1998) offered reasons why CSE may also act as an ability factor. Judge, Erez et al. (1998) included several reasons to believe that individuals with high CSE benefit from inherent job-relevant advantages. First, they cited Judge, Thoresen, and Pucik's (1996) work that found coping with change mediated the relationship between positive self-concept and job performance. It seems to me that this ability to cope more effectively with change and ultimately perform at higher levels despite change will become increasingly important as the economy and work world continue to evolve. Furthermore, this ability should influence training because training often acts as a principal method of adapting to change, and because within any given training program there is often ample instances of change or discontinuity where coping ability will lend itself to heightened learning and performance. Another factor mentioned by Judge and colleagues was the ability of those with high CSE to work more effectively in groups and to work in the presence of social facilitation, which is particularly important in occupations that utilize teamwork and collaboration. This is important for training because programs and interventions are rarely one-on-one, and typically involve the presence and facilitation of others. Another ability mentioned was that those with a positive self-concept tend to project that positivity and are inclined to be more positive to others.

When “others” include coworkers, customers, and various organizational stakeholders, the benefits are quite evident. This is especially the case when the job description and reward structure explicitly (or implicitly) supports and rewards this type of behavior.

Theorizing that motivation and ability advantages lead to enhanced work outcomes for those with a positive self-concept eventually received backing with data-driven support. A meta-analysis by Judge and Bono (2001) reported significant correlations between CSE and job performance ranging from .19 for emotional stability to .26 for self-esteem, and an average across the four traits of .23, which is equivalent to the oft-cited Barrick and Mount’s (1991) validity finding for the established predictor, conscientiousness. Furthermore, when the traits composing CSE were aggregated (Judge, Erez, Bono, & Thoreson, 2002), CSE and job performance correlated .30. Beyond job performance, the relationship between CSE and other important criteria have been documented including: organizational commitment (Judge, Thoreson, Pucik, & Welbourne, 1999); popularity and organizational citizenship behaviors (Scott & Judge, 2009); burnout (Best, Stapleton, & Downey, 2005); and stress (Kammeyer-Mueller, Judge, & Scott, 2009). A study by Judge and Hurst (2008) used hierarchical linear modeling to estimate intercepts (starting levels) and growth trajectories (slope of success over time) for job satisfaction, pay, and occupational status. The authors found that higher CSE was predictive of both higher intercepts and steeper work success trajectories. These findings suggest that individuals with high levels of CSE tend to not only seek for and start in more esteemed occupations and jobs, but also ascend the ladder of success faster. To this point I have discussed linkages between CSE and a variety of work outcomes, but I have not yet thoroughly explained the individual indicators of CSE. The following explanation of

these individual trait manifestations should help clarify CSE's role as a broad dispositional construct.

Four Indicators of Core Self-Evaluations

To reiterate, Judge et al. (1997) originally conceptualized CSE as a dispositional source of variation in work outcomes (initially satisfaction). CSE was conceptualized as a broad set of personality traits representing fundamental appraisals of self-worth and general self-regard. The three criteria used to determine manifestations of this latent construct were that they be evaluative, fundamental, and broad in scope. Judge et al. (1997) used these criteria to identify four indicators of CSE: (a) generalized self-efficacy, (b) emotional stability, (c) locus of control, and (d) self-esteem. Judge and Bono (2001) noted that these traits, pair by pair, share many conceptual similarities; and Judge et al. (2003) speculated that the reason these similarities are shared by these traits is the result of them all being indicators of a deeper, common core construct (i.e., CSE). Thus, an individual scoring high on CSE would be efficacious, value oneself, would be positive and well adjusted, self-confident, and hold the belief that events are contingent upon his or her actions.

I will describe each of the four traits individually, followed by a section devoted to the proposed factor structure of CSE. These four constructs are among the most studied traits in the work outcome literature, and are also well represented in the training literature. However, the training context is void of any investigations into the latent construct that plausibly underlies these individual indicators, namely, core self-evaluations. Further understanding of CSE's potential impact on training outcomes would be beneficial to researchers and practitioners alike.

General self-efficacy. Self-efficacy is an oft-studied concept that pertains to an individual's belief in his or her ability to perform in a given task (Bandura, 1986). Although originally conceptualized as a state-dependent and task-specific concept, researchers began to question the construct's spectrum of specificity (Maurer, 2001). In addition, questions arose about the generalization of self-efficacy across situations (Tipton & Worthington, 1984). A trait-like conceptualization of the construct, general self-efficacy (GSE), is the general belief in one's capability to be successful across situations and regardless of the activity. This dispositional trait is shaped by successful experiences in a variety of situations (Schwoerer et al., 2005), and this accumulation of general successes builds a stable sense of competency that is resistant to change. Thus, GSE is a disposition that stems from a virtually solidified set of judgments about one's self-perceived competence. An individual with high GSE regards him- or herself as capable and equipped with the cognitive and skill-based resources necessary to succeed in a variety of training demands and in a variety of situations. Specific self-efficacy (SSE), on the other hand, is a proximal variable that is dependent on the particular task or particular training activity in the given situation. In line with the trait-like conceptualization, GSE was considered an indicator of CSE because it refers to "one's estimate of one's fundamental ability to cope, perform, and be successful" (Judge & Bono, 2001, p. 80).

In the training context, Schwoerer et al. (2005) supported the SSE-GSE demarcation by demonstrating the malleable nature of SSE. The authors reported that pre-training motivation, pre-training self-efficacy, and performance expectancy were significant predictors of difference scores in SSE from Time 1 to Time 2. Conversely, GSE remained

stable and consistent from Time 1 to Time 2 regardless of the aforementioned predictors. Additionally, pre-training GSE significantly influenced changes in SSE from Time 1 to Time 2, which suggested that GSE (and CSE) had a dispositional impact on post-training perceptions of program-specific efficacy. Later, I will review this lattermost finding relative to CSE's impact on training outcomes.

GSE, and accordingly CSE, accounts for variability across diverse and complex situations because they reflect self-referent beliefs that are not confined to the parameters of a given context. Cervone (1997) asserted that the highly variable patterns of generalizations across diverse domains that are not accounted for by specific measures of efficacy are obtained when individuals' idiosyncratic patterns of social and self-referent beliefs are assessed (as cited in Stajkovic & Luthans, 1998, p. 244). The self-referent beliefs individuals hold about their cross-situational efficacy form some of the most fundamental appraisals of dispositional value, and are encompassed by individuals' core self-evaluations. Therefore, CSE should account for the aforementioned patterns of generalizations across diverse domains.

Salas and Cannon-Bowers (2001) asserted that self-efficacy had been widely studied in the training literature with consistent findings: whether an individual has it before or acquires it during training, it leads to better learning and performance. Self-efficacy has been deemed to have relevance before, during, and after training (Schwoerer et al., 2005), particularly through influences on training motivation, learning strategies, and transfer motivation. Exemplary learning strategies by those high in self-efficacy result in better training outcomes, as well as a tendency to show persistence when faced with failures or

disconfirming feedback (Gist & Mitchell, 1992). In addition to persistence, Gist and Mitchell (1992) showed that self-efficacy influenced task choice and task effort. This is particularly important in training experiences because the trainee must engage in the activity and exert adequate effort in order to learn the content. Those high in self-efficacy also have the tendency to engage in strategic goal revision (Tolli & Schmidt, 2008). Consistent with these findings, Tipton and Worthington (1984) reported that individuals with high GSE expended more effort, persevered longer, and adapted more than those with low GSE on tasks of differing complexities.

A particularly important point about training experiences is that they typically cover knowledge, skills, and abilities (KSAs) that are unfamiliar, novel, or somewhat discrepant from existing KSAs. Individuals with high GSE hold positive beliefs in their capabilities regardless of the situation or activity. So, the decision to engage with optimal effort in activities, the manifestation of high amounts of motivation, and the utilization of effective strategies characteristic of high-performing individuals with high GSE is emphasized in the training context. High GSE should contribute substantially to explaining CSE's ability to predict training outcomes.

Emotional stability. Emotional stability refers to an individual's proclivity to remain unperturbed, and to experience less emotional reactivity to basic nuances. This trait was deemed to be indicative of core self-evaluations because it is a broad trait that reflects the "tendency to be confident, secure, and steady" (Judge & Bono, 2001, p. 80). Low emotional stability is a personality style indicative of generally negative cognitive and explanatory styles, resulting in a focus on the negative aspects of one's self (Pinder, 2008, p. 192). Those

who are less emotionally stable are more inclined to perceive and recall negative information and negative emotional experiences (Johnson et al., 2008). Researchers have linked low emotional stability to experiencing high levels of negative affect, anxiety, depression, counterproductive behavior, and physical symptomatology (Caprara, Paciello, Gerbino, & Cugini, 2007; Miers, Rieffe, Terwogt, Cowan, & Linden, 2007; Moberly & Watkins, 2008); each of these having serious implications for work and training.

Emotional stability has likely received the most acclaim for its inclusion in the Five-Factor Model of personality (FFM; Costa & McCrae, 1992; Digman, 1990). The personality literature, and more specifically the FFM vernacular, frequently uses neuroticism in lieu of emotional stability, and represents the opposite end of the construct's latent continuum (i.e., high neuroticism being comparable to low emotional stability). Accordingly, researchers and practitioners often use emotional stability and neuroticism interchangeably to represent the same respective CSE trait. Henceforth, asserting that individuals low in emotional stability are predisposed to demonstrate given behaviors and attitudes is semantically equivalent to saying that individuals high in neuroticism are likely to display these same respective tendencies.

Low emotional stability has been linked to undesirable outcomes such as intentions to quit (Zimmerman, 2008), turnover (Salgado, 2002), interpersonal and organizational deviance (Berry, Ones, & Sackett, 2007), and exhaustion and cynicism (Zeng & Shi, 2007). In addition, Furnham and Buchanan (2005) found that neurotic individuals self-reported significantly lower intelligence estimates. This lack of confidence and general negativity illustrates the tendency for those high in neuroticism to lack belief in their own aptitude.

This relates to both GSE and CSE in regards to representing individuals' fundamental cognitive judgments about their own capacity to be successful and valuable. Similar to those with high GSE and CSE, individuals with high emotional stability possess positive self-concepts and have confidence in their ability to succeed across situations, including training.

Research has provided evidence pertinent to the impact that emotional stability tends to have. Costa and McCrae (1980) provided one of the foundational studies demonstrating the negative impact of neuroticism on negative affect. Thereafter, Costa, McCrae, and Norris (1981) presented evidence indicating that neuroticism predicted differences in happiness 17 years after first assessment. This display of the consistent and stable nature of emotional stability, and the detriments associated with negative affect (often considered an opposite of positive self-concept), further supports notions of an underlying broad personality trait (CSE). In addition, the fact that individuals high in emotional stability are generally more positive has definite offerings for work and training outcomes.

A study by Rowold (2007) in the training context showed high emotional stability to be a positive predictor of transfer motivation and motivation to learn. Further, much established research demonstrates transfer motivation and motivation to learn as substantial predictors of preferred training outcomes and greater training effectiveness (e.g., Cannon-Bowers, Salas, Tannenbaum, & Mathieu, 1995; Liao & Tai, 2006; Mathieu, Tannenbaum, & Salas, 1992; Tai, 2006; Tziner, Fisher, Senior, & Weisberg, 2007). Individuals high in neuroticism are likely to be insecure, apprehensive, and susceptible to feelings of dependence, helplessness, and anxiety. Novel situations heighten these undesirable feelings and insecurities (Costa & McCrae, 1992). Therefore, it is feasible to expect an individual

high in neuroticism to have trouble adjusting to a complex training environment, especially if other potential stressors are present such as negative feedback, competition, or social pressure. Also present is the probability that individuals low in emotional stability will experience heightened levels of performance anxiety and other handicappers. An individual high in emotional stability should remain calm and avoid burning up limited cognitive resources on matters such as impression management and excessive worrying. Furthermore, the associated positivity should manifest itself in more effort and motivation. Thus, an individual high in emotional stability should have positive perceptions of varying training situations, experience more motivation, exert more effort, and ultimately generate better training outcomes than an individual low in emotional stability.

Locus of control. Locus of control (LOC) is also deemed to be a manifestation of CSE, as it refers to the fundamental beliefs that individuals hold regarding who or what is in control of events in their lives. It is common practice to dichotomize this construct, labeling individuals as either *internals* or *externals*. Those with an internal LOC believe that they are in control of events in their lives and ascribe the causes to internal factors such as skill, or lack thereof. Those with an external LOC believe that the environment, powerful others, or fate determines the outcomes of events in their lives. Externals are inclined to attribute successes and failures to external sources, such as luck or coworkers. Individuals with an internal LOC, however, are predisposed to attribute successes and failures to factors within themselves and believe in their own capacity to influence desired outcomes. Therefore, those with an external LOC are unlikely to increase their effort when faced with failure because they do not believe in their own agency to influence the outcome, whereas those with an

internal LOC alter their effort with the realization that this added effort influences the desired outcome. This broad belief in one's own agency feasibly results from a positive sense of self-worth and competence. GSE, self-esteem, emotional stability, and hence CSE should all play important roles in the development and manifestation of an internal LOC.

Individuals with an internal LOC believe that events occurring at work result from their own behavior, and are therefore under their own control (Rotter, 1966). The confidence that individuals possess regarding their ability to control outcomes should lead to higher levels of motivation and effort. Spector (1982) found that internal LOC is associated with lower anxiety, less stress, higher achievement orientation, and higher levels of motivation. Motivation to learn and motivation to transfer should both be positively impacted by high internal LOC because trainees will believe that their actions (e.g., paying attention, exerting more effort, increasing their abilities) influence the attainment of positive outcomes and avoidance of negative outcomes. In fact, Williams, Thayer, and Pond (1991) found that internals had higher expectancies in terms of effort regarding training performance, which was further associated with higher motivation to learn. A study investigating predictors of military training performance found that LOC significantly predicted grades after completion of training (Bradley & Adelheid, 2006). In Noe and Schmitt's (1986) exploratory model of training effectiveness, LOC was posited to directly influence reactions to skill assessment (internals being more receptive of and constructive with feedback on strengths and weaknesses), expectancies concerning the link between effort and mastery of training content, and expectancies concerning rewards resulting from successful completion. Further, Colquitt et al. (2000) reported that LOC related positively to skill acquisition and transfer of

training. One can presume that internals possess strong expectancies that their effort (internal factor) will lead to mastery, and to expect that high levels of training performance will lead to rewards and other coveted outcomes.

Self-esteem. Self-esteem is the basic appraisal people make of themselves and is the most fundamental core evaluation of the self (Judge et al., 1998). Self-esteem is a key element underlying self-concept, and research has shown it to have long-term stability (Costa & McCrae, 1994) and relate to individuals' self-knowledge (Baumgardner, 1990). In addition, those with high self-esteem have consistent, coherent, stable, and logical views of themselves, whereas those with low self-esteem seem to have unclear and malleable views of the self. This inconsistency is a source of Brown and Dutton's (1995) finding that when individuals with low self-esteem fail, they tended to overgeneralize the negative implications, which had a deleterious effect on subsequent performance. A mechanism through which this performance decay plays out is feasibly a function of subsequent decreases in specific self-efficacy, motivation, and effort. However, individuals with high self-esteem (and a positive self-concept) construed the same disconfirming evidence as an opportunity to learn and did not endure diminished self-efficacy, effort, motivation, and ultimately, performance. The training environment is likely to present situations where a trainee encounters hindrances, failures, and negative or disconfirming feedback. The esteem-influenced reaction to these phenomena (e.g., changes in motivation and effort) will greatly influence the training experience.

Quick, Joplin, Nelson, Mangelsdorff, and Fiedler (1996) linked self-esteem to self-reliance in a training context. A military training sample studied by Quick et al. (1996) led to

conclusions that individuals with a low self-esteem had counterdependent tendencies and higher burnout, and would likely be at greater risk regarding personal well-being and ability to function effectively in a training setting. The training context provides many opportunities for an individual with a low self-regard to doubt oneself, withhold effort, and lose motivation. Novel experiences and the likelihood of negative feedback represent only a couple of the training aspects that exacerbate this self-doubt. The age-old axiom, “you reap what you sow,” applies to those who hold highly esteemed views of the self, as they are likely to invest more into training and ultimately reap the rewards of enhanced training outcomes.

Factor Structure of CSE and Use of the CSES

The trainee’s disposition plays a significant role in predicting important training outcomes. Predominant personality typologies, as well as established trait predictors, merit recognition for the guidance they offer researchers and practitioners for building and sustaining successful training programs. A relatively new construct, core self-evaluations, may predict variance in training outcomes unaccounted for by its predecessors. Measuring independently (or in combinations) the traits of GSE, emotional stability, LOC, and self-esteem when tailoring a training program to the specific needs of an organization is beneficial in and of itself. However, directly measuring the underlying cause of these manifest indicators (i.e., CSE) is ideal because (a) omitting any indicators of CSE could result in predictor deficiency and variance unaccounted for, (b) parsimoniously avoiding aggregates and composites helps limit sources of error and helps with measurement reliability and validity, and (c) a direct measure is more precise, practical, and economical.

Judge et al. (2003) developed a measure, the Core Self-Evaluations Scale (CSES), which directly assesses the proposed superordinate construct of CSE. Until the development of this direct measure, investigators measured CSE indirectly and inconsistently by administering different combinations of separate measures for each of the four individual indicators. Although these methods provided consistent findings in favor of the viability of the CSE construct, they had certain limitations. These limitations included indirect measurement problems associated with precision, factor structure perplexity, and excessive lengthiness (due to having to measure four separate scales). There were also empirical validity limitations due to the different indicators displaying slightly different relations with outcome variables. Researchers can address this final set of limitations by directly measuring the underlying cause of the four indicators, thus leading to the achievement of higher and less variable levels of validity (Judge et al., 2003). Judge et al. (2003) indicated that, alternatively, the CSES was reliable, displayed a unitary factor structure, correlated significantly with relevant criteria, and demonstrated validity equal to that of an optimally weighted composite of the four individual core traits. They provided further support consistent with other findings in the literature that CSE was a superordinate construct (e.g., Erez & Judge, 2001; Judge et al., 1998; Judge & Bono, 2001; Judge, Erez et al., 2002; Piccolo, Judge, Takahashi, Watanabe, & Locke, 2005).

However, contrary to the aforementioned view, some sources remained wary about considering CSE a superordinate construct (e.g., Dormann, Fay, Zapf, & Frese, 2006; Johnson et al., 2008). The superordinate construct view was that CSE signified a general concept that was manifested by its dimensions (Edwards, 2001), and these dimensions were

fully represented by its effects indicators (i.e., GSE, emotional stability, LOC, and self-esteem). These indicators all represented constructs that were manifestations of a more general, higher-order construct, and the higher-order construct represented the shared variance, or commonality among said indicators. An alternative to the superordinate view was to treat CSE as an aggregate construct. One way to understand the distinction between aggregate constructs and superordinate constructs is to examine the direction of causality. Whereas superordinate constructs cause variability in their dimensions, aggregate constructs do not. More specifically, aggregate constructs are comprised of their dimensions, or a composite of the individual sets of measures, rather than the underlying cause of them. In sum, if CSE is a superordinate construct then an underlying common concept would be the source for all manifestations of it. Alternatively, if CSE is an aggregate construct then each manifestation represents a unique trait and the composite produces the measure.

One key element that should be present to classify CSE a superordinate construct is high inter-indicator relationships, evidenced by high intercorrelations among the four indicators (Law, Wong, & Mobley, 1998). If indicators are all manifestations of the same underlying concept then they should all correlate, that is to say, an individual scoring high in one should also score high in the others. Judge, Erez et al. (1998) factor analyzed data from a large and diverse sample of approximately 15,000 individuals and reported that a higher-level construct was worthy of investigation because the four traits intercorrelated at a sufficient level. Judge et al. (2003) explained that CSE was the latent trait that caused them to covary. In other words, they argued that CSE was manifested by self-esteem, emotional stability, GSE, and internal LOC. Further, Erez and Judge (2001) reported that a second-

order model (i.e., CSE as the higher-order latent trait) provided a better fit than the first-order model, and they suggested, “core self-evaluations is a higher-order factor that explains the associations among the four lower-level traits” (p. 1272). Whereas multidimensional aggregate constructs are comprised of dimensions that may or may not be related, studies of CSE consistently find commonality among the component dimensions (Judge et al., 2003).

To present, the literature supports the notion that CSE is indeed a higher-order superordinate factor. Piccolo et al. (2005) found that CSE was reliable, demonstrated a unitary factor structure, and displayed higher correlations with relevant criteria than each of the four dimensions display individually. As previously stated, Erez and Judge (2001) found that data best fit the single-factor model, which was indicative of a single trait (CSE) being the underlying cause of the four indicators. Furthermore, the factor loadings all loaded substantially higher than the typically accepted minimum ($> .40$), with average loadings of the dimensions on the higher-order factor equaling 0.91 with self-esteem, 0.74 with LOC, - 0.73 for neuroticism, and 0.81 for GSE. Erez and Judge (2001) also demonstrated that CSE added incremental validity and predicted variance in criteria beyond that of the individual traits. Furthermore, the unique portion of the four variables (the portion not represented by CSE) did not add significant variance beyond that of CSE and therefore did not contribute to predicting criteria beyond the single CSE factor. These results and others from studies that investigated the factor structure indicate support for CSE as a superordinate construct. Bono and Judge (2003) drew several conclusions regarding the relationships among the four components of CSE based upon their literature review: (a) the four indicators have conceptual similarities, (b) empirical relations among these traits are strong, and (c) the four

traits consistently indicate a higher-order factor. In harmony is Erez and Judge's (2001) verdict that core self-evaluations (as a single factor) is a stronger and more consistent predictor of work criteria than any of the single traits of which it is presumably composed. Therefore, the present study follows from the preponderance of evidence and considers CSE as a higher-order factor. Thus, measuring a single indicator or combination of the indicators rather than the underlying latent trait should result in substantial loss of variance accounted for.

Thus far, I have covered core self-evaluations, including its indicators and factor structure. Although researchers have examined this construct in a variety of work settings and in relation to a variety of work outcomes, the training context is seemingly absent CSE investigation. Filling this void with an empirical investigation into CSE's ability to predict variance in training outcomes is a valuable addition to both the training and the CSE literature. That said, next I will cover literature that pertains to the aforementioned training outcomes, and to training in general.

Training Background

Organizations frequently rely upon training as a panacea for a majority of issues and challenges. Beyond reactionary, or preventative, reasons for training (e.g., avoiding entropy, surface band-aid, *just because* rather than *just cause*, forced response to unruly environment), another set of motives are more neutral or positive in nature. These motives typically involve training as a form of prerequisite, qualification, or standard practice. Examples include students training in a classroom setting and individuals training to acquire particular qualifications or certifications. Training as a means to personal growth and development is

another common motive, and an example of this is individuals training to acquire desired KSAs. Regardless of the motive, training often involves equipping individuals with requirements necessary to perform and succeed, and many offer the competitive advantage of increasing versatility and increasing skill-set diversity.

Regardless of the aims of training, individuals and organizations invest an immense amount of resources in this endeavor. Therefore, it is necessary to ensure that training addresses pre-training objectives, that post-training outcomes are satisfactory, and that targeted behaviors are impacted. Any discrepancy between pre-training goals and post-training outcomes usually results in the organization wasting valuable resources.

Conversely, minimizing the aforementioned discrepancy and ensuring the effectiveness of training experiences results in competitive advantage and coveted increases in company profit margins and revenue (Arthur et al., 2003). Thus, evaluating the effectiveness of a given training endeavor is valuable for organizations to recognize whether it affected the targeted KSAs, if they spent resources wisely, and if modifying certain aspects would maximize gains and make better use of resources. “Constructive evaluation occurs when specified outcome measures are conceptually related to intended learning objectives,” (Kraiger, Ford, & Salas, 1993, p. 311). Typically, assessment of training outcomes at several levels is the source of this evaluation.

Kirkpatrick (1976) helped pioneer training outcome assessment with the development of a training criteria taxonomy consisting of four levels: (a) reactions, (b) learning, (c) behavior, and (d) results. The reaction level refers to an assessment of the trainee’s affective inclination toward the training. Assessment at the learning level documents knowledge and

skill acquisition measured immediately after training. Assessment at the behavior level evaluates the extent to which knowledge and skills transfer from the training context to the work setting. The fourth and final level, results, involves evaluating distal organizational objectives such as turnover and productivity gains. Both training practitioners and researchers (e.g., Goldstein & Ford, 2002, p. 152) often cite Kirkpatrick's (1976) model as the most influential and most frequently used approach. However, researchers have offered two particularly noteworthy amendments to the aforementioned framework, and both have discernible utility and sufficient backing.

Partitioning of the reaction outcomes (Alliger, Tannenbaum, Bennett, & Traver, 1997), as well as the trifurcation of the learning outcomes (Kraiger et al., 1993) presented useful modifications that are explained in detail within the corresponding sections covering the respective level of training criteria. The scope of this study allows for a focus on only the first three levels of training criteria. However, Level 4 criteria (results) are undeniably important and should be considered in future CSE research.

Training Outcomes

Kirkpatrick's (1976) taxonomy helped reduce the complexity of training evaluation by providing evaluators with a simple, yet systematic means of operationalizing training outcomes and, ultimately, a means of judging training effectiveness. Further, the general framework provided flexible applicability for evaluating a wide range of diverse training systems, despite program- or organization-specific idiosyncrasies. Next, each of the four levels will be described, including the previously alluded to modifications offered by Alliger et al. (1997) and Kraiger et al. (1993).

Level 1: Reactions. Trainee reactions are attitudinal measures that refer to subjective evaluations trainees form about the training experience. Self-report is the typical method used to measure reactions (Kirkpatrick, 1996). Reaction outcomes do not refer to actual learning that has taken place, rather they capture the trainee's evaluative judgments about features such as trainer characteristics and training content. Reactions are the most frequently used measures for evaluating training programs, and these programs are often assessed *only* at the reactions level. Sugrue and Rivera (2005) reported that the American Society of Training and Development's benchmarking forum resulted in 91% of participating firms evaluating programs with satisfaction surveys, compared to 54% using learning measures and 23% using transfer measures (as cited in Sitzmann, Brown, Casper, Ely, & Zimmerman, 2008). Beyond being economical, easy to administer, and relatively easy to interpret, reaction measures are said to influence other desired organizational outcomes, including learning (Brown, 2005; Kraiger, 2002; Noe 1986).

Originally, the conceptual domain of Kirkpatrick's (1976) first level included all trainees' reactions, regardless of the nature. In response to criticism that the unidimensional conception of reactions was impractical, Morgan and Casper (2000) identified six different factors associated with reactions to training. However, Alliger et al. (1997) offered perhaps the most parsimonious conception; they suggested an augmented framework to Kirkpatrick's (1976) first level that dichotomized the unidimensional category into affective reactions and utility reactions. The affective segment referred to trainees' satisfaction and enjoyment of the training experience, whereas the utility segment captured evaluative judgments about whether or not the trainee perceived the training as relevant, useful, and practical.

A meta-analytic review by Sitzmann et al. (2008) provided several particularly noteworthy findings pertaining to trainee reactions. First, reactions primarily captured characteristics of the actual training. This refutes the cynic's view that reactions are always positive and are purely a subjective function of the trainee's personality rather than actually being indicative of the specific training program's effectiveness. A second finding from the study was that reactions predicted pre-to-post training changes in motivation and self-efficacy. This further supported the value of information gleaned from reaction measures because motivation and self-efficacy have important influences on other training criteria. Finally, affective and utility reactions did not differ in their relationships with subsequent levels of training criteria, which disputes those that claimed the utility component to be the only form of reaction measure that was useful. To recap, Kirkpatrick's (1976) Level 1 refers to trainee reactions to training, and these reactions relate to other meaningful training outcomes, including subsequent levels of the training evaluation taxonomy.

Level 2: Learning. In its early conception, Kirkpatrick's (1976) Level 2 was concerned with measuring the knowledge and skills acquired during training. Learning criteria do not refer to job performance, nor are they actual KSAs transferred to the job. Rather, they are measures of training-specific learning and behavior that indicate the amount of knowledge and skills acquired from the training regardless of whether or not they transfer to the work context. Whether or not trainees learned the training content is a fundamental issue of evaluation (Campbell, 1988); and data gleaned from learning outcomes are critical because if the content is not learned then training objectives are not met and it is unlikely that a change in behavior will result. Research backs this assertion, and shows that higher levels

of learning correlate with higher levels of transfer (Ford, Smith, Weissbein, Gully, & Salas, 1998). Early delineation of learning outcomes was overly restrictive, not up-to-date with modern learning theories derived from areas such as cognitive psychology, and void of a conceptually grounded classification scheme of learning.

Kraiger et al. (1993) therefore asserted that Kirkpatrick's (1976) Level 2 was overly simplistic and unidimensional, and consequently developed an augmented framework of learning criteria. They drew from multiple research domains (e.g., cognitive psychology, social psychology), inspired by two particularly affluent streams of research (i.e., Bloom, 1956; Gagne, 1984), to arrive at an integrated classification of learning that trisected the classical conception into three theoretically grounded indicants of learning: (a) cognitive outcomes, (b) skill-based outcomes, and (c) affective outcomes. The authors pointed out various reasons for further delineating the traditional learning criteria. First, the framework would accentuate suitable aspects of learning that were previously neglected due to overly simplistic emphasis on a restricted set of criteria that omitted outcomes such as cognitive strategy, efficacy, and motivation. Second, further elucidating learning criteria would more exhaustively allow training engineers to match the specific criteria with the objectives identified as important prior to training. Finally, matching the criteria more vigilantly with the method of training evaluation would beget better measurement. The elaboration of learning criteria offered by Kraiger et al. (1993) should prevent evaluators from using a constrained notion of learning that fails to capture adequately a complex training program and a rich learning experience.

Regarding the partitioning of the traditional learning criteria, Kraiger et al. (1993) alleged that the cognitive learning outcomes capture aspects of learning that include verbal knowledge, knowledge organization, and cognitive strategies. Verbal knowledge refers to the declarative, procedural, and strategic knowledge that trainees acquire during training. This is the most common learning outcome assessed, and researchers typically measure this form of learning outcome via paper-and-pencil test. This knowledge is necessary, but not sufficient for higher-order skill development (Ackerman, 1987). Higher-order skill development refers to the other subcategories in the cognitive learning classification (e.g., cognitive strategies). Cognitive strategy outcomes refer to such processes as metacognitive skills. These skills include self-regulation, self-monitoring, and self-assessment. Metacognition is crucial for learning because it is the mechanism through which an individual monitors progress, identifies successes and failures, and adjusts his or her strategies to benefit maximally from the learning experience (Ford et al., 1998). More specifically, metacognition includes processes such as identifying the task, formatively and summatively evaluating one's progress, predicting outcomes, deciding where to allocate resources, identifying specific steps needed to complete the task, determining the speed and intensity at which to work, and prioritizing (Schmidt & Ford, 2003). Past research has shown metacognition to influence training outcomes. Ford et al. (1998) reported metacognition as significantly related to post-training learning, performance, and self-efficacy. In corroboration with previous findings, Schmidt and Ford (2003) reported metacognition to be a significant predictor of cognitive (declarative knowledge), skill-based (performance), and affective (self-efficacy) learning outcomes even after controlling for ability and experience.

The second learning criteria component offered by Kraiger et al. (1993), skill-based learning outcomes, refers to learning technical or motor skills and includes compilation and automaticity. Researchers and practitioners frequently refer to skill-based outcomes as post-training performance, and measure these outcomes several ways, including behavior-based assessments and skill-based proficiency tests. The more advanced trainee exhibits fluid, seemingly automatic performance that is relatively free from errors and mistakes. Conversely, the less advanced trainee, in terms of skill-based learning, will make more mistakes and demonstrate lower performance on skill-based proficiency tests.

The third and final learning criteria component is affective learning outcomes. According to Kraiger et al. (1993), affective learning should be considered a learning outcome in training research because “attitudes can determine behavior or performance. ... [and] because motivation is also an internal state that affects behavior” (p. 318). Kraiger and colleagues drew from Gagne’s (1984) theorizing that assessing learning outcomes only at the behavioral level was restrictive and that attitudinal and motivational outcomes should be included. Two particularly affluent motivational learning outcomes include self-efficacy and goal setting. Traditional measures of learning often neglect these attitudinal and motivational factors, but these components of learning merit consideration when assessing training effectiveness.

Bandura (1977) posited that self-efficacy influences choice of activity, effort expenditure, persistence, and task performance. Multiple studies have shown that the learning outcome of self-efficacy is a significant predictor of training transfer and skill maintenance (e.g., Ford et al., 1998). One can assume that a training program that enhances

self-efficacy, which consequently increases effort and persistence, is likely to be effective at shaping the amount and quality of the trainee's subsequent behavior. Salas and Cannon-Bowers (2001) asserted that self-efficacy consistently leads to better learning and performance, and Schwoerer et al. (2005) emphasized its relevance before, during, and after training. High levels of motivation and adept learning strategies by those high in self-efficacy lead to better training outcomes, and a tendency to persist when faced with disconfirming feedback (Gist & Mitchell, 1992). Self-efficacy also influences task choice and effort (Gist and Mitchell, 1992).

Locke and Latham (1990) demonstrated the importance of setting specific and difficult goals, and asserted that these goals motivate behavior by influencing the direction, arousal, and persistence of effort. Further, Mesmer-Magnus and Viswesvaran (2007) reported that goal setting fostered better intentions to transfer training material, and further concluded that goals yielded higher learning outcomes and thus improved not only performance in training but also the potential that trained knowledge and skills transfer to job performance. Thus, the general rationale behind the utility of affective learning outcomes (e.g., self-efficacy and goal setting) is that these attitudinal and motivational outcomes influence learning, performance, transfer, and other desired training outcomes.

Level 3: Behavior. The third level of training criteria has not changed much from Kirkpatrick's (1976) original conceptualization. It is important to emphasize the distinction between behavior criteria (Level 3) and learning criteria (Level 2). Behavior criteria refer to skill maintenance, transfer of training, job performance, and behaviors exhibited in the actual work context. Thus, learning represents the acquisition of behaviors, whereas transfer

represents the application of behaviors. Differentiating between behavioral-based learning outcomes and on-the-job behavior outcomes is critical in order to comprehend fully training evaluation.

An important aspect of Kirkpatrick's (1976) third level of training criteria, and transfer of training in general, is the attitudinal and motivational intentions of the individual to commit to and to implement learned material. Machin and Fogarty (2004) posited that these intentions are instrumental in making salient the aspects of the environment that are relevant to the achievement of set goals. Further, the authors specified that training-relevant implementation intentions are likely to influence the likelihood of using transfer enhancement procedures such as goal setting, practicing skills learned via training, and looking for opportunities to demonstrate the skills acquired during training. Smith, Jayasuriya, Caputi, and Hammer (2008) reported that goal intentions related to transfer intentions, and goal intentions mediated the relationship between proximal antecedents (e.g., training characteristics) and training outcomes (e.g., behavior). Without intentions to transfer the trained material, the individuals will lack motivation to use what they have learned and lack participation in strategies that foster higher transfer (e.g., skill maintenance and actively seeking opportunities to apply skills). As noted in Smith et al. (2008), transfer of training is an important outcome that requires follow-up measurement in the workplace; however, intention to transfer is a useful proxy. This proxy is even more compelling when the measure of intentions to transfer covers goal setting, motivation, intentions, and transfer climate (i.e., conduciveness of work environment to trained KSA utilization).

Level 4: Results. Results in Kirkpatrick's (1976) taxonomy refer to organizational outcomes and objectives such as productivity, turnover, costs, and absenteeism. Despite the importance of these training criteria, and emerging issues such as cost and utility analysis attracting more and more attention, it is beyond the scope of this study to address them.

Individual Differences and Training Effectiveness

Cannon-Bowers et al. (1995) emphasized the need to define the concept of training effectiveness, and advised against treating it as a simple, unidimensional construct. Furthermore, they declared that specifying and assessing various components (e.g., levels of Kirkpatrick's, 1976, taxonomy) is vital to establishing a full understanding of how and why training is successful. The *how* and *why* of training success, or effectiveness, is typically assessed from both the situation perspective and person perspective. Accordingly, two key features are accepted universally as influential determinants of whether a training program is effective: training design (situation) and trainee characteristics (person). Whereas historically the former feature has received the most attention (Goldstein & Ford, 2002), the latter has become a hot topic and focal point for research (e.g., Baldwin & Ford, 1988; Herold, Davis, Fedor, & Parsons, 2002; Tannenbaum & Yukl, 1992). Not enough focus has been on the learner within the learning context, and Tannenbaum and Yukl (1992) posit that when trainee characteristics are linked to training outcomes, investigators have typically opted to examine ability or trainability in lieu of dispositional factors.

Campbell (1989) quipped that trainees do not just fall out of the sky; they enter training with idiosyncratic experiences, attitudes, behaviors, and tendencies. Recognizing and addressing trainee uniqueness and the important influence that these individual factors

exert on training effectiveness is a fruitful endeavor. Although a majority of the research attention is devoted to training design, there are studies that have demonstrated relationships between individual differences and training outcomes. In addition, some of the most compelling dispositional sources of work and training outcomes involve the oft-researched indicators of CSE: general self-efficacy, emotional stability, locus of control, and self-esteem. However, to date, the training effectiveness literature is void of any specific investigations into whether the underlying latent trait (CSE) predicts variance in training outcomes.

CSE and Training Effectiveness

Rationale supporting the four indicators' (i.e., GSE, emotional stability, LOC, and self-esteem) influence on training has been covered to some extent, but it is imperative to understand the impact of the underlying construct, core self-evaluations. As there have been little or no investigations into the CSE-training relationship to date, much of the hypothesized impacts are inferential. As a basis for these conjectures, I will call upon several motivational theories as well as seemingly convergent findings from similar constructs and domains. As I cover the following theories, it is important to keep in mind that that forthcoming rationales consider CSE as the underlying cause of variation in each of the individual trait indicators, and define CSE as the fundamental assumptions individuals hold regarding their self-perceived competence, worth, and value.

A first theory, Lazarus's (1991) event information appraisal process, was previously discussed as a basis for CSE's impact on motivation, performance, and other work-related criteria. This process posits that the primary appraisal an individual makes in a given

situation refers to the positivity or negativity of the event (i.e., valence), and the secondary appraisal refers to who is perceived to be responsible for said event and whether or not it is manageable. In a training context, CSE should influence the primary and secondary appraisals, and thereby influence the motivation to engage in training (specifically, the direction, intensity, and duration of effort expenditure). Those low in CSE will tend to view training aspects negatively, deem training outcomes to be out of their control and unmanageable, and conclude that their efforts are futile. These self-referenced appraisals are mainly a function of low emotional stability (tendency to seek negativity), external locus of control (not believing in one's own agency), and general self-efficacy (not believing the task is manageable). Thus, even though individuals are experiencing the same training, individual differences in CSE will lead to differences in training outcomes. Thus, using Lazarus's (1991) process as a framework, trainees with high CSE will approach and leave training with a positive outlook, choose to engage in training activities, exert adequate effort throughout the training, and believe in their efficacy to influence training outcomes. For the purposes of this study, I propose that trainees with high CSE will reflect on training with more positivity (higher satisfaction and perceived utility), as well as demonstrate greater knowledge and skill acquisition (learning, performance, and transfer).

A second theory, social-cognitive theory (originally dubbed social learning theory), is related to CSE, mainly via self-efficacy. Social-cognitive theory was derived partly in response to the contemporary psychologists' (led by Albert Bandura) counter to the overly simplistic Skinner-esque depiction of radical behaviorism. Rather than non-rational stimulus-response behavior, social learning theorists proposed a rebuttal to the robotization

of humans and emphasized the role of voluntary cognitive decision-making. This cognitive processing is the impetus to deciding upon courses of action to take based on learned expectations and awareness of what will lead to desirable outcomes. Ilgen and Klein (1989) supported the notion that these cognitive representations of the pending outcomes generate motivation and behavior. Pinder (2008, p. 462) identified two areas of organizational research that social-cognitive theory has particular relevance: (a) cultivation of self-efficacy, and (b) the enhancement of motivation through goal setting. Further extrapolation allows one to infer that increased self-efficacy and increased motivation via goal setting will play a significant role in the training setting.

Bandura (1986) described a number of *human capabilities* inherent to social-cognitive theory. Several of these are particularly relevant to CSE: (a) anticipation and forethought capability, (b) self-regulatory capability, (c) self-reflective capability, and (d) intentionality. Anticipation refers to the notion that anticipated or expected outcomes drive human behavior. A positive self-regard contributes to the development of positive expectancies and a general belief that one's actions will lead to desired outcomes. Self-regulatory capability refers to planning, monitoring, and self-evaluative information that play a substantial role in learning and performance. Self-reflective capability refers to the human phenomenon of reflective cognition and is particularly beneficial to individuals with high CSE because they are "likely to take on tasks, set goals, alter goals, and attempt to master their environments if they positively assess their own capabilities" (Pinder, 2008, p. 461). The final capability mentioned above, intentionality, refers to the act of forming intentions and then acting upon them. All of the above are particularly relevant to CSE, with a positive

self-regard being the impetus to increased motivation and subsequent learning and performance. Through the social-cognitive lens, an individual with high CSE is likely to positively self-assess and anticipate valued outcomes, which thereby drives his or her intentions and initiates goal-driven behavior. Furthermore, the individual will accurately self-regulate learning and performance throughout the experience in an attempt to master the training experience. This will culminate in individuals with high CSE demonstrating higher levels of training outcomes.

A third theory that may provide rationale for CSE's influence on training outcomes is consistent with social learning theory's notion of cognitive-based expectations. Vroom (1964) and others' valence-instrumentality-expectancy theory (VIE) provides reasoning for how individuals use rational thought processes to guide behavior. The theory posits that individuals cognitively weigh the expectancy that a given behavior will lead to outcomes (e.g., training performance), that outcomes will be met with rewards (intrinsic and extrinsic), and that rewards will be valued by the actor. The choice of taking on a course of action and exerting the requisite effort is based on the individual's beliefs that outcomes can be achieved by his or her actions. Thus, from a holistic CSE standpoint, individuals with high CSE are cognitively aware of the behavior necessary to achieve desired training outcomes, value these rewards because they are consistent with their positive self-regard (self-consistency theory), deem themselves capable (GSE) and worthy (self-esteem) of succeeding, and understand that success and attainment of outcomes are due to their own agency (internal locus of control). Therefore, these individuals are more motivated, exert greater effort, are persistent, view setbacks as learning experiences (emotional stability), use effective tactics, and ultimately,

show better acquisition and application of trained knowledge and skills. Indeed, Noe (1986) showed that trainees were more motivated to perform well in training if they perceived that (a) high effort led to performance, (b) high training performance led to job performance, and (c) job performance was instrumental in obtaining desired outcomes and avoiding undesired ones.

A fourth theory that provides rationale for CSE's influence on training outcomes is goal-setting theory. Researchers have documented the motivational impact of goal setting and goal intentions. At the core, setting specific and difficult goals leads to higher learning and performance (Locke & Latham, 1990). Research demonstrates that individuals who set specific, difficult goals and who are committed to those goals are more likely to exert effort and perform at a high level (Locke, Latham, & Erez, 1988; Mento, Steele, & Karren, 1987; Tubbs, 1986). As previously mentioned, Mesmer-Magnus and Viswesvaran (2007) reported that goal setting yielded higher learning outcomes and improved not only training performance, but also the potential that trained knowledge and skills transfer to job performance. The previously stated findings apply to CSE, as Erez and Judge (2001) reported that CSE was correlated with motivation ($r = .39, p < .01$), goal setting ($r = .42, p < .01$), and goal commitment ($r = .59, p < .01$). Thus, in conjunction with relevant past research, I propose that individuals with high CSE are more likely to set goals, are predisposed to engage in higher levels of goal commitment, show higher levels of motivation, and ultimately demonstrate higher amounts of trained knowledge and skill acquisition and application.

A fifth rationale, self-concordance theory, supplements goal-setting theory, and posits that individuals are happiest and most productive when their goals match their enduring interests and values (Judge, Bono, Erez, & Locke, 2005). The higher an individual's CSE, the more positive the self-regard and the more goal self-concordance experienced (Luthans & Youssef, 2007). In addition, self-concordance begets intrinsic motivation, which further leads to the pursuit of goals driven by intrinsic value (as opposed to ulterior motivation induced by extrinsic reward). This launches an ongoing cycle because individuals are more likely to be intrinsically motivated to attain goals that align with their self-interests, and then the attainment of these goals reaffirms their positive self-regard. In fact, Judge, Bono et al. (2005) demonstrated in two separate studies that CSE was positively related to goal self-concordance, such that individuals with high CSE were more likely to pursue goals for intrinsic and value-congruent reasons. Further, self-consistency theory states that individuals are inclined to act in ways that confirm social- and self-perceptions, and that attitudes and behaviors will harmoniously perpetuate this match. This adds to the view that individuals will set goals that enable their self-image to remain intact, and when they attain these goals, reaffirmation is bestowed upon the individual. Some have stated that challenging and specific goals are key ingredients to successful training, learning, and performance. Thus, I propose that individuals with high CSE not only set goals that are difficult (in accordance with their high GSE and self-esteem) and consistent with their positive self-concept, but also possess the motivation to attain them so that the positive image of self is maintained. This combination of difficult goals that target positive performance and the intrinsic motivation to

put forth necessary effort should manifest itself in this study to result in successful training learning and performance.

A sixth theory that provides rationale for CSE's influence on training outcomes is Carver and Scheier's (1981) control theory. This theory posits that comparisons between one's standards and perceived performances results in attitudes and behaviors that strive to reduce resultant discrepancies. The three responses to discrepancies are (a) increasing effort to reach and maintain standards, (b) reducing standards to match performance, or (c) withdrawing from the task. Bandura and Cervone (1983) indicated that when individuals with high self-efficacy and internal locus of control are faced with this dilemma, they choose the first response. High emotional stability should also factor in this selection because it allows for maintaining focus, avoiding withdrawal-provoking anxiety, thinking of the discrepancy as a learning experience, and using negative feedback in a constructive manner. Additionally, an esteemed view of the self should remain unperturbed and prevent the individual from altering standards or relinquishing the opportunity and acting incongruently with their positive self-regard. In a training environment that may present new and complex challenges, I propose that an individual with high CSE will not only set higher standards of performance, but also maintain quality performance that matches the high standards derived from their positive sense of self-worth. In the instance where performance dips below expectations, rather than reducing standards or withdrawing, the individual will exert more effort to address the discrepancy and reach the preconceived levels of training learning and performance.

A seventh, and final, approach to theorizing why CSE may result in higher training outcomes is based on the theory of cognitive dissonance. Individuals with high CSE are more likely to engage effortfully in a course of action (e.g., training experience), and to persist in the face of failure. Well to avoid dissonance, and to avoid the thought of the training experience as being a waste of time and energy, the trainee with high CSE should justify the high amplitude effort expenditure by attaching value and perceived utility to it (viz. high Level 1 training reactions). Those low in CSE feasibly exert less effort and withdraw from difficult or disconfirming tasks and, therefore, need not explain away any dissonance. Dissonance theory also states that individuals strive to match behaviors to attitudes. Individuals with high CSE, or positive self-regard, must perform exceptionally well in order to match their self-prescribed sense of value and worth. This self-regard is stable and well grounded in individuals with high CSE and, therefore, these individuals will alter behavior to match their attitudes rather than vice versa. In harmony with the aforementioned control theory, this will result in the individual with high CSE rejecting the responses of lowering standards or withdrawing (response *a* and *b* from above) and will result in increased effort and motivation to increase performance levels to be consistent with their positive sense of self (response *a*). Thus, using cognitive dissonance theory as rationale, individuals with high CSE will demonstrate higher levels of training reactions, learning, and transfer.

Motivational decisions have a dispositional source that influences the creation of different self-set goals, assessments of situations, interpretations of situations, and reactions to these interpretations (Herold et al., 2002). Each of the previously mentioned theories is

suggestive of the dispositional influence that CSE could potentially have on training. Next I will cover the specific hypotheses that were formulated with the previously provided information as well as with the additional rationale I provide immediately prior to each specific one.

CSE and Level 1. Level 1 training reactions (Kirkpatrick, 1976; Alliger et al., 1997) refers to satisfaction with, and perceived utility of, training. CSE's linkages with other indices of satisfaction (e.g., subjective well-being, life satisfaction, and job satisfaction) have been covered throughout the paper, and the relationship is always positive. In conjunction with generalizing the previously referred to satisfaction indices to the training context, training satisfaction is expected to be positively impacted due to the tendency for an individual with high CSE to have a general positive outlook on life, and because those with low CSE (specifically high neuroticism) tend to selectively attend to and recall negative aspects of situations. High CSE is also expected to influence perceived utility of training. These individuals are likely to identify and tune into particularly relevant aspects of training, see the training as instrumental to attaining a desired outcome, and develop proficiency that is seen as both useful and desired.

Hypothesis 1: Core self-evaluations is positively related to (a) affective reactions, and (b) utility reactions to training.

CSE and Level 2. Level 2 (Kirkpatrick, 1976; Kraiger et al., 1993) learning outcomes refer to training-related knowledge and skill acquisition (i.e., cognitive, skill-based, and affective). CSE should influence the acquisition of cognitive and skill-based learning outcomes. First, individuals with high CSE are likely to approach training with a positive

attitude and with a desire to master trained content as a means of internalizing the trained knowledge and skills. Second, individuals with high CSE are likely to deem themselves capable of performing well in training, feel that the results of training will result from their own agency, and therefore exert appropriate motivation and effort. Third, those with high CSE are likely to set specific and difficult goals related to training, and show higher levels of commitment to those goals. Finally, those with high CSE are likely to engage in metacognitive strategy (e.g., planning, self-monitoring, and appropriate adjustment) in order to ensure training success. Further, high levels of learning and performance in training is consistent with the positive self-regard seen in individuals with high CSE, and any discrepancies perceived along the way should serve as motivation to increase effort intensity and achieve a level of learning and performance that matches the high standards that go along with having a positive self-regard.

Hypothesis 2: Core self-evaluations is positively related to cognitive learning outcomes as measured by (a) metacognition, and (b) end-of-course grades.

Hypothesis 3: Core self-evaluations is positively related to skill-based learning outcomes as measured by (a) reading proficiency scores, and (b) listening proficiency scores.

CSE and Level 2 (continued). The third component of Level 2 learning outcomes refers to affective learning outcomes, such as self-efficacy and goal setting. “Inasmuch as self-efficacy beliefs have to do with a person’s confidence about her capability to perform a particular task in a particular context, then deliberate training for that task-in-context ought to increase the strength of self-efficacy beliefs” (Pinder, 2008, p. 367). CSE is manifested in the general tendency to possess confidence in one’s capabilities across diverse situations

(e.g., GSE). Training should serve to increase self-efficacy beliefs for those individuals with high CSE, as they are likely to engage in the training, exert persistent effort, and glean more from the training experience. Erez and Judge (2001) reported that CSE was correlated with goal setting ($r = .42, p < .01$), and these findings should generalize to the training setting. Not only are individuals more likely to engage in goal setting behavior, but they are also more likely to set specific and difficult goals because these high standards are consistent with their highly esteemed self-regard.

Hypothesis 4: Core self-evaluations is positively related to affective learning outcomes as measured by (a) self-efficacy, and (b) goal setting.

CSE and Level 3. Kirkpatrick's (1976) Level 3 refers to the application of learned training knowledge and skills to the workplace. Erez and Judge (2001) not only showed that CSE was predictive of goal setting, but that CSE was predictive of goal commitment ($r = .59, p < .01$). This commitment to self-set goals plausibly means that trained knowledge and skills will be maintained and that goals will continue to motivate individuals past the confines of the training setting. This should result in increased motivation to transfer, intentions to transfer, and ultimately, actual transfer of training. Further, the individual high in CSE should show significantly higher post-training self-efficacy scores, which should influence the choice to engage effortfully in the trained knowledge and skills when back in the work setting.

Hypothesis 5: Core self-evaluations is positively related to transfer behavior as measured by (a) intentions to transfer, and (b) motivation to transfer.

Method

Sample and Procedures

The sample in this study consists of data that were gathered initially from approximately 420 military personnel who participated in foreign language acquisition training from around April 2008 to December 2008. The large military organization that provided the training imposes a requirement of language acquisition training for every member. The trainees comprised different cohorts based on when they entered training. The present study consists of two cohorts (Cohort A and Cohort B), each cohort consisting of approximately 150 to 300 trainees. There are a number of different target languages for the trainees to acquire, and the military organization places a trainee in his or her respective language at random. In addition to different languages, there are typically several different classes for each language in order to keep the student-to-teacher ratio at an acceptable level. Accordingly, after assigned a given target language, the trainees were randomly assigned to their respective class. Since trainees in this study were placed randomly in their respective target language and class, there is nothing to suggest that individuals comprising the different language groups, classes, or cohorts should be significantly different from each other. Students in the training were predominately male, and ranged in age from 18 to 50 years.

At the beginning of the training program, the trainees filled out a pre-training survey that assessed multiple constructs, including core self-evaluations. At the end of training, trainees completed a post-training questionnaire that, again, assessed multiple constructs. Among the constructs measured post-training were self-efficacy (affective learning outcome), goal setting (affective learning outcome), metacognitive activity (cognitive

learning outcome), intentions to transfer (behavior outcome), and motivation to transfer (behavior outcome). In addition to the post-training surveys, trainees completed aptitude tests to assess their foreign language proficiency. These tests consisted of two components of the Defense Language Proficiency Test (DLPT-Reading and DLPT-Listening; skill-based learning outcomes).

Measures

Core self-evaluations. Core self-evaluations (see Appendix B) was measured using the Core Self-Evaluations Scale (CSES; Judge et al., 2003). This is a 12-item instrument that uses a 5-point Likert-type response scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with a neutral point in the middle (*neither disagree nor agree*). Six of the 12 items are reverse-scored. This measure serves as an alternative to the indirect method of assessing CSE, which involves aggregating responses on the four individual scales (i.e., general self-efficacy, emotional stability, locus of control, and self-esteem) to form a composite. Not only is this direct measure more economical, but it advantageously measures the underlying latent cause of the four manifest indicators, which is likely to be more valid (Judge et al., 2003). In addition, the direct measure avoids past criticisms that (a) CSE's existence had to be inferred on the basis of its indicators, and (b) CSE was an aggregate construct rather than a latent construct.

Judge and colleagues (2003) developed the CSES with substantial rigor, using a series of studies to provide support for its structural and external validity. First, across six separate studies, alpha estimates were all above .80 (mean of .84), average item-total correlations ranged from .48 to .55 (mean of .50), all items were positively intercorrelated,

test-retest reliability was .81, and ICC value (.43) showed reasonable interrater reliability. Second, the CFA showed the *a priori* unitary factor structure to be the best fitting model. Third, the CSES demonstrated significant convergence with the four core traits (convergent validity), as well as clear divergence from other traits such as Agreeableness and Openness (discriminant validity). Lastly, the CSES showed empirical validity by demonstrating significant correlations with criteria such as job satisfaction, job performance, and life satisfaction; and by demonstrating incremental validity over the Five-Factor Model and over an optimally weighted composite of the four individual traits.

Training reactions (Level 1). Affective training reactions (see Appendix C) were assessed with eight items that tapped into the trainees' overall satisfaction and enjoyment with the training. The response format was a 5-point Likert-type format; that ranged from 1 (*dissatisfied*) to 5 (*satisfied*), with a neutral point in the middle (*neither dissatisfied nor satisfied*). Utility reactions (see Appendix D and Appendix E) referred to whether or not the trainees perceived the training as useful and relevant. The utility items involved content such as whether or not the training is applicable to their jobs, and whether training was successful in teaching job-relevant knowledge and skills. Participants responded to 4 items on a 7-point Likert-type response scale, that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*), including a neutral middle point (*neither disagree nor agree*), and to 3 items on a 5-point Likert-type response scale, that ranged from 1 (*dissatisfied*) to 5 (*satisfied*). Both affective reaction and utility reaction measures should show unidimensionality and sufficient reliabilities (alphas around .80), but I am unable to report exact instances of past

psychometric findings because the measures were created for the purposes of this training experience.

Cognitive learning criteria (Level 2). Metacognitive activity (see Appendix F) was measured with a 9-item scale derived from Ford et al. (1998). The measure used a Likert-type agreement scale with responses that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*), and included a neutral middle point (*neither disagree nor agree*). The scale consisted of an item stem (“From the midpoint of training through the end of training...”), followed by a series of statements that referred to engagement in metacognitive activities such as asking oneself questions during learning, monitoring one’s progress, and evaluating one’s own work. Although slight modifications were made to the scale, Ford et al. (1998) found their 12-item scale to show adequate reliability (alpha was .83). Additionally, Schmidt and Ford (2003) used a 15-item derivative of this same scale, which demonstrated a unitary factor structure (with factor loadings from .43 to .86), as well as adequate reliability (alpha was .92). There is nothing about the measure used in this study, nor anything about this training setting that suggests that this scale will demonstrate psychometric properties that deviate substantially from the previously reported studies. *End-of-course grade* is calculated using weekly quizzes and three to five module tests that administered throughout the training. These paper-and-pencil tests tap the declarative knowledge that trainees acquire up to the point of each administration, and cover both listening and reading

Skill-based learning criteria (Level 2). The knowledge and skills trained in this specific training context referred to targeted language proficiencies. A standard instrument, designed by the Defense Language Institute, measured this form of learning outcome. The

Defense Language Proficiency Test (DLPT) consists of two sections, listening and reading. These tests tapped into the language skill proficiency that trainees' acquired during training. Both sections of the DLPT were scored similarly; a trainee's score fell into one of seven proficiencies (0, 0+, 1, 1+, 2, 2+, 3), a higher score denoted greater skill proficiency. Although the scores for the listening and reading components of the DLPT are likely to correlate highly, they will be analyzed separately. Specific psychometric information is not available, but because these measures were developed according to well-defined linguistic tasks and assessment criteria, and because they are continuously used as a high stakes test by the United States Department of Defense (DoD), one can assume that they conform to psychometric standards.

Affective learning criteria (Level 2). Self-efficacy (see Appendix G) was measured with a scale specifically developed for the purposes of this training setting. The scale referred to one's confidence in his or her ability to perform successfully on specific task statements that were identified as critical by subject matter experts and other knowledgeable experts in the field. The scale consisted of eight items, that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*), including a neutral middle point (*neither disagree nor agree*). A stem preceded the scale ("In the language being trained, I am confident in my current ability to..."). Goal setting (see Appendix I and Appendix H) is an additional affective learning outcome and was measured by the personal goals that trainees set at the end of training. Two items were asked referring to the trainees' self-set goals, in which they indicated (a) magnitude of scoring on both DLPT-listening and DLPT-reading, and (b) strength, or confidence, in their ability to attain each respective goal. The magnitude scale

corresponded with the systematic scoring of DLPT tests: 0+, 1, 1+, 2, 2+, and 3. A stem preceded the strength dimension (“I am ___ % confident I will meet my goal”), and is scored from 0% to 100%, with 10% gradients (11 points in all). No studies have documented the psychometric properties of these specific self-efficacy and goal setting measures because they were designed for this training experience; however, they are expected to demonstrate unitary factor structures and adequate reliabilities (alphas of at least .80).

Motivation to transfer (Level 3). The training behavior criteria were measured using both intentions to transfer and motivation to transfer. Machin and Fogarty (2004) asserted that relevant transfer intentions likely consist of intentions to use transfer enhancement procedures such as goal setting, practicing skills learned in training, and seeking opportunities to demonstrate skills learned during training. The measure for motivation to transfer (see Appendix I) consisted of six items, and used a likelihood scale format. A stem was presented (“Please estimate the likelihood that you will...”), followed by response options that ranged from 0% to 100%, with 10% gradients (11 response options total). The items covered the trainees’ motivation to continue to develop the trained skills and to use the learned knowledge and skills in the transfer setting. The intentions to transfer measure (see Appendix J) consisted of four items, and used a Likert-type agreement scale that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*), with a neutral middle point (*neither disagree nor agree*). These items asked for the trainees’ intentions to transfer the trained knowledge and skills to the transfer setting. These items were developed for the purposes of this training experience, therefore no psychometric information is available. However, I expect these

measures to demonstrate unitary factor structures and adequate reliabilities (alphas of at least .80).

Controls

Task (training) complexity. Researchers must take into account differential task complexities when measuring and meaningfully comparing differences in post-training criteria. Task complexity in this training context is the pre-established levels of difficulty with which the various languages are learned. The present study will use a 4-level scale that is used by military organizations and other government agencies to assess language difficulty. The operationalization is the difficulty of a native English speaker to learn the targeted language (Silva & White, 1993). The various languages are placed in one of four categories, and the higher the category of the language, the more difficult it is (e.g., Category IV is the highest level of difficulty). Examples of the four categories that are reflected in this study include Spanish (Category I), German (Category II), Russian (Category III), and Arabic (Category IV). In controlling for language difficulty, the present study ensures that the results of the analyses are attributable to the investigated variables rather than to language difficulty.

Cognitive Ability (g). Cognitive ability (*g*) is a commonly used gauge for differentiating between individuals and is one of the most well validated predictors of desired work outcomes, including training criteria (Alvarez, Salas, & Garofano, 2004). Hence, I will control for cognitive ability in the present study in order to rule out the potential confounding or alternative explanation. Cognitive ability measures will consist of scores on the Armed Forces Qualification Test (AFQT), which are scores that the Department of Defense (DoD) is

mandated to measure and report as an indicator of the quality of its recruits. The AFQT is an overall score that is computed using four areas of the Armed Services Vocational Aptitude Battery (ASVAB): (a) Word Knowledge, (b) Paragraph Comprehension, (c) Arithmetic Reasoning, and (d) Mathematics Knowledge. I will treat this measure of cognitive ability as a continuous variable in the present study, and will statistically control for its influence on training outcomes. Ultimately, a dispositional variable warrants further exploration if it possesses the capacity to predict variance unaccounted for by *g*.

Training motivation. Training motivation is an oft-cited predictor of effective training outcomes (e.g., Alvarez et al., 2004; Tai, 2004; Tziner et al., 2007), and is defined as “the direction, intensity, and persistence of learning-directed behavior in training contexts” (Colquitt et al., 2000, p. 678). The present study controls for training motivation in order to ensure that CSE’s influence on training outcomes is attributable to its own variability rather than to variability in a confounding or alternative variable (i.e., training motivation). A key mechanism through which CSE is purported to influence training outcomes is via its facilitation of and catalyst for motivation, and therefore a portion of the variance is expected to be directly attributable to training motivation. However, CSE should still predict variance unaccounted for by motivation. Training motivation was assessed at the beginning of training via self-report (see Appendix K). The scale consisted of seven items, that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*), with a neutral middle point (*neither disagree nor agree*). The content of the scale referred to the trainees’ motivation to acquire language skills, master the training content, and participate in the training experience. If CSE accounts for variance in training outcomes beyond that attributable to training

motivation, then this will provide evidence for the robust predictability of the dispositional construct.

Proposed Analysis

The purpose of the present study is to delve into the latent construct of core self-evaluations by testing its ability to predict reactions, learning, and behavior outcomes. There is abundant evidence supporting the utility of CSE in various work settings and with various work-related outcomes, but little to no research to date that explores CSE's relationship with training. Investigating the predictive validity of a promising broad dispositional trait in a previously untapped context is an important next step. If CSE demonstrates the ability to predict variance in important training criteria then it would further support the proposition that it is a broad dispositional source of variation in a variety of work contexts.

Main Effects of CSE on Training Outcomes

First, I will calculate descriptive statistics (i.e., means and standard deviations) and intercorrelations for the study variables. I will then conduct the initial regression analyses without controlling for cognitive ability or training motivation. However, task complexity (i.e., language difficulty) will be controlled for. Core self-evaluations will be the continuous independent variable in all cases, and a separate regression analysis for each of the continuous outcome variables will be conducted. In each initial regression, the investigation will consist of looking for whether or not CSE, in and of itself, predicts a significant amount of variance in the different training outcomes. Hence, utility reactions will be regressed upon CSE, then affective reactions will be regressed upon CSE, and then cognitive learning outcomes will be regressed upon CSE, and so on, until all of the dependent variables have

been analyzed individually with CSE as the predictor. For clarification, I will conduct each of the aforementioned regressions completely independent of each other (not a step-wise regression) in order to assess the impact CSE has on each outcome independently. I will use hierarchical regression in the next step of the analyses, which involves investigating whether CSE predicts variance unaccounted for by cognitive ability and training motivation.

Controlling for Cognitive Ability and Training Motivation

If the previous set of analyses reveals no main effects then there is no reason to proceed with the inclusion of cognitive ability (*g*) and training motivation as controls. Assuming main effects were found in previous analyses, *g* and training motivation will be controlled for using hierarchical regression. The control variables (i.e., *g* and training motivation) will be included as covariates, and the unique variance in outcomes accounted for by CSE will be reported. Hence, the unique effects CSE has on utility reactions controlling for these predictors will be reported, followed by the unique effects CSE has on affective reactions, and so on, until all relationships have been tested. If CSE predicts a significant amount of variance in the training outcomes despite controlling for both *g* and training motivation, then the utility of CSE to predict variance unaccounted for by two of the strongest predictors of training outcomes (Alvarez et al., 2004) will be supported. These steps will be repeated for each of the separate training outcomes until the predictive validity of CSE above and beyond that of *g* and training motivation is explained.

APPENDIX B

1 = Strongly Disagree, 2 = Disagree, 3 = Neither Disagree nor Agree, 4 = Agree, 5 = Strongly Agree

“Please review the statements below. For each statement, use the scale shown below to indicate the extent to which you agree or disagree with each statement. (Source: Judge et al., 2003)”

Core Self-Evaluations Scale

I am confident I get the success I deserve in life.

Sometimes I feel depressed. (reverse-scored)

When I try, I generally succeed.

Sometimes when I fail I feel worthless. (reverse-scored)

I complete tasks successfully.

Sometimes, I do not feel in control of my work. (reverse-scored)

Overall, I am satisfied with myself.

I am filled with doubts about my competence. (reverse-scored)

I determine what will happen in my life.

I do not feel in control of my success in my career. (reverse-scored)

I am capable of coping with most of my problems.

There are times when things look pretty bleak and hopeless to me. (reverse-scored)

APPENDIX C

1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neither Disagree nor Agree, 5 = Somewhat Agree, 6 = Agree, 7 = Strongly Agree

“How satisfied are you with each of the following?”

Affective Reactions

Course textbooks and workbooks.

Quizzes and tests.

Pace of instruction or presentation of training content.

Total length of training (i.e., total hours of instruction).

Classroom's physical environment (e.g., temperature, lighting, etc.).

Overall effectiveness of the instructor.

Overall quality of the course/training.

Overall quality of the materials.

APPENDIX D

1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neither Disagree nor Agree, 5 = Somewhat Agree, 6 = Agree, 7 = Strongly Agree

Utility Reactions

I believe that the language training I have just received will prepare me for situations that I will encounter when I am deployed.

The training that I just received will help me to become a better SOF operator.

The language skills that I learned during training will help me to perform better on my missions.

My mission will afford me the opportunity to fully use the language skills I just learned in this training.

APPENDIX E

1 = Dissatisfied, 2 = Somewhat Dissatisfied, 3 = Neither Dissatisfied nor Satisfied, 4 = Somewhat Satisfied, 5 = Satisfied

Utility Reactions

Extent to which the training provided me with the skills to continue learning this language on my own.

Extent to which the training provided me with a base of language proficiency.

Overall usefulness of the training.

APPENDIX F

1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neither Disagree nor Agree, 5 = Somewhat Agree, 6 = Agree, 7 = Strongly Agree

Metacognitive Activity

“From the midpoint of training through the end of training...”

I asked myself questions to make sure I understood the things I had been trying to learn.

I set goals for myself in order to direct my learning activities.

If I got confused I made sure I sorted it out as soon as I could before moving on.

I thought about how well my tactics and strategies for learning were working.

I thought about how well I had learned material I had previously studied.

I thought about what skills needed the most practice.

I thought about what things I needed to do to learn.

I noticed where I made mistakes and focused on improving those areas.

I tried to think through each topic and decide what I was supposed to learn from it, rather than just jumping in without thinking.

APPENDIX G

1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neither Disagree nor Agree, 5 = Somewhat Agree, 6 = Agree, 7 = Strongly Agree

Task-Specific Self-Efficacy

“In the language being trained, I am confident in my current ability to...”

Read and understand road signs.

Describe transportation routes.

Describe the main terrain features on a military map.

Discuss local weather.

Name the main parts of the human body.

Discuss medical aid.

Discuss operational terminology.

Discuss my [your] mission with my [your] point of contact.

APPENDIX H

1 = 0, 2 = 1, 3 = 1+, 4 = 2, 5 = 2+, 6 = 3

“Please indicate below your personal goal for proficiency at the end of training.”

Personal Goals

“Listening.”

Personal goal for proficiency at the end of training: ____ .

“Reading.”

Personal goal for proficiency at the end of training: ____ .

APPENDIX I

1 = 0%, 2 = 10%, 3 = 20%, 4 = 30%, 5 = 40%, 6 = 50%, 7 = 60%, 8 = 70%, 9 = 80%, 10 = 90%, 11 = 100%

Motivation to Transfer (Likelihood)

“Please estimate the likelihood that you will...”

Volunteer for unit-sponsored refresher training.

Do any language self-study.

Maintain the standard (e.g., 0+/0+or 1/1) on the DLPT.

Volunteer for mission tasks that require language skills.

Use your language on missions when you have an opportunity.

Improve your language proficiency.

APPENDIX J

1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neither Disagree nor Agree, 5 = Somewhat Agree, 6 = Agree, 7 = Strongly Agree

Intentions to Transfer

I am motivated to use the language skills that I have learned in training on the job.

I intend to use the language skills that I learned during training on deployments in my AOR where this language is used.

I intend to volunteer for duties where I can practice and use my language skills.

I am motivated to continue to develop the language skills that I have acquired.

APPENDIX K

1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neither Disagree nor Agree, 5 = Somewhat Agree, 6 = Agree, 7 = Strongly Agree

“Please respond to the following items regarding your attitudes toward learning foreign languages and participating in language training.”

Motivation to Train

I am motivated to learn the language I have been assigned.

I would like to learn as many languages as possible.

I would participate in this language training even if it was not a requirement.

I am motivated to perform well in language training.

If I learn to speak this language well, I will have many opportunities to use it.

I will try to learn as much as I can from this language training.

I am motivated to develop mastery of this language.