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EXPLORING THE CONCEPT OF SELF-CREATIVITY THROUGH THE  
VALIDATION OF A NEW SURVEY MEASURE

A Dissertation

Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for  
the degree of Doctor of Philosophy

By

Alexandra D. Varela

December 2017

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Alexandra D. Varela

2017

## ABSTRACT

# EXPLORING THE CONCEPT OF SELF-CREATIVITY THROUGH THE VALIDATION OF A NEW SURVEY MEASURE

By

Alexandra D. Varela

December 2017

Dissertation supervised by Matthew J. Bundick, Ph.D.

The purpose of this investigation was to validate a newly constructed instrument, the Creativity Assessment for the Malleability of Possible Selves (CAMPS) and, through that process, operationally define the newly developed construct of self-creativity. This dissertation utilizes three separate studies to validate the CAMPS and operationally define self-creativity, including samples intended to represent the general population ( $n = 199$ ), professional counselors ( $n = 133$ ), and exemplars of self-creativity ( $n = 13$ ). Study 1 utilized an exploratory factor analysis for the initial item reduction and factor structure exploration, followed by testing convergent and discriminant validity utilizing established assessments of creativity, personality, and depression. Through this process, 16 items and six factors emerged, as did the initial parameters for the self-creativity operational definition. Study 2 utilized a confirmatory factor analysis to confirm this 16-item, six factor model, the results of which supported a good model fit. Study 3

utilized semi-structured interviews with exemplars of self-creativity for the purpose of determining face validity of both the CAMPS and the conceptual definition of self-creativity, as well as to provide feedback on the overall experience of completing the assessment. Hypothetical and practical implications of these results and recommendations for future research are discussed.

## DEDICATION

To my husband, who has always been my biggest inspiration and support, I love you forever and more than that. And, for my Grammie who always told me I could achieve anything if I tried, I know you would be proud.

## ACKNOWLEDGEMENT

I would like to thank Dr. Matthew Bundick for serving as my dissertation chair and as my mentor throughout my time as a graduate student, you have been an enormous help to me and consistently awesome to work with, I can never thank you enough for that. Thank you, Dr. Carol Parke, for your expert guidance with my data analysis and interpretations. Thank you, Dr. Jered Kolbert, for providing feedback on my dissertation and guidance throughout my studies. You have all been invaluable in my development as a researcher and I am deeply grateful. I would also like to thank Dr. Bethany Novotny for her willingness to participate as a participant screener, and for her friendship and support. Finally, I would like to thank my family for always supporting me and cheering me on, y'all are the best and I love you.

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## Chapter One: Introduction

### Overview

Growth and change are part of natural human development; we age, transition through developmental stages, contend with life challenges, and develop a unique identity. Since the inception of the field of mental health, working with individuals on these issues has been a driving factor in theory development (Dumont, 2014). Practice-informed theory development underlays some of psychology's seminal work, from Freud's (1905) conception of psychoanalytic theory to describe growth, change, and unconscious desires (Safran & Kriss, 2014) to Adler's 12 key principles for conceptualizing clients (Maniacci, Sackett-Maniacci, & Mosak, 2014), marking a move away from the tenants of psychodynamic theory. In the second half of the 20th century, behaviorism became the dominant force in mental health for conceptualizing human behavior and change. The focus was primarily on the external environment and its influence on the individual (Antony, 2014). Over time, behaviorism began to incorporate cognitive theories and shift the focus of conceptualizations of human growth and change to link the internal and external environments (Beck & Weishaar, 2014). From this wave, came the theory of possible selves and the basis for the current investigation.

The theory of Possible Selves developed by Hazel Markus and Paula Nurius (1986) sought to describe human development and change as occurring from the drive to achieve or prevent possible future selves. These scholars define possible selves as the

“ideal selves we would very much like to become. They are also the selves we could become, and the selves we are afraid of becoming.... Possible selves derive from representations of the self in the past and they include representations of the self in the

future. They are different and separable from the recent or now self, yet are intimately connected to them.” (p. 954)

These possible selves are hypothesized to serve two primary functions: (a) providing a framework for interpreting past behaviors and guiding future behavior, and (b) providing meaning for the individual’s current behaviors. In both seminal studies (e.g., Markus & Nurius, 1986; Oyserman & Markus, 1990) and contemporary studies (e.g., Carroll, 2014; Nazar & Van der Heijden, 2014; Oyserman, Destin, & Novin, 2015; Oysterman & James, 2011) the first function, the framework for interpreting past behaviors and guiding future behavior, is operationalized as goal setting whereas the second function, providing meaning for the current behavior, is described as the evaluative piece for comparing present behaviors to the likelihood of a desired goal being achieved. Furthermore, it is hypothesized that these possible selves exist in all individuals and that these conceptualizations of self are readily available to the individual. These notions provide the conceptual basis for the current investigation.

### **Statement of the Problem**

Previous research has neglected to explain how some individuals are able to create a markedly different and viable self; the aim of this dissertation is to illustrate that the new construct of self-creativity is a piece of this answer through the development of an assessment tool and operationalization of the construct. Previous research describes external factors (such as socioeconomic status, neighborhood disadvantage, and role models) and internal factors (such as personal strengths and weaknesses) as significant in forming the possible future selves; these future self-concepts can be desirable or feared and are hypothesized to act as further moderators for behavior (Markus & Nurius, 1986; Oysterman & James, 2011). Oyserman, Johnson, and James (2011) noted that individuals are motivated to work toward identities that are believed to

attainable by people they see as similar to themselves and avoid identities that are attained by people they cannot or do not identify with. The authors describe two hindrances in the pursuit of a future self: difficulty clearly conceptualizing a future self, or believing that a future self is too different from the current self. Ibarra (1999) investigated the construction and modification of identities in young business professionals who were newly or soon-to-be in a new position within the firm they currently worked. Finding that in negotiating these new professional identities individuals used a variety of methods including use of both external and internal evaluations, as well as modeling and experimenting with provisional selves. The relevance of these findings to the current investigation are that while a pathway to testing and refining possible identities are described, the initial construction of the new professional self—the ability to conceptualize the self as seeing this new role as attainable—has as of yet not been explored. These subjects were shifting roles within a self-schema that logically existed together, even if by proxy; the subjects were in a transition period to more senior roles within an industry they were already a part of and the new self as described by the researchers was a matter of adaptation, not necessarily reconfiguring the self-concept. The process of adaptation is described as expanding the identity via role models, experimentation with and evaluation of existing identities, but this is a described process of adaptation and not creation of a new and uncharted identity. The creation of a new unique identity would necessitate a step prior to the aforementioned steps; it would follow from this aforementioned line of logic that behaviors would need to be modeled and then replicated as described previously in this section (e.g., Markus & Nurius, 1986; Oysterman & James, 2011). Though, as previously described this is not solely enough to facilitate a change in trajectory (Carroll, 2014). Therefore, significant change in life trajectory would require that individual be able to envision the role as viable for the self to pursue and fully conceptualize this identity.

This dissertation will explore what makes some able to construct a future self that is both unique in relation to the current self-incarnation and viable while others flounder in unattainable perceptions of self, thereby creating future selves that may be significantly different but not viable. This exploration occurred through the development of a survey instrument and the operationalizing of the proposed construct of “self-creativity,” which is the ability for individuals to view themselves in new and unique ways and create a new viable self based on that self-knowledge. The importance that this construct be explored is the significant and lasting impact that stagnation or incongruence can have on a life (Waterman, 1982).

This notion of self-creativity draws on the robust literature on the broader construct of creativity, which has traditionally been defined as the use of the imagination or novel ideas, especially in the production of an artistic work (Kaufman, 2012; Kaufmann, 2003). Historically, assessing creativity focused on divergent thinking tasks, self-report, and subjective assessments. However, the present investigation seeks to understand the concept of creativity as it pertains to the self, and changing the perception of what the self could be; consequently, established measures of creativity are inadequate for the proper assessment of self-creativity. As such, in addition to advancing a conceptual argument for the distinct nature and importance of the construct of self-creativity, this researcher further aims to develop a new measure for its assessment.

### **Purpose of the Study**

The literature on changing self-perceptions places strong emphasis on the impact of social scaffolding in the external environment such as mentors or exposure to careers, while little emphasis has been placed on the individual's actual ability to manifest these new perceptions of self (Oyserman et al., 2011; Oysterman & James, 2011). Research on the topic suggests possible

selves are both easily accessible and as a used for motivation; I argue the former to not be universally true. There is a breadth of research indicating that attempts to attain new perceptions of self are also likely to occur in conjunction with significant negative life events (Hayes et al., 2007). The implication of the discontinuous life trajectory research to the current study is the moderating effect this has on the necessity for social scaffolding to construct new possible selves. Furthermore, this research highlights the notion that not all individuals who experience significant negative life experiences will work toward change. Additionally, through experience as a counselor working within both a forensic and addiction populations where many individuals were not able to see a possibility for change, and in observation of peers who have been provided the exposure to multiple life trajectories but did not ultimately attain a life that was desirable for them, this facet of the theory has not consistently held up against the reality of many lives personally and professionally observed. This observation, which problematizes the theory of possible selves, raises the question of what differentiates individuals who make significant life changes, reconfiguring the trajectory to a desirable life course, from those who cannot? Part of that answer may lie in the individual's self-creativity.

A related field of inquiry exploring people's ability to perceive things differently is in the domain of divergent thinking, which falls under the umbrella of creativity. However, creativity research usually focuses on the creation of artistic products or divergent thinking tasks (e.g., Benedek, Mühlmann, Jauk, & Neubauer, 2013; Runco & Acar, 2010) rather than individuals' ability to perceive themselves in new ways, allowing them to see their futures as different from their present and begin to create a viable path to attain that future. This is what the operationalization of self-creativity in this study can begin to explore. The concept of self-creativity is derived from four major areas of research: possible selves, divergent thinking,

mindset, and insight. To empirically explore this new construct of self-creativity, this researcher has developed a new measurement tool called the Creativity Assessment for Malleability of Possible Selves (CAMPS). The CAMPS evaluates individuals based on the tenets of divergent thinking, creativity, and factors specific to the self-creativity construct.

This investigation has two distinct purposes. The first is to create a reliable and valid instrument to measure self-creativity, and the second is to develop an operational definition of the construct. The following research questions will be addressed in this dissertation:

- 1) What is the operational definition of self-creativity?
- 2) What are the psychometric properties of the Creativity Assessment for the Malleability of Possible Selves?

To address these questions, three studies were executed. Study 1 consists of participants who are members of Amazon Mechanical Turk (MTurk), a crowdsourcing data validation site. These data have been previously collected, but not analyzed, during an Institutional Review Board (IRB) approved study. The participants in Study 1 were given the CAMPS and three additional assessments electronically. Data from this population was analyzed through exploratory factor analysis and provided a framework for Study 2. Study 2 data was also previously collected but not analyzed in an IRB approved study. Participants in this study were gathered through professional social networking sites and professional listservs, and given the same assessments as Study 1 participants. Data from these studies will provide the means to address question 2 wholly through the validation process and provide a framework to address question 1, as well as set the foundation for Study 3. Study 3 data consist of an “exemplar population” meaning these individuals will demonstrate self-creativity. These individuals were screened for appropriateness then provided the conceptual definition and operationalized

definition of self-creativity, and provided the full 63 item version and final 16-item version of the CAMPS. These individuals were interviewed in person, via email, or over the phone (depending on distance and participant availability) with the purpose of determining face validity of the CAMPS, if the assessments seem to test the construct, and to determine if the individual would score high on the assessment. The responses by this exemplar population in the interview will complete the answering of both research question 1 and research question 2.

### **Potential Significance**

This is the first investigation to examine the internal psychological mechanism that facilitates the construction of a viable future self, the construct this researcher calls self-creativity. The study of possible selves, identity development, and insight have approximated this notion of self-creativity through, respectively, the description of evaluating possible trajectories, moving through stages of self-development, or gaining knowledge of the self (e.g., Kounios & Beeman, 2014; Kroger, 2003; Markus & Nurius, 1986); however, none of these specific disciplines have directly explored the mechanism of self-creativity that lies at their intersection. The current investigation is thus the first to synthesize these constructs to create a new descriptive explanation of human development. This work has the potential to contribute to the field of mental health counseling in two distinct ways. First, in terms of its scholarly contribution, it gives a name to and elucidates the conceptual underpinnings of the construct of self-creativity, and provides a means for assessing the construct. Second, in terms of its clinical contribution, awareness of the construct and how it may operate can help to reorient counselors toward an underlying mechanism of some of their clients' dysfunction, and the assessment could prove to be a powerful tool in assessing clients. In particular, providing clinicians a framework for conceptualizing and a reliable and valid means to assess for self-creativity has the potential to

clarify treatment plans by increasing their focus on this type of self-perception rather than an often misplaced focus on a client's perceived lack of motivation or ability. The findings of this study may further benefit clients by providing a rationale and path toward breaking free of feeling stuck on the wrong life trajectory. The conceptual and scholarly contribution was primarily addressed in Chapter 1, through the introduction of the topic, in Chapter 2, through the exploration of foundational literature, and in Chapter 5, through the synthesis of the quantitative data and the conceptual data. The clinical and practical contribution will be primarily addressed in Chapter 3 and the description of methodology and psychometric properties described in Chapter 4, as well as through the implications explored in Chapter 5 of this dissertation.

### **Summary of Methodology**

Conceptualization of the self-creativity construct and collection of some of the data related to the scale development for this current study was collected during this researcher's graduate assistantship. IRB approval for these components of the present study was also obtained as part of this researcher's graduate assistantship, before any recruitment occurred or data were collected. In order to operationalize the construct of self-creativity, the construction of an assessment was determined to be the most accurate method for reliability and validity testing (e.g., Duckworth, Peterson, Matthews, & Kelly, 2007). In order to validate the CAMPS, other existing validated assessments that relate to facets of the construct were given in tandem with the CAMPS initial set of items to create one test battery, including the Creative Personality Scale (CPS), Big Five Inventory (BFI), and Center for Epidemiologic Studies Depression Scale – Revised (CESD-R).

Data for Studies 1 and 2 were collected using the online crowdsourcing site Amazon Mechanical Turk, and recruitment was conducted via professional networking sites LinkedIn and

American Counseling Association discussion boards. For Study 3, for the purposes of demonstrating further face validity of the CAMPS measure, one additional small group of exemplars of self-creativity were recruited via convenient purposive snowball sampling. Sampling procedures began with potential participants selected who demonstrate self-creativity; this individual was vetted by a secondary non-biased researcher. Once approved, the participant was given the assessments and asked to refer others who also may meet criteria to the study. Those individuals were then screened and that process continued until completion. This participant group was only administered the CAMPS and provided qualitative feedback on the face validity of the assessment.

First, all quantitative data was cleaned to ensure all data used in the analysis are viable, including checking for sufficient completion, imputing missing data, and scanning for invalid responses (e.g., straightlining). Next, two sets of factors analyses were run to test the factor structure of the CAMPS, including an exploratory factor analysis to explore emergent factors followed by a confirmatory factor analysis to test whether the factor structure that emerged from the EFA holds in a new sample. Convergent validity was also tested by investigating relations between the final CAMPS measure and administered established measures of creativity and personality, and discriminant validity was tested by investigating relations with a conceptually largely dissimilar construct of depression.

This final version of the CAMPS was then subjected to another test of its validity; the assessment was given to a small purposive sample of participants who are thought to be exemplars of self-creativity, who were thus expected to score highly. These results were then analyzed for content validity through use of an additional questionnaire with both closed- and open-ended response options about the subjective face validity of the CAMPS.

## **Limitations**

The most significant limitation of this investigation is all participants for study 1 and study 2, as explained in the methodology section, are collected as self-reports using solely electronic means. Because of the inherent challenges of self-report data in general and the nature of the assessment being given solely online, this researcher was unable to assess for continued motivation to honestly answer all question and could not receive in vivo and synchronous feedback about the question construction. Additionally, some challenges lie in using primarily quantitative data to investigate and provide the foundation for a dynamic construct. That said, these limitations are broadly understood as inherent to the process of establishing new approaches to measuring a novel construct.

## **Definition of Key Terms**

To provide a foundation of conceptual understanding of this dissertation, the following terms for CAMPS, self-creativity, and viable self have been defined.

**CAMPS** - Creativity Assessment for the Malleability of Possible Selves

**Self-Creativity** - The ability for an individual to perceive a viable future self that is markedly different from the current self.

**Viable self**- attainable based on individual abilities

## Chapter Two: Literature Review

### Introduction

Identity is a broad term that encompasses many facets of awareness in the human experience including personal characteristics, cultural identity, sexual identity, racial identity, and social identity (e.g. Berzonsky, Macek, & Nurmi, 2003; Gleason, 1983; Kroger, Martinussen, & Marcia, 2010; Marcia, 1980; Rosario, Schrimshaw, & Hunter, 2011). The development of a personal identity is a multifaceted process that is impacted and influenced by the sense of self, societal norms, and collectivist facets such as family or religion (Berzonsky et al., 2003; Kroger, 2003). Erikson's (1968) psychosocial development theory paired with Marcia's (1966) identity statuses theory are seminal in the development and exploration of contemporary identity research (Kroger et al., 2010). Loevinger, (1976) described identity development as occurring over nine stages with unique levels, each with its own characteristics and challenges. The majority of adults will likely be in the conformist stage/self-aware level, meaning that individuals will follow social norms while also being receptive to the internal emotional responses of these experiences. Marcia (1980) described identity development as a lifelong process, though adolescence is significant in that an adolescent who possesses a well-developed identity is more likely to be open to experiences thereby effectively coping with the subsequent developmental crises with consistency of self. Identity is constructed by each decision made, with the consequences dictating a path for the individual to navigate in the world and the self (Marcia, 1980).

Berzonsky et al. (2003) examined the relationship of identity process to the identity content and identity structure of American, Czech, and Finnish male and female college students. These researchers defined processing style as the method an individual may use to cope with identity conflicts; they define identity content as social, personal, and collective sense of self;

and they define identity structure as commitments and convictions. The researchers further dissect the processing style into three subsets: normative, which entails reactively dealing with identity issues and internalizing the beliefs of others; informational, which involves proactively dealing with identity issues with openness to experiences; and diffused/avoidant, which attempts to avoid dealing with identity issues and of the lacks insight. Findings indicated that despite culture, “the process by which youth negotiate identity issues and make personal decisions was related to the type of attributes they use to anchor their sense of identity and the extent to which their identities were structured and integrated” (p. 16). The significance of this study is the reinforcement of the concept that identity development is a recursive process that relies on an inner self-regulatory process and attending to external variables. The primary function of these identity processing styles is the preserve the sense of self and cope with threats to that sense of self, indicating that the mindset of the individual as these threats are encountered may play a significant role in the utilized coping strategy. The latter two aforementioned processing styles indicate not only a potential lack of insight but a lack of ability to objectively evaluate the self in a way that allows for self-determined growth.

These aforementioned studies and developmental perspectives provide the framework that guides the present study. The aim of this following literature review is to introduce the foundational topics that comprise the self-creativity construct and give credence to the conceptual definition. The review of literature will primarily focus on the theory of possible selves, while interweaving the concepts of divergent thinking, insight, and mindset. Searching for appropriate literature to complete this process will involve a two-pronged approach; finding the foundational literature of the theory of possible selves and contemporary literature of all the aforementioned concepts.

## Theory of Possible Selves

Markus and Nurius (1986) advanced the self-concept research with their introduction of their theory of “possible selves.” Self-knowledge is at the crux of this theory, specifically related to the way that an individual may think about his or her future potential. According to Markus and Nurius:

Possible selves derive from representations of the self in the past and they include representations of the self in the future. They are different and separable from the current or now selves, yet are intimately connected to them. Possible future selves, for example, are not just any set of imagined roles or states of being. Instead they represent specific, individually significant hopes, fears, and fantasies.  
(p. 954)

The aforementioned researchers see possible selves as serving two primary functions: (a) regulating behavior, and (b) clarifying the current perception of one’s self by providing a contextual lens of viewing the current self. First, possible selves are believed to regulate behavior by providing a framework of past and future behavioral interpretations for each individual. Ergo an individual will, ideally, evaluate past behavioral choices by comparing the result to a future self-concept and continue to act accordingly or make changes so that the desired future self can be attained or a feared future self can be avoided. The second function of clarifying and providing context manifests through social means (Carroll, 2014; Markus & Nurius, 1986; Oysterman & James, 2011). Markus and Nurius (1986) illustrate this concept through the example of an individual who possesses a feared self of being alone, having a lunch date cancelled on her. Because of this existing feared future self, the individual is likely to interpret her own behaviors as well as the intentions of the canceller in a negative manner or

react with a strong and potentially negative self-critique as this would give credence to the feared future self coming to fruition (Carroll, 2014). In contrast, an individual who does not possess this potential feared future self may interpret this occurrence in a more benign fashion not critiquing the self or the other's intentions in a prescriptive manner. Markus and Nurius (1986) make the assumption that these possible selves do exist in all individuals and that all individuals can easily access these possible selves. The possible selves primarily include incarnations of the unwanted/feared self and the hoped for self. These two possible self-states are the driving force of the theory and will be discussed in the subsequent section of this manuscript.

**The feared self and the hoped for self.** The feared self comprises all the aspects an individual knows he or she does not want to become; for example, a feared self could be an addict, homeless, or a college dropout (Markus & Nurius, 1986). These feared selves can function as a behavioral motivator, for instance an individual may conceptualize a feared self, thereby motivating that individual to avoid behavioral choices that could result in the achievement of the feared self (Markus & Nurius, 1986; Oyserman & Saltz, 1993; Oyserman et al., 2015). The hoped for self, opposite of the feared self, comprises all the aspects an individual would very much like to become. Much of research focuses on the hoped-for-self and the implications for motivation to achieve that future self (Markus & Nurius, 1986; Oyserman & James, 2011). Therefore, just as an individual may avoid behaviors that would lead to a feared self the individual may engage in or increase behaviors that would result in the attainment of the hoped-for self. For instance, an individual who possesses a hoped-for self of becoming a doctor may study avidly, enroll in pre-med courses, and avoid criminality to assure the hoped-for self can one day be the present self.

According to Frazier, Hooker, Johnson, and Kaus (2000), both feared and hoped for future self-states are relatively stable over time among older adults. This study focused on “the domains of health, physical functioning independence/dependence, and lifestyle” to explore the longitudinal stability of health related self-states (Frazier et al., 2000). Participants were recruited through nursing homes and were interviewed by doctoral candidates for approximately one hour about these areas of health. Findings indicate that most of the domains remain stable over time, particularly independence, physical functioning, lifestyle, and those related to family. This stability indicates that, in old age, future selves focus more on preservation than development. Feared selves related to physical health seemed to change most significantly as these factors are most strongly associated with the aging process. The interplay between these self-states seemed to show that in individuals who possessed feared selves related to independence they also increased their hope for selves related to family, and those who had family related feared selves also perceived having more control over health. The study concludes with the reflection of the role adaption and assimilation to new self-images play in the aging process. As it pertains to the current study is that the findings could be extrapolated to mean that if the hoped-for and feared self does not change over time then aspirational motivation may also remain stable as well, resulting in an individual who does not change from the current self-state.

These self-states have been researched in varying contexts including delinquency, work life, and overall identity. For example, Knox, Funk, Elliott, and Bush (2000) investigated relations among possible selves, gender, and self-esteem in adolescents. Participants were asked to come up with as many possible selves he or she could. These selves were then categorized into sub-categories of feared and hoped-for selves. The researchers found that girls perceived

feared selves as more likely attainable than boys, girls feared selves were more often related to interpersonal functioning, and boys feared selves were more often related to occupation, general failure, and inferiority. However, no differences were found in the realm of conceptualization or attainment of hoped-for selves. This study poses two primary conclusions relevant to this dissertation: (a) gender differences exist primarily in the conceptualization of the feared self, and (b) perception of attainment of hoped-for selves were consistent between genders. The significance of this study to the present dissertation is individuals seem to have difficulty conceptualizing what is actually attainable; the participants were able to conceptualize more hoped-for selves ( $M=8.00$ ,  $SD=4.35$ ) than feared selves ( $M=5.38$ ,  $SD=3.37$ ) on a constructed scale ranging 1-19 possible selves. On average, participants believed the hoped-for selves that they choose were only moderately achievable  $M=5.52$  on a Likert scale ranging from 1-7, whereas feared selves showed approximately  $M=3.30$ ; resulting in a normal curve for each. These results bolster one of the underlying hypotheses of the self-creativity construct that, on average, individuals have difficulty conceptualizing a viable future self, whether that future self be feared or hoped for.

Another study that further describes the conceptions of future selves examines the self-concept of juvenile offenders and their notion of the possible future selves (Abrams & Hyun, 2008). The researchers used ethnographic research approach to gain a deep understand of the self-conceptualizations of juvenile offenders while incarcerated. The lens that the researchers, Abrams and Hyun (2008) utilized to guide their study was Phelan, Davison, and Yu (1993) theory of “Multiple Worlds” which states that youths navigate identities though moving in and out of multiple worlds such as school or differing peer groups, each with its own norms. The focus of this study was to examine how youths negotiate and maintain a criminal identity while

adapting to the juvenile justice system. Findings show that youths identities formed three distinct categories: self-synthesis, referring to individuals were able to both adapt to the program while also acknowledging the challenges of current changes based on their past selves; situational self-transformation, referring to individuals who struggled to adapt to the program and struggled to acknowledge the fluidity of identity; and self-preservation, referring to individuals who could or would not adapt to the program.

The researchers expounded on the descriptions of each category, describing the characteristics of the individuals within each. Those in the self-synthesis category were described to have “developed a critical lens concerning their past and expressed a seemingly authentic wish to replace their prior criminal selves with alternative possibilities” (p. 45). Those youth in the situational self-transformation category expressed both ambivalence and self-doubt in their ability to make sustainable changes in life. Finally, those youth in the self-preservation category continually and actively rejected any identity change. Most significant to this current dissertation are the findings that despite the level of criminal identity upon incarceration, youth were to fit into one of these categories. As described in the discussion section of the study, the question of how some of the individuals were able to express identity transitions while other were unable or unwilling was not answered by this study, only that this difference in trajectory of identity self-perception occurred (Abrams & Hyun, 2008). This question of how, despite initial criminality, some were able to see the potential difference for the self and others were not, poses the potential to be answered by the self-creativity construct; at the core of self-creativity is the ability to create a viable future self that is significantly different from the undesired current self. Those in the self-preservation category vehemently rejected the possibility of a different future self even when show that the negative consequences of the current self, and those in the

situational self-transformation category knew that their current self was not the ideal, but were ambivalent letting that current version of self go. Only those in the self-synthesis category were able to conceptualize a specific and attainable version of the self.

**Excluded terminology.** Due to the theory of possible selves deriving from the broader self-concept theory, there are closely related terms that exist in the literature but will not be integrated into this study. Only the terms possible selves, hoped for self(s), and feared self(s) will be utilized due to the conceptual closeness of other terms resulting in only semantic differences, or the differing trajectory of the research from the core of this study. The terms “Possible Identities”, “Positive Identities”, and “Negative Identities” used by Oysterman and James (2011) are conceptually identical to the possible selves, and appear to be used interchangeably by the researchers (Oyserman et al., 2015). Therefore, this concept will not be explored as it is identical to possible selves, in this study nor will these alternative terms be used in order to keep the language concise. The concepts of “Ideal Self” and “Ought Self”, originally conceived by Carl Rogers in his attempt to expound on the Self-Actualization process by Albert Bandura, will not be discussed in this study as they are conceptually similar to possible selves theory; the hoped-for self is conceptually tied to the ought and ideal self, where the feared self describes the contrary of the ideal and ought self (Higgins, Roney, Crowe, & Hymes, 1994; Raskin & Rogers, 2014).

**Critique of the theory of possible selves.** The theory of possible selves is most often critiqued on the implications surrounding motivation (Hoyle & Sherrill, 2006; Oyserman et al., 2015). Recent studies have focused heavily on the role that the future self plays as an incentive or as motivational for the individual (Hoyle & Sherrill, 2006; Markus & Nurius, 1986; Oysterman & James, 2011). Markus and Nurius (1986) describe possible selves as bridging self-

concept and motivation for achievement; however, if the constructed future selves are not viable or are only loosely formed then the theory that these selves provide motivational drive does not hold up against scrutiny (Carroll, Shepperd, & Arkin, 2009; Frazier et al., 2000). In their study on adult identity development and hoped for selves, Nazar and Van der Heijden (2014) found that work related possible selves were an amalgamation of both work and career history. These past work-related selves played a role in shaping the future possible selves in the way that intermingling of skills and experiences can be reconfigured into new prospects; ultimately, the authors found that exposure to diverse job roles and overall work experiences lay a foundation for the development of new possible selves at work. However, the question arises when an individual creates a new future self that is not rooted in past experiences, and how this can be achieved. Building novel future selves from a past that is not desired to be replicated and, furthermore, consists skills that are not transferrable does not logically satisfy the question of how individuals who have not had this previous exposure to desired past selves create new hoped for future selves. This unanswered facet of the theory is at the crux of this current research and what the self-creativity construct hopes to shed light on.

### **Divergent Thinking**

A secondary facet to compose self-creativity is divergent thinking. Divergent thinking is the ability to conceptualize multiple solutions, both conventional and original, to a given problem (Kuhn & Holling, 2009; Runco & Acar, 2010). Divergent thinking adds conceptually to self-creativity through component of “who can I be”, and allowing for generation of multiple possibilities. Conversely, convergent thinking is the ability to provide the best or correct answer, and is strongly associated with intelligence testing (Ashton-James & Chartrand, 2009; Chamorro-Premuzic & Reichenbacher, 2008), while divergent thinking is closely linked with

creativity, and is even proposed by many theorists to be a predictive measure of creativity (Kuhn & Holling, 2009). Divergent thinking has also been linked to many other cognitive functions such as processing speed, memory, and also intelligence, implicating divergent thinking in cognitive functions such as mindset and insight (Dietrich & Kanso, 2010; Karwowski, 2014; Kuhn & Holling, 2009). External factors, such as mentoring or modeling, can influence application of divergent thinking abilities by means of recreating the actions or methods demonstrated by those models (Ashton-James & Chartrand, 2009; Yi, Plucker, & Guo, 2015); though, internal factors such as being open to new experiences, fear of judgement, and anxiety can also significantly expound or inhibit divergent thinking abilities (Chamorro-Premuzic & Reichenbacher, 2008).

While divergent thinking is a component of the conceptualization piece of self-creativity, it is distinctly different from the construct as a whole; divergent thinking is the ability to create multiple solutions to a given problem, whereas self-creativity is the ability to create a future self that is both significantly different from the present self and viable. Viability of ideas is not taken into account when divergent thinking is assessed, rather the quantity of unique ideas is the driving factor in these assessments (Lewis & Lovatt, 2013). Self-creativity also differs from convergent thinking in that conceiving a new possible self requires the individual to see the self creatively, not choose the best self from existing options. While numerous divergent thinking tests exist, this researcher will focus on the Big Five Inventory (BFI), with attention given to the Openness to Experience Subscale, and the Creative Personality Scale (CPS) because these assessments, while not explicitly divergent thinking assessments, assess the cognitive foundation for divergent thinking to be realized, namely the active seeking of new experiences, intellectual curiosity, and willingness to explore new ideas, as well as possessing creative traits. The BFI and

the CPS holistically clarify the construct of divergent thinking ability because of the differing approaches used by each; for example, the BFI Openness subscale measures open-mindedness, originality, and novelty by proxy through the use of short statements about the trait and a Likert scale whereas the CPS directly lists these constructs for the test taker to select (John & Srivastava, 1999; McCrae, 1987a). The diversity of the overt and covert measure of divergent thinking yields a more fully realized conceptualization of the construct.

***Creative Personality Scale.*** First, the significance of Creative Personality Scale (CPS) for the Adjective Check List (Gough, 1979) will be discussed as it relates to this study in this section; the implementation of the assessment for this current study will be discussed in the methodology section of this manuscript. The CPS is a self-report creativity assessment that aims to measure self-concept in the realm of creativity. The concept presented by this assessment is utilized in the conceptualization of the self-creativity construct and the CAMPS assessment due to the specific language used in the CPS. The assessment contains 30 terms, 18 that are attributes of creativity positively weighted, and 12 that are negatively correlated with creativity. The total items selected will yield a creativity score based on the ratio of creative vs non-creative attributes selected; “1 point is given each time one of the 18 positive items is checked, and 1 point is subtracted each time one of the 12 negative items is checked. The theoretical range of scores is therefore from -12 to +18” (Gough, 1979, p. 1401). Some of the creative attributes according to this study include “Capable”, “Clever”, and “Insightful” whereas the non-creative terms include “Artificial”, “Conventional”, and “Narrow interests.” The self-evaluative nature of how this scale assesses creativity is significant to this current study as the ability to assess the self is a crucial component of self-creativity. Beyond the significance of the methodology of the CPS, the operationalization of creativity through the specific word choices also makes this assessment

of particular interest to this study. Terminology such as “Insightful,” “Wide interest,” “Individualistic,” and “Capable” stand out as facets that may provide additional conceptual structure to the operationalized self-creativity definition when combined with additional conceptual scaffolding described in subsequent sections of this dissertation.

***Big Five Inventory.*** The Five Factor model arises from the amalgamation of personality researchers over time aiming to find a unifying language to describe the facets of personality (John & Srivastava, 1999). Each of the five factors are on a bipolar spectrum, meaning that an individual will display traits that are consistent with each factor or its opposite; for example, if someone does not display high level of extraversion they would then be more likely show traits of introversion. These five overarching factors are: Extraversion, which refers to individuals who tend to be outgoing, assertive, and energized by social interactions; Agreeableness, which refers to individuals who tend to be compliant, trusting, and accommodating; Conscientiousness, which refers to individuals who tend to be hard working, dutiful, and self-disciplined; Neuroticism, which refers to individuals tend to be anxious, irritable, display emotional instability, and self-conscious; Openness, which refers to individuals who tend to be inquisitive, artistic, curious about many different things, and are imaginative (John & Srivastava, 1999).

The Big Five Inventory (John, Donahue, & Kentle, 1991) was constructed in response to existing five factor scales, allowing for a relatively brief and efficient measure of these facets (John & Srivastava, 1999). The BFI utilizes short phrases such as “Is talkative”, “Worries a lot”, and “Gets nervous easily” that are rated by the user on a 1-5 Likert scale, resulting in the individuals score for each factor. This 44-item assessment measures the five established factors of personality: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. Of these aforementioned personality facets, the Openness to Experience concept

and sub-scale is of particular relevance to the self-creativity construct as this facet is linked to school performance, curiosity, pursuits of higher education, and success in jobs requiring creativity (John, Naumann, & Soto, 2008; McCrae & Costa, 1987). The Openness to Experience construct has similarities to self-creativity however, at the core these constructs have stark differences; “Openness to Experience (verses closed-mindedness) describes the breadth, depth, originality, and complexity of an individual’s mental and experiential life” (John & Srivastava, 1999) whereas self-creativity is an individual’s ability to construct a future self that is both viable and significantly different from the current self. Thus, being open is an important condition for facilitating an internal environment that lends itself to entertaining new viable future selves, but is not the mechanism of creation that self-creativity is hypothesized to be.

### **Mindset**

To what degree does perceptions of one’s own abilities influence individual achievement? This is a question that is explored in the study of mindset. Dweck (2006, 2010) defines mindset in relation to an individual’s perception of the fluidity of knowledge and overall ability, and is hypothesized to exist in two forms: growth mindset and fixed mindset. Fixed mindset is the perception that intelligence is stable, innate and unchanging despite effort; this is believed to manifest in an individual continually feeling the need to prove his or her self in an effort to demonstrate the presence and level of the attribute in question (Dweck, 2010; Karwowski, 2014). In contrast to fixed mindset, growth mindset is said to see intelligence and ability as malleable with effort and experience, resulting in an individual becoming interested in the journey more so than the destination of intellectual pursuits (Dweck, 2006). However, in a study by Karwowski (2014) researchers examined mindset as it relates to creativity and found that in this case, fixed mindset and growth mindset acted as independent constructs rather than as

a continuum. Individuals with a growth creative mindset are more likely to attempt creative tasks and utilize divergent thinking, therefore more likely to effectively utilize insight problem-solving strategies (Karwowski, 2014). More importantly, a change in mindset can result in increased divergent thinking and overall creative thinking (Zyphur, 2009).

According to Dweck (2010) growth mindset allows individuals to evaluate current abilities and assess for future potential. This evaluative property of mindset overlaps with the self-fulfillment property of Loevinger's (1976) Autonomous stage of development in that both evaluate current roles and gains a broad perspective of life potentials. Growth mindset also emphasizes resilience, as failure is a part of challenging the self, individuals with a growth mindset will engage in and enjoy pursuits that they may initially struggle with (Blackwell & Trzesniewski, 2007). Having a growth mindset may set the cognitive stage for an individual to assess what is a viable future self and what is not by allowing for the assessment of more possible selves. Growth mindset contributes to the conceptual definition of self-creativity by way of change being possible; that individuals are not static versions of self, but capable of personal growth. Furthermore, this growth mindset can be taught and, if accepted, can influence motivation and goals, thereby influencing the perception of what a possible future self could be (Blackwell & Trzesniewski, 2007). This may be the path to achievement after the initial construction of the future version of self then committed to by the individual. However, this continues to raise the question of how are the differing versions of self that a growth mindset could explore initially constructed; it is this question that this study of self-creativity seeks to answer.

## **Insight**

“Insight occurs when a person suddenly reinterprets a stimulus, situation, or event to produce a nonobvious, nondominant interpretation. This can take the form of a solution to a problem (an ‘aha moment’), comprehension of a joke or metaphor, or recognition of an ambiguous percept” (Kounios & Beeman, 2014). While the moment of the aha appears to happen abruptly, it is in actuality the product of “unconscious processing” over a period of time (Kounios & Beeman, 2014). Moreover, insight provides individuals with subjective self-understanding beyond external situational problems, and with high levels of insight higher levels of life satisfaction can also be found (Lyke, 2009). The significance of this cognitive process, as it relates to self-creativity, is that insight begins to link the creation of multiple future-selves to new interpretations of the current self by means of increase self-knowledge. Insight contributes to the conceptual definition of self-creativity through that “aha” moment when applied to the self, the reinterpretation of self and what may be possible to achieve.

The conceptual link between insight, creativity, and possible selves can also be illustrated by Förster, Friedman, and Liberman (2004). These scholars conducted a series of six experiments to examine the relationship between temporal distance of their lives or specific task and the impact this thought has on their insight problem solving ability. First, to measure the impact of temporal distance on insight and creative problem solving, individuals were asked to think about their lives in the near or distant future, and to imagine themselves working on the experiment specific task in the near future. All experiments were preceded with these instructions with the exception of 4 which individuals were not given instruction to imagine their lives in the future, and 5 where individuals were not instructed to envision the task in the future. Furthermore, each experiment included a unique participant pool with varying age and gender

compositions. This was achieved constructing experiments 1, 2, and 3 that respectively examined the relationship between perception of time (through thought experiments or by design of packets either near or distant future oriented) and solving classic insight problems such as how a rope half as long as you need can be divided in two and recombined to create the correct length or reconfiguring a triangle made of circles to have the point face down by only moving three circles, the Snowy Pictures Task which hides images amidst significant visual noise and allows for visual insight, and the Gestalt Completion Test where an individual will examine fragmented and ambiguous images to determine what the fragments form as a whole (Förster et al., 2004). Experiments 4 and 5 were constructed to test the process of creative thought; experiment 4 ask half of the participants to provide a creative rational of why they should greet someone and half were asked to find as many creative ways of how to greet someone they could. The rational for experiment 4 was to determine if reason or mechanics would result in more responses from participants, as well as examines creative generative thought processes and abstract thinking. In experiment 5, participants were asked to help a hypothetical individual creatively water plants and creative ways to improve her room; the aim of this experiment is to evaluate concrete and abstract thinking abilities respectively. In experiment 6, an analytical reasoning task was administered as a type of control as this assessment was not deemed to stand to improve based on the individual's future oriented thoughts. The researchers found that overall in the first five experiments, individual who focused on the distant future life or problem solving were able to solve the tasks more efficiently than those who only thought of the next day. However, in experiment 6, researchers found that individuals who received packets that included distant time oriented questions, verses next day oriented questions, did more poorly on the analytical reasoning tasks, concluding that analytical concrete reasoning is impeded by the future oriented

perspective in this experiment. The importance of this study as it relates to the current dissertation is that future oriented thought significantly and positively impacts divergent thinking ability and propensity for insight. These findings begin to lace together the interdependence of these constructs, that future oriented thought allows for more and unique thoughts or solutions. Furthermore, this study gives credence to both the conceptual connection between insight and future-selves theory as stated in the beginning of this section, and to the overall point that ability to construct a viable future-self, does not necessitate analytical reasoning however as in the creation of multiple selves the viability may not be considered, only that may future selves could exist. The process of creating a both unique and viable future self, while potentially in part fueled by this described process, is not fully explained by future oriented thinking, creativity, and insight alone.

### **Summary**

This aim of this literature review is to provide the foundation for a conceptual definition by describing the proposed components of possible selves, insight, divergent thinking, and growth mindset. Each of these, as explored in the proceeding sections comprise a component of this conceptual definition: the ability to construct a viable future self that is markedly different from the present self. This definition is supported by the framework described in this literature review, as each part can refer back to one or more of the aforementioned constructs.

Conceptually, possible selves provide a foundation for the future self component, growth mindset provides a foundation of hope that change is possible, divergent thinking allows for the multiple reimagining of self, and insight can initiate the desire for change through the aha and also provide a means of analysis to the multiple possible selves. However, the whole of self-creativity is more than the sum of these constructs; each supports the conceptual definition but

when strictly combined, as shown in the data describing overlaps, a clear conceptual hole still exists.

### **Inferences for Forthcoming Study**

As in a Venn diagram, there is conceptual overlap between all of the aforementioned constructs—insight, divergent thinking, mindset, and possible selves—where self-creativity is the center both overlapping and conjoining all the constructs into a cohesive and unified theoretical model. The interplay of concepts can be further explored through the exploration of the psychometric properties of the CAMPS and the operationalization of self-creativity.

In the exploratory study conducted by Markus and Nurius (1986) on 210 male and female college students, the researchers gave participants a questionnaire that was composed of 150 possible selves broken into six categories: general descriptors, physical descriptors, life-style possibilities, general abilities, occupational alternatives, and opinions of others. Each category was then broken into thirds—positive, natural, and negative. Findings show that individuals involved in this study had a strong bias to a positive future self-conception; and while individuals “can reflect on their possible selves and that these selves are not identical with descriptions of their current of now selves...these possibilities do not appear to be constrained by their current or now selves...they seem to believe that they are quite likely to change, often quite dramatically” (p. 959). However, the ability to picture a new and different future self has yet to be described as anything but by proxy of the statement of a future self. Furthermore, while according to this study a different future self can be imagined easily, this does not necessitate viability of that particular future self. It is the ability to not only create a different potential future self that is the focus of this dissertation, but the ability to conceptualize a novel and viable

version of the future self. This facet of viability is what the self-creativity concept begins to examine.

### **Conceptual Framework for Forthcoming Study**

The conceptual construction of the self-creativity construct, as described in the aforementioned section, is an amalgamation of four existing theoretical constructs creating a collective sum that is uniquely different from the parts. Therefore, the connective tissue between these concepts is the new construct of self-creativity and the guiding conceptual framework of this study is identity development.

Because one of the objectives of this dissertation is to construct a survey instrument that operationalizes self-creativity, question construction was modeled using similar rationale to the Big Five Inventory in that phrases based on the trait being assessed are utilized in conjunction with a Likert scale answer set (John & Srivastava, 1999). In addition to modeling questions from the BFI, the assessment itself was used as well as the CPS due to the correlation between these assessments and divergent thinking ability (Kaufman, 2012; McCrae, 1987).

## Chapter Three: Methodology

### Overview of Methodology

The purpose of this study is a two-pronged approach; first is to provide an operational definition of self-creativity through the themes that arise from the CAMPS validation, second is the validation of the CAMPS through three separate studies based on data collected by this researcher.

The procedure through which the CAMPS was developed following the basic tenets of Worthington and Whittaker's (2006) guidelines for scale development in the field of counseling. Specifically, it was modeled off of the procedure used to develop the Grit Scale (Duckworth et al., 2007) due to the similarity in the development of a unique construct and validation of an assessment to test this construct. Items for the CAMPS were constructed based on the deductive method of item development based on: researcher's therapeutic interactions with clients, direct observation of individuals that display this ability, and preliminary literature reviews on personality theories (Burisch, 1970).

All data for Study 1 and Study 2 were cleaned so data could be accurately analyzed. Cleaning procedures started with the removal of participant response sets who did not complete the CAMPS section in its entirety, straightlined answers (for example, by only answering "3" throughout the assessment), or answered in patterns inconsistent with actual responses (for example, by answering "12121212" throughout the assessment). Study 1 and Study 2 data were initially assessed through the evaluation of the descriptive statistics mean, standard deviation, minimum, maximum, kurtosis and skewness as an additional data cleaning procedure to note any outliers that may have been undetected through the aforementioned data cleaning methods. Study 1 data was then checked utilizing the SPSS split file function base on item number 50 "I have changed myself in significant ways" to further evaluate the validity of responses

consistency with other similarly worded items. This question was chosen for two specific reasons, first the wording of this question indicates the individual has already engaged in significant change and second is that this allows for a preliminary test of what items correspond with this change. This split also allowed for the initial examination of internal consistency by examining aforementioned frequency and descriptive data of questions that align with high ratings on item 50.

Study 1 data utilized an exploratory factor analysis (EFA) to explore the degree to which the underlying factor structure of the CAMPS aligns with the facets of self-creativity discussed in the literature review, as well as to reduce the number of items with the objective of producing a more practicable scale (Worthington & Whittaker, 2006). Factors were then evaluated for internal consistency using Cronbach's alpha, and checked for convergent validity with the additional assessments given during the test battery by running correlations with the scale scores from those assessments. Study 2 data was evaluated using a Confirmatory Factor Analysis (CFA) to validate the factors found in Study 1 (Worthington & Whittaker, 2006). Finally, Study 3 was collected to assess the face validity of the overall CAMPS through interviews. Individuals selected in Study 3 were given the definition of self-creativity, the original 63-item version of the CAMPS (see appendix 1), and the shorted version of the CAMPS following the validation analyses from Studies 1 and 2 (see appendix 2). The qualitative feedback was compared to the quantitative outcomes of Studies 1 and 2, yielding the final CAMPS instrument.

Data for Studies 1 and 2 were collected during this researcher's graduate assistant work, with IRB approval, prior to the start of this dissertation. These data were collected via Qualtrics and comprised the items of the CAMPS, Creative Personality Scale (CPS), Big Five Inventory

(BFI), and Center for Epidemiologic Studies Depression Scale – Revised (CESD-R). The results of these two initial studies yielded data that contributed to the administration of the shortened version of the CAMPS in Study 3. Data from Study 3 was derived from a small, targeted, sample and aims to focus on solidifying the parameters of the CAMPS through qualitative feedback pertaining to the face validity of the assessment and conceptual definition of self-creativity.

### **Study 1.**

During Study 1, a group of individuals were virtually recruited through electronic means, namely Amazon Mechanical Turk (MTurk). MTurk is an online crowdsourced service where individuals can anonymously and voluntarily participate in a variety of tasks and assessments and are remunerated for their participation, as was the case for this study (remuneration was \$1 for each participant). This Study 1, which includes what herein will be referred to as the “General Population” sample (because it was not targeted toward any particular group), was acquired solely via MTurk in a 48-hour period, and consisted of 221 total participants. Participants in the General Population sample, who chose to disclose sex, consisted of 101 males and 114 females. This data from Study 1 consists of the CAMPS as well as three other assessments, the CPS (commonly used to assess creativity; Carson, Peterson, & Higgins, 2005; McCrae, 1987b), as well as the BFI and CESD-R, which assess constructs that have been used in previous research to validate creativity-related measurements (Hepburn, Barnhofer, & Williams, 2008; Silvia, Nusbaum, Berg, Martin, & O’Connor, 2009). To access these assessments, participants followed an embedded link in the MTurk requester posting, and then participants are re-routed to Qualtrics where he or she consented to participation and the parameters of the study were explained.

## **Study 2.**

The sample for Study 2, which herein will be referred to as the “Professional Population” sample, was composed of graduate students in the mental health field and mental health professionals. This group was recruited over a two-week timespan via professional social networking site LinkedIn, American Counseling Association discussion boards, and the researcher’s home institution’s e-mail listserv for counseling students. This sample consisted of 158 individuals: 22 males, 121 females, and 15 who chose not to disclose sex. Testing procedures were identical to that of the General Population sample wherein participants would follow a link to the Qualtrics site that housed the assessments.

## **Study 3.**

The sample for Study 3 will hereforth be referred to as the “Exemplar Population” sample, since it was intentionally and carefully selected to comprise individuals who embody self-creativity, meaning they have made willful and marked non-linear changes in their life trajectory. These 13 participants were purposively selected by this researcher based on a set of criteria (demonstrated a marked life change, the transition has been completed, and acknowledge that the transition was a conscious choice). After the initial selections, participants were given the definition of self-creativity and the original version of the CAMPS as well as the shorted version of the CAMPS derived from the validation analyses in Studies 1 and 2. Participants completed and scored the 16-item version, reviewed the 63-item version and listed items they believe should have been included on the 16-item version, then discussed the face validity of each question and the overall assessments, and discussed their perceived validity of the self-creativity score through the use of semi-structured interviews. Interviews were completed in person, over the phone, and electronically through email correspondence.

## **Research Questions**

The following research questions will be addressed in this study:

- 1) What is the operational definition of self-creativity?
- 2) What are the psychometric properties of the Creativity Assessment for the Malleability of Possible Selves?

Research Question 1 will be addressed through validation Studies 1 and 2, and the data gathered in the exemplar interviews in Study 3, and a comparison to the data presented in Chapter 2. Research Question 2 will be addressed through the analysis of Studies 1 and 2, then through the data comparison from Study 3.

## **Hypotheses**

Research Question 1 was addressed through validation Studies 1 and 2, and the data gathered in the exemplar interviews in Study 3, and a comparison to the literature on related constructs presented in Chapter 2. The hypothesis for Research Question 2 was that the emergent factors from the Study 1 EFA would provide the parameters for the operational definition of self-creativity, which would be further confirmed by the results of the Study 2 CFA.

The overarching hypothesis for Research Question 2 was that the CAMPS would demonstrate strong reliability and validity, including face, convergent, and discriminant validity. Specifically, it was expected that the Study 1 EFA would provide preliminary convergent and discriminant validation and item reduction, Study 2 CFA would provide further convergent and discriminant validation, and Study 3 would provide further evidence of face validity along with valuable qualitative insights on the measure and construct. Individuals in Study 3 identified by the researcher as possessing high levels of Self-Creativity will receive a higher score than the mean of the professional population from Study 1 and the general population from Study 2.

## **Research Procedures**

**Research design.** All Study 1 and 2 data were collected during this researcher's graduate assistantship with IRB approval. Study 3 data was collected with further IRB approval specific to this study's procedures and population. Study 1 and 2 data were collected utilizing a combination of convenience and purposive sampling from two groups over a two-week period; specific groups were targeted, and of those targeted groups those who were elected to participate in the survey were solely included in the analysis. Study 1, the General Population sample, was collected solely through MTurk over a 48-hour period. Study 2, the Professional Population sample, was collected through use of listservs and professional networking sites. All data collection was conducted electronically and anonymously. Study 3 consisted of convenience, purposive, and snowball sampling procedures. The small targeted group of individuals were selected to participate in the interview, upon completion participants were asked for referrals of individuals who have demonstrated the self-creativity characteristics. This process continued until saturation of participant responses was reached.

**Participants.** The total sample for Studies 1 and 2 consists of a total of 373 online participants; 221 were recruited through the use of Amazon Mechanical Turk (MTurk) and 158 were recruited through the use of professional social networking sites, professional discussion boards and listservs, and the Duquesne University Counselor Education Program listserv. All participants were over the age of 18; the MTurk sample that chose to disclose sex consisted of 101 males and 114 females the professional sample that chose to disclose sex consisted of 22 males and 121 females. Study 1 data was collected over a 48-hour period and Study 2 data was collected over a two-week period.

In order to minimize the likelihood of a participant not completing an assessment, individuals from the general population were incentivized monetarily with a \$1 payment for completing the survey. In accordance with the IRB recommendations, participants could skip question if they choose while continuing to be able to complete other parts of the survey and gain access to the payment code at the end of the assessment. Professional survey participants were not monetarily incentivized, however the completion rate remained high with 133 completing the CAMPS, 132 completing the CESD-R, 132 completing the CPS, and 126 completing the BFI. The BFI was the last assessment in the battery and also shows the most participant drop-out.

Study 3 consist of 13 exemplars of self-creativity using a combination of purposive and snowball sampling procedures until the needed number of participants is reached (Onwuegbuzie & Collins, 2007). First, participants will be selected by this researcher based on their embodiment of self-creativity. For an individual to meet the inclusion criteria he or she must: (a) have demonstrated a marked and non-linear life change (such as transiting from a criminal lifestyle to one that is prosocial), (b) completed the transition, and (c) acknowledge that the transition was a conscious choice (did not occur by happenstance). These individuals were then given the criteria and able to refer individuals who were screened by the researcher to take part in the study.

This researcher selected the initial participants and verify those collected via purposive snowball sampling procedure. This researcher completed initial selection and verification of these participants due to conceptualizing the self-creativity construct and having a firm understanding of the construct. Then this researcher provided the participant information with a non-partisan third party to mitigate potential biases for final participant selection. If a point of contention occurred pertaining to a participant's appropriateness, a second non-partisan party

was provided with the information and would have made the determining decision if the participant meets criteria. Time to complete this task was four weeks in total. Data gathered in study 3 was strictly qualitative in nature, any participant scores will not be included in the final CAMPS quantitative statistical analysis. After the sample was collected, participants completed the CAMPS only and provide specific feedback on each question as well as his or her score. Feedback was elicited through semi-structured questions such as “Do you believe that these questions appear to ask about self-creativity?” “Are there some questions that seem to be out of place?” and “Do you believe your score accurately depicts your level of self-creativity?” Participants were also asked follow up questions to gain clarity and additional specific information about the perceived accuracy of their score, each question, and the overall assessment.

## **Instruments**

In addition to the CAMPS, three additional assessments were administered in Studies 1 and 2: BFI, CESD-R, and CPS. Each of these assessments’ validation procedures and rationale for selection of the assessment will be briefly discussed in this section.

**Big Five Inventory (BFI).** The “big five” personality structures are the result of multiple researchers evaluation of the taxonomy of personality over decades (John & Srivastava, 1999). These personality structures are: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. Over time, many assessment have been developed to test for the big five personality traits, however the two most predominant are the NEO Personality Inventory developed by Costa and McCrae, and the BFI developed by John and Srivastava (Goldberg, 1990; John et al., 2008; John & Srivastava, 1999; R R McCrae & Costa, 1987). This current investigation utilizes the BFI as this has been the more utilized assessment in recent studies over

the use of the NEO (John et al., 2008). Research on the BFI was evaluated over a five year time period by researchers John and Sirvastave, (2008). Furthermore, the BFI showed overall convergent validity ( $r = .93$ ) with the NEO, and high convergent validity with other five factor assessments, while offering a shorter and easier to understand assessment of the five factors (John et al., 2008). Internal consistency of each sub scale yields significant means revealing Extraversion ( $r = .86$ ), Agreeableness ( $r = .79$ ), Consciousness ( $r = .82$ ), Neuroticism ( $r = .87$ ), and Openness ( $r = .83$ ), with an overall mean of  $r = .83$  revealing an overall strong assessment (John et al., 2008). The Openness scale specifically has shown some predictive validity for school performance in early adolescence, years of completed education by middle adulthood, and success in artistic jobs (John et al., 2008). Because of this predictive validity with creativity the openness scale is of particular interest to the current investigation, however all scales will be utilized in assessing convergent and discriminant validity with the CAMPS.

**Center for Epidemiologic Studies Depression Scale – Revised (CESD-R).** Exploring the relationship between the CAMPS and depression serves as a means to test discriminant validity. Previous research indicates a relatively small, but significant antagonistic relationship between depression and the possible future selves and overall desire to change (Carroll et al., 2009). Furthermore, depression was found to have a mild negative relationship with creativity while experiencing depressive and anxiety symptoms, and these symptoms correlate with the neuroticism scale of the BFI (Silvia & Kimbrel, 2010). Therefore, a depression scale was utilized in the discriminant validity check of the CAMPS. The CES-D was developed by Radloff as a short self-report scale to measure depression in a general population (Radloff, 1977). Findings indicate that the CES-D was applicable to diverse individuals, making this a better fit for generalizability than other depression inventories (Radloff, 1977). The CES-D was revised

in 2004 to continue the expansion of generalizability, items simplified, items that increase sensitivity to dysphoria added, and terminology updated to meet current language (Dam & Earleywine, 2011). A validation study used to assess both the factor structure and psychometrics of the CESD-R by comparing two unique participant samples, one student sample and one community sample (Dam & Earleywine, 2011). This study found that the CESD-R has high internal consistency with Cronbach's alpha at .92 in the large sample and .93 in the small sample. The assessment was then correlated to two additional assessments for convergent validity: the State-Trait Inventory for Cognitive and Somatic Anxiety (STICAS), and the Schizotypal Personality Questionnaire-Brief (SPQ-B). Findings show a large positive correlation between the CESD-R and the STICSA in both the large ( $r=0.74, p<.01$ ) and small ( $r=0.65, p<.01$ ) sample population. Results are similar for the CESD-R and the SPQ-B with both the large sample ( $r=.44, p<.01$ ) and the small sample ( $r=.58, p<.01$ ). Because of the overall generalizability, and these validation sampling procedures mirroring those of the CAMPS, the fit of the CESD-R is apt for the current investigation.

**Creative Personality Scale (CPS).** Finally, uncovering a method for assessing creativity was integral to the present investigation as the CAMPS seeks to explore a specific type of creativity, self-creativity. Due to the nature of the study, requesting evidence of a creative product, such as art, music, or dance, was not a viable option. Furthermore, the perception of one's own abilities, rather than those of a rater, is more significant in self-esteem and therefore, number of hoped-for selves (Carroll, 2014; Meek, 2011; Oyserman & Markus, 1990). The CPS also show a strong correlation to the openness scale across studies (Carson, Peterson, & Higgins, 2005; McCrae, 1987b). Additionally, finding a scale that could be correlated with the aforementioned scales increased the validity of the creativity and CAMPS results. The CPS was

developed by Gough as an addition to the Adjective Check List as a means of self-reporting creative personality attributes (Gough, 1979). The CPS was validated using both a Q-Sort and criterion ratings finding an alpha reliability coefficient of .79 (Gough, 1979). The assessment was then given to a total of 1,701 individuals in 12 different samples of varying ages to norm the assessment. The samples consisted of 6 male groups and 4 female groups who were directly given the CPS by the researchers, in addition data was derived from two additional samples who were assessed by outside researchers using the ACL and Q-sorts. The ACL results of all the participants were assessed with the scales of Domino ( $r = .69, p < .01$ ) for males ( $r = .67, p < .01$ ) for females, Schaefer ( $r = .73, p < .01$ ) for males ( $r = .76, p < .01$ ) for females, and the four Welsh's scales  $r = .45, r = .53, r = .32, r = .34$  with  $p < .01$  respectively for males, and  $r = .40, r = .49, r = .33, r = .30$  with  $p < .01$  respectively for females. The ACL shows a  $M = 5.3$  ( $SD = 4.01$ ) for males and  $M = 3.97$  ( $SD = 4.43$ ) for females. Overall CPS scores were found to be statistically significant at or beyond the  $p < .05$  level of probability and can be considered a both valid and reliable assessment.

### **Data Analysis**

All established assessments were coded and scored in accordance with the standard administration procedures. For instance, any Likert item needing to be reverse scored were done so electronically after the test take has completed; no established assessments will be re-worded, re-ordered, or re-scaled to maintain consistent with the intended delivery process. The CAMPS functioned similarly to the established assessments in the administration process. Questions were not randomized and Likert answer scale questions remained consistent throughout the assessment, reverse scoring were conducted upon completion of the assessment. After all data were collected checks for suspicious data were conducted through multiple cleaning methods

including assessing for straightlining answers, erratic or patterned answers, or incomplete questionnaires. This was achieved through sorting data from highest to lowest, and allowed for a visual inspection of any straightlining. Next, each answer set was examined for patterns that are not consistent with actual answers, such as cycling through ascending and descending choices or a repeating pattern. Checking for erratic answers was done by assessing consistency of answers to similarly worded test items. Once this initial cleaning was completed, data imputation occurred so that accurate analysis can be executed on the full dataset. After this, statistical assumptions were checked, including: (a) normality (for Studies 1 and 2) using the Shapiro-Wilk test in SPSS to evaluate both skewness and kurtosis, (b) homogeneity of variances (among Studies 1 and 2) utilizing the Levene's test in SPSS to evaluate the within population variance, and (c) independence (studies 1, 2, and 3) by ensuring that none of the participants contributed data to more than one study. Finally, this allowed for an EFA to be performed on the study 1 data so that the underlying factors can emerge, which was then evaluated against the literature. Study 2 data utilized a CFA to validate the factors derived from Study 1 and compared the item loadings, resulting in the final CAMPS that was utilized when evaluating Study 3 data.

For Study 1, the EFA was executed in SPSS and examined utilizing established criteria and cut-off values. First, the Kaiser-Meyer-Olkin (KMO) was examined to ensure that a minimum value of .60, which is considered adequate, is met however reduction aimed for a value of greater than .80, considered high, to measure sampling adequacy for this study (Field, 2013, p. 684-685). Factors extracted in the analysis were initially utilize the widely accepted cutoff eigenvalue of 1.0 in conjunction with the scree plot to guide this evaluation of the data (Field, 2013, p. 677). The internal consistency of the EFA was evaluated via Cronbach's alpha with the cutoff to be at least .7 (Field, 2013, p. 709). Finally, item retention was guided a combination of

the factors loadings and the communalities. Factor loadings were scrutinized by applying a set of guidelines regarding generally accepted cutoff criteria including meeting a minimum loading of .32, not double loading or, if double loading occurred, a clear paring between factor and item can be seen though a minimum of a .15 difference on factors between items that double load (Worthington & Whittaker, 2006). Communalities were also utilized in item reduction criteria; items with communalities under .70 are not retained in the final EFA, and those items with very low communalities under .40 are eliminated in early iterations of the EFA (Field, 2013, p. 698; Worthington & Whittaker, 2006).

Study 2 CFA was executed in AMOS and examined utilizing established criteria and cutoff values. Factors from the final EFA in Study 1 was analyzed through the use of evaluating output data for the model fit indices. Output that was utilized in this evaluation of the overall model are the Chi-Square and degrees of freedom for model fit, the Root Mean Square-Error of Approximation (RMSEA) at or less than .05 (though this criteria is a guideline for interpretation and some researchers have indicated that levels at or below .08 are also acceptable), and the Comparative Fit Index (CFI) acceptable cutoff value of .90 (Hu & Bentler, 1999; Maccallum, Browne, & Sugawara, 1996; Worthington & Whittaker, 2006). These steps of and cut-off criteria for these factor analyses follow those prescribed by Worthington and Whittaker (2006).

Study 3 data were compiled and themes in responses are discussed as they relate to the face validity of the CAMPS. Data were analyzed to determine the accuracy of the constructs described in this literature review as they comprise the outline of self-creativity by analyzing the participants' responses to the CAMPS and follow-up interview questions. Finally, the themes from Study 3 provided a lens for interpretation of the Study 1 and Study 2 data, as well as potential implications of these findings. The possibility that the data collected in Study 3

conceptually conflicts with previous findings and assumptions is understood as a possibility of this process. In the event that this conflict occurs, the conflict will be noted and discussed in future implications. Though incorporating the Study 3 data into a new administration of the assessment exceeds the scope of this dissertation, this data would lay additional groundwork for future validation of the assessment.

### **Human Participants and Ethics Precautions**

All assessments accompanying the CAMPS have been previously validated by their researchers. The CAMPS in its entirety was submitted with the IRB protocol for review prior to administration. All data was collected electronically with no names, IP addresses, or emails being collected. Demographic data will be reported only as statistics as in the previous sections, no single assessment will be highlighted. During Study 3 data collection, all names were replaced with a code and identifying demographic data is reported only as statistics.

## **Chapter Four: Results**

### **Overview**

The purpose of this study was two-pronged, to operationally define the construct of self-creativity and the validation of the assessment designed to operationalize the construct, called the Creativity Assessment for Malleability of Possible Selves (or CAMPS). This process took place over three separate studies, each producing data that contributed to the aforementioned purpose of the study. Data reported in this chapter includes brief overview of descriptive statistics, EFA results, CFA results, exemplar survey responses, and validity data. Study 1 data consisted of the sample drawn from the general population for the purposes of running the EFA, though which the emergent factor structure was investigated and the number of scale items was systematically reduced. Study 2 data consisted of the sample drawn from the professional population and was used to conduct a CFA on the factors yielded in Study 1. Study 3 data consisted of a sample drawn from the exemplar population, a population who display evidence of self-creativity, and were used to assess the face validity of the CAMPS and the self-creativity construct.

### **Study 1**

Study 1 data consisted of the “General Population” sample and was collected over a 24-hour period using Amazon MTurk. Results for that study indicate a significant EFA composed of six factors and 16 items, with item reduction occurred over several phases. Data reduction occurred in over eighteen iterations for each of the five separate reduction trials to ensure the best fit items remained; removal of each item occurred in tandem with observing changes in the KMO, pattern matrix, and communalities. Of the initial 221 participants, 199 had complete or partial files (only missing nominal data points in the CAMPS or missing the some of the additional assessments) and were included in the analysis for Study 1. Additionally, any

Responses that were straightlined or answered in a pattern that could not be indicative of truthful results were removed from the dataset. Of those 199 individuals, 91 identify as male and 108 identify as female; however, within group differences were not explored in this study. This sample size exceeds the minimum case/item ratio of 5:1 with approximately a 12:1 case/item ratio (Worthington & Whittaker, 2006). Data were analyzed using the SPSS 24 statistical package. Final KMO for this study was .806 with significance level  $p < .001$  for Bartlett's Test of Sphericity, indicating that the assumptions for sampling adequacy and factorability were met (Worthington & Whittaker, 2006).

Normality assumptions for the CAMPS as well as supplemental assessments and scales were tested utilizing the Shapiro-Wilk test of normality. Results of the Shapiro-Wilk test for normality for both the CAMPS ( $p = .209$ ) and CPS ( $p = .108$ ) indicated the distribution of responses did not significantly differ from normal. This normal distribution was consistent with expected results; that the majority of individuals fall within a normal range of both creativity and self-creativity as measured by the CAMPS. Results for the CESD-R were significant at the  $p = .001$  level. Results for each scale of the BFI was significant at the  $\alpha < .001$  level, except for Extraversion that was significant at the  $\alpha = .004$  level. Though there were some violations of the normality assumption, the statistics employed herein are generally understood to be robust to these violations and thus the data were not transformed nor were non-parametric analyses employed. To capture all data for these analyses, all skipped questions that currently were represented with System Missing were replaced with a 0 so that data could be included despite missing data points. Utilizing a 0 in place of system missing or 99 allowed for items to be summed or, for the BFI, summed and averaged this is the scoring protocol on all assessments delivered in this study (Dam & Earleywine, 2011; Gough, 1979; John et al., 2008). The 0 did not

impact the final output, because of summing, but allowed for inclusion of all cases with and without missing data points that were excluded with the system missing function.

Factor analysis occurred utilizing SPSS through Direct Oblimin rotation because the factors are components of a single construct therefore are related, and principle components analysis (PCA) extraction method was utilized due to the objective of this EFA was item reduction to yield a succinct assessment that can be quickly administered to reduce the likelihood of participant burnout (Furr, 2011; Rolstad, Adler, & Rydén, 2011). Items 49 “I have made significant changes in my life” and 50 “I have changes myself in significant ways” were removed due to the wording indicating that a change had already occurred and therefore not being conceptually related to the predictive aim of the CAMPS. Item number 23 “I embrace change” was removed in later trials due to the high statistical and conceptual overlap with item 20 “I handle change well” and confounding effect with other items. During trials where both items 20 and 23 remained, these items factored together and skewed results so that all remaining significant items asked about change, reducing the diversity of factors to a single focus. Item 20 was retained for the nature of the wording being more conceptually in sync with growth mindset literature and the importance of perceived ability (Dweck, 2006).

Initial item reduction occurred through evaluation of communalities and item loadings on the pattern matrix; items with very low communalities (below .20) and low factor loadings (below .32) were removed and the EFA was re-run (Field, 2013, p. 698). During this process the eigenvalue was set to 1, however when a clear elbow in the scree plot appeared, the number of factors was set to correspond with that data (Field, 2013, p. 698). Trials with four, five, and six set factors were run and evaluated for fit and significance. This process was repeated for the thorough evaluation of all items and outcomes. In the last trial, that resulted in a 16-Item

CAMPS, eigenvalues were set to 1, however there was no point where factors were restricted. As the item reduction progressed toward the most parsimonious set of factors and item indicators, cutoffs were more restrictive resulting the removal of items without communalities of at least .70 and factor loadings of at least .70 (see Table 1 and Table 2) (Worthington & Whittaker, 2006). From these trials, 16 items and six factors emerged as statistically significant. Factors that arose were consistent with previous constructs describe in the literature review with the addition of autonomy and goal setting. Factor 1 has been labeled Growth Mindset and consist of item 36 “I welcome change in my life”, item 24 (reverse-scored) “I have trouble adjusting when things don’t go as planned”, item 20 “I handle change well”, and 38 “I am uncomfortable with change in my life”. Factor 2 has been labeled Goals and consists of items 55 “I set goals for myself”, item 27 “It is very important to achieve goals I set for myself”, item 58 “When I make a goal for myself, I can easily think of all the steps needed to achieve it”, and item 60 “It is important for me to know how to achieve goals I set for myself”. Factor 3 has been labeled Fixed Mindset and consists of item 29 “People rarely change”, and item 30 “No matter how hard people might try, they can’t change who they are. Factor 4 has been labeled Possible Selves and consist of questions item 31 “I can see my future as different from my present” and item 26 “When I think about my future, it is easy for me to picture myself as different than I am now”. Factor 5 has been labeled Autonomy and consists of item 32 “I am in charge of my life choices” and item 34 “Most of the decisions I make in life are my own”. Factor 6 has been labeled Divergent Thinking and consists of item 14 “When I am faced with a problem, I can easily think of multiple solutions” and item 15 “When I have a problem, it is hard for me to think of multiple ways to solve it.”

Through this analysis, Research Question 1— “How can self-creativity reliably and validly be measured via a survey instrument?”—can preliminarily be answered by the data presented from the EFA that has resulted in the 16-Item CAMPS. And Research Question 2— “How can the emergent themes of the CAMPS provide an operational definition of self-creativity?”—can preliminarily be answered by the six emergent factors of growth and fixed mindset, goal setting, possible selves, autonomy, and divergent thinking ability.

*Table 1.*

*Communalities of Retained CAMPS Items*

Items	Extraction
I welcome change in my life	.772
I have trouble adjusting when things don't go as planned	.753
I handle change well	.839
I am uncomfortable with change in my life	.702
I set goals for myself	.763
It is very important to achieve goals I set for myself	.745
When I make a goal for myself, I can easily think of all the steps needed to achieve it	.728
It is important for me to know how to achieve goals I set for myself	.731
People rarely change	.845
No matter how hard people might try, they can't change who they are	.865
I can see my future as different from my present	.813
When I think about my future, it is easy for me to picture myself as different than I am now	.840
I am in charge of my life choices	.778
Most of the decisions I make in life are my own	.812

When I am faced with a problem, I can easily think of multiple solutions	.783
When I have a problem, it is hard for me to think of multiple ways to solve it	.851

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*Table 2*  
*Factor Loadings for Exploratory Factor Analysis with Direct Oblimin Rotation of the CAMPS*

Items	GrowthMS	Goals	FixedMS	PossSelf	Auto	DivergThink
I welcome change in my life	<b>.817</b>	-.001	-.065	.251	-.023	-.071
I have trouble adjusting when things don't go as planned	<b>.826</b>	-.031	.150	-.160	-.030	.058
I handle change well	<b>.880</b>	-.079	-.075	.043	.059	-.009
I am uncomfortable with change in my life	<b>.804</b>	.075	.092	-.032	.087	.066
I set goals for myself	-.016	<b>-.890</b>	-.046	.054	-.077	.020
It is very important to achieve goals I set for myself	-.030	<b>-.822</b>	-.056	.014	.148	-.065
When I make a goal for myself, I can easily think of all the steps needed to achieve it	.150	<b>-.733</b>	.098	-.084	-.040	.178
It is important for me to know how to achieve goals I set for myself	-.049	<b>-.817</b>	.124	.015	.091	-.057
People rarely change	.072	-.037	<b>.884</b>	.036	-.070	.029
No matter how hard people might try, they can't change who they are	.019	-.043	<b>.897</b>	.084	.052	-.018
I can see my future as different from my present	-.098	-.004	.164	<b>.833</b>	.068	.151

When I think about my future, it is easy for me to picture myself as different than I am now	.137	-.030	-.017	<b>.881</b>	-.030	-.073
I am in charge of my life choices	.038	-.052	-.110	.062	<b>.835</b>	.071
Most of the decisions I make in life are my own	.030	-.017	.076	-.042	<b>.890</b>	-.035
When I am faced with a problem, I can easily think of multiple solutions	.181	-.219	-.155	.095	-.055	<b>.740</b>
When I have a problem, it is hard for me to think of multiple ways to solve it	-.073	.100	.111	-.005	.076	<b>.919</b>

*Note.* Significant factor loadings are in boldface. GrowthMS = Growth Mindset; Goals = Goal Setting; Fixed MS = Fixed Mindset; PossSelf = Possible Selves; Auto = Autonomy; DivergThink = Divergent Thinking.

Convergent and discriminant validity was assessed for the 16-Item CAMPS with each scale of the Big Five Inventory, the CPS, and the CESD-R. Based on the literature presented in Chapter 2 of this dissertation expectations of correlates can be derived, as follows. The CAMPS was expected to positively correlate with the CPS due to the assessment measuring creative traits. The CAMPS was expected to positively correlate with the openness scale and negatively correlate with the neuroticism scales of the BFI, though all scales were assessed (Silvia et al., 2009). Based on the related literature showing weak but significant negative relations between depression and similar constructs such as possible selves and motivation (e.g., Hepburn et al., 2008), the CAMPS was expected to weakly, negatively correlate with the CESD-R; this correlation is thought to provide evidence of discriminant validity, given that self-creativity and depression are not expected to be strongly correlated.

The results showed the 16-Item CAMPS and all scales of the BFI exhibit a moderate and significant correlation:

Specifically, the Openness scale shows a moderate correlation at  $r = .48, p < .001$ ; the Extraversion scale also correlates at  $r = .48, p < .001$ ; the Consciousness scale correlates at  $r = .55, p < .001$ ; the Agreeableness scale shows the weakest correlation at  $r = .47, p < .001$ ; and the Neuroticism scale correlates most strongly and also negatively at  $r = -.58, p < .001$ . Additionally, the 16-Item CAMPS and the CESD-R have a weak and negative correlation at  $r = -.36, p < .001$ ; and the 16-Item CAMPS and CPS show a moderate relationship ( $r = .52, p < .001$ ).

Each of the CAMPS six factors was also significantly correlated with the aforementioned assessments and scales, to varying degrees:

The Growth Mindset factor significantly correlates with the BFI scales: Openness ( $r = .35, p < .001$ ), Extraversion ( $r = .50, p < .001$ ), Consciousness ( $r = .47, p < .001$ ), Agreeableness ( $r = .47, p < .001$ ), and Neuroticism ( $r = -.59, p < .001$ ); with the CESD-R ( $r = -.47, p < .001$ ), and CPS ( $r = .43, p < .001$ ). The Goals factor significantly correlates with the BFI scales: Openness ( $r = .39, p < .001$ ), Extraversion ( $r = .33, p < .001$ ), Consciousness ( $r = .65, p < .001$ ), Agreeableness ( $r = .43, p < .001$ ), and Neuroticism ( $r = -.43, p < .001$ ); with the CESD-R ( $r = -.37, p < .001$ ), and CPS ( $r = .32, p < .001$ ). The Fixed Mindset factor significantly correlates with the BFI scales: Openness ( $r = .22, p < .01$ ), Extraversion ( $r = .28, p < .001$ ), Consciousness ( $r = .15, p < .05$ ), Agreeableness ( $r = .26, p < .001$ ), and Neuroticism ( $r = -.23, p < .01$ ); it also significantly correlates with the CPS ( $r = .28, p < .001$ ), but not with the CESD-R ( $r = -.14, p = .055$ ). The Possible Selves factor significantly correlates with the BFI scale of

Openness ( $r = .34, p < .001$ ), Extraversion ( $r = .17, p < .05$ ), and Neuroticism ( $r = -.16, p < .05$ ), as well as CPS ( $r = .32, p < .001$ ); it does not significantly correlate with Consciousness ( $r = .08, p = .236$ ), Agreeableness ( $r = .12, p = .093$ ), or with the CESD-R ( $r = -.04, p = .621$ ). The Autonomy factor significantly correlates with the BFI scales: Openness ( $r = .17, p < .05$ ), Consciousness ( $r = .41, p < .001$ ), Agreeableness ( $r = .31, p < .001$ ), and Neuroticism ( $r = -.33, p < .001$ ), but not with Extraversion ( $r = .10, p = .160$ ); it also significantly correlates with the CESD-R ( $r = -.37, p < .001$ ), and CPS ( $r = .18, p < .05$ ). Finally, the Divergent Thinking factor significantly correlates with the BFI scales: Openness ( $r = .35, p < .001$ ), Extraversion ( $r = .30, p < .001$ ), Consciousness ( $r = .41, p < .001$ ), Agreeableness ( $r = .22, p < .01$ ), and Neuroticism ( $r = -.28, p < .001$ ); with the CESD-R ( $r = -.22, p < .01$ ), and CPS ( $r = .36, p < .001$ ).

Finally, each of the CAMPS subscales was correlated with each other, revealing that:

Growth Mindset correlates positively with Goals ( $r = .38, p < .001$ ), Fixed Mindset ( $r = .33, p < .001$ ), Autonomy ( $r = .24, p < .01$ ) and Divergent Thinking ( $r = .37, p < .001$ ).

Goals positively correlate with Fixed Mindset ( $r = .24, p < .01$ ), Possible Selves ( $r = .31, p < .001$ ), Autonomy ( $r = .44, p < .001$ ), and Divergent Thinking ( $r = .37, p < .001$ ).

Fixed Mindset positively correlates with Possible Selves ( $r = .29, p < .001$ ), and

Divergent Thinking ( $r = .38, p < .001$ ), but does not significantly correlate with

Autonomy ( $r = .12, p = .094$ ). Possible Selves significantly correlates with Autonomy ( $r = .20, p < .01$ ) and Divergent Thinking ( $r = .26, p < .001$ ). Finally, Autonomy

positively correlates with Divergent thinking ( $r = .21, p < .01$ ).

These data reveal an overall 16-item assessment that is correlated with existing assessments and scales that provide a foundational basis for the convergent validity; the fact that

the one correlation that was expected to be relatively low, between the CAMPS and the CESD-R, did have a small effect size (though statistically significant) suggests moderate evidence of discriminant validity. Each individual factor of the CAMPS also shows significant correlation with these assessments and scales, though not as strongly as the overall 16-item CAMPS with some correlations being above the  $p < .001$  level of significance or non-significant correlations. Furthermore, each individual factor correlates with the other at the  $p < .01$  level of significance or better, with the exception of the Fixed Mindset and Autonomy scales. These findings give credence to the CAMPS being delivered as an intact assessment, without separating the factors into separate scales due to the combined instrument being statistically stronger than the separated individual factors.

## **Study 2**

Study 2 data consisted of the “Professional Population” dataset that was collected over a two-week period utilizing professional networking sites and listservs. Data cleaning procedures mirrored that of Study 1. Data with unfinished CAMPS were automatically deleted, as were any submissions with excessive missing responses. Data that had been straightlined or answered in a pattern that would be inconsistent with truthful responses were also removed. After this reduction, the initial 152 responses were reduced to 133 responses that were used in the analysis. Of the remaining 133, 20 identified as male and 113 identified as female.

Data were analyzed using the AMOS version 22 statistical package (Arbuckle, 2013). Analysis began by selecting the 16 individual items and grouping them in accordance with the established factors from Study 1 (See Figure 1). Constructs were named in accordance with the factors that arose from the questions that loaded on each factor and in accordance with AMOS labeling (see note in Table 3). After grouping on the corresponding construct, each indicator

variable (individual test item) was assigned a uniqueness error variance of 1 to scale for the variance that is not accounted for by the construct. Then, correlations were drawn between and among each of the six constructs due to factors being assumed to be correlated. In this study the factor loadings for one indicator variable was set to 1.0 for the factors Growth Mindset (GrowthMS) and Goal Setting (Direction), however for the factors Autonomy (Auto), Fixed Mindset (FixedMS), Divergent Thinking (DivergThink), and Possible Selves (PossSelf) each had only two indicator variables and therefore both indicator variables were fixed at 1.0 (Kline, 2005). Because missing data for Study 2 was not imputed, full maximum likelihood estimation was used.

The confirmatory factor analysis output reveals all standardized regression weights estimates for each indicator variable load strongly onto the corresponding construct (see Figure 1). Correlations among constructs show overall distinct and stand-alone factors; the most highly correlated constructs are Possible Selves and Growth Mindset, which is supported by the literature presented in Chapter 2. Overall model fit is good for the 16-Item CAMPS was generally acceptable. Whereas the model chi-squared statistic ( $\chi^2$  ( $df = 93, N = 133$ ) = 151.81,  $p < .001$ ) was statistically significant, this is typically the case with large samples (i.e., over 200) and thus not given much credence (see Kline, 2005). The Comparative Fit Index (CFI) of .910 is above the .90 cut-off for an acceptable model fit, though it does not quite meet the more stringent criterion of .95 (Hu & Bentler, 1999). The Tucker-Lewis Index (TLI) is below the .90 cutoff, at .868, however values close to 1.0 indicate a goodness of fit therefor this statistic indicates a moderate fit (Hu & Bentler, 1999; Worthington & Whittaker, 2006). The Incremental Fit Index (IFI) of .915 is high, close to the 1.0 criterion (Worthington & Whittaker, 2006). The Root Mean Square Error of Approximation (RMSEA) value of .069 did not meet the conventional “good”

cut-off of .05, but is still within the range of “acceptable” being under .08 (Hu & Bentler, 1999; Maccallum et al., 1996). The individual indicator variables also show significant loadings onto the factors (see Table 4), indicating a good model fit. The individual factors show lower covariance with, with the exception of the PossSelf and GrowthMS factors correlating at  $p < .001$  level of significance indicating these factors were strongly significantly related to one another. Other significant correlations at the  $p < .01$  level of significance include PossSelf and DivergThink, GrowthMS and Auto, GrowthMS and FixedMS, Direction and FixedMS, Direction and DivergThink, and PossSelf and Direction. Overall, this output is supported by the Study 1 results where the significant  $p$ -values over CFA significantly correlate in the EFA with the exception of Autonomy and Divergent thinking that do not significantly correlate in the CFA ( $p = .824$ ) but do significantly correlate in the EFA ( $p < .01$ ), Growth Mindset and Divergent thinking do not significantly correlate in the CFA ( $p = .073$ ) but do significantly correlate in the EFA ( $p < .001$ ), Goals and Autonomy do not significantly correlate in the CFA ( $p = .056$ ) but do significantly correlate in the EFA ( $p < .001$ ), and Possible Selves and Autonomy do not significantly correlate in the CFA ( $p = .575$ ) but do significantly correlate in the EFA ( $p < .05$ ). This discrepancy could be due to sample size utilized in the CFA or due to confounding variables to the differences in the General Population in Study 1 and the Professional Population in Study 2.

Figure 1. Results of Confirmatory Factor Analysis

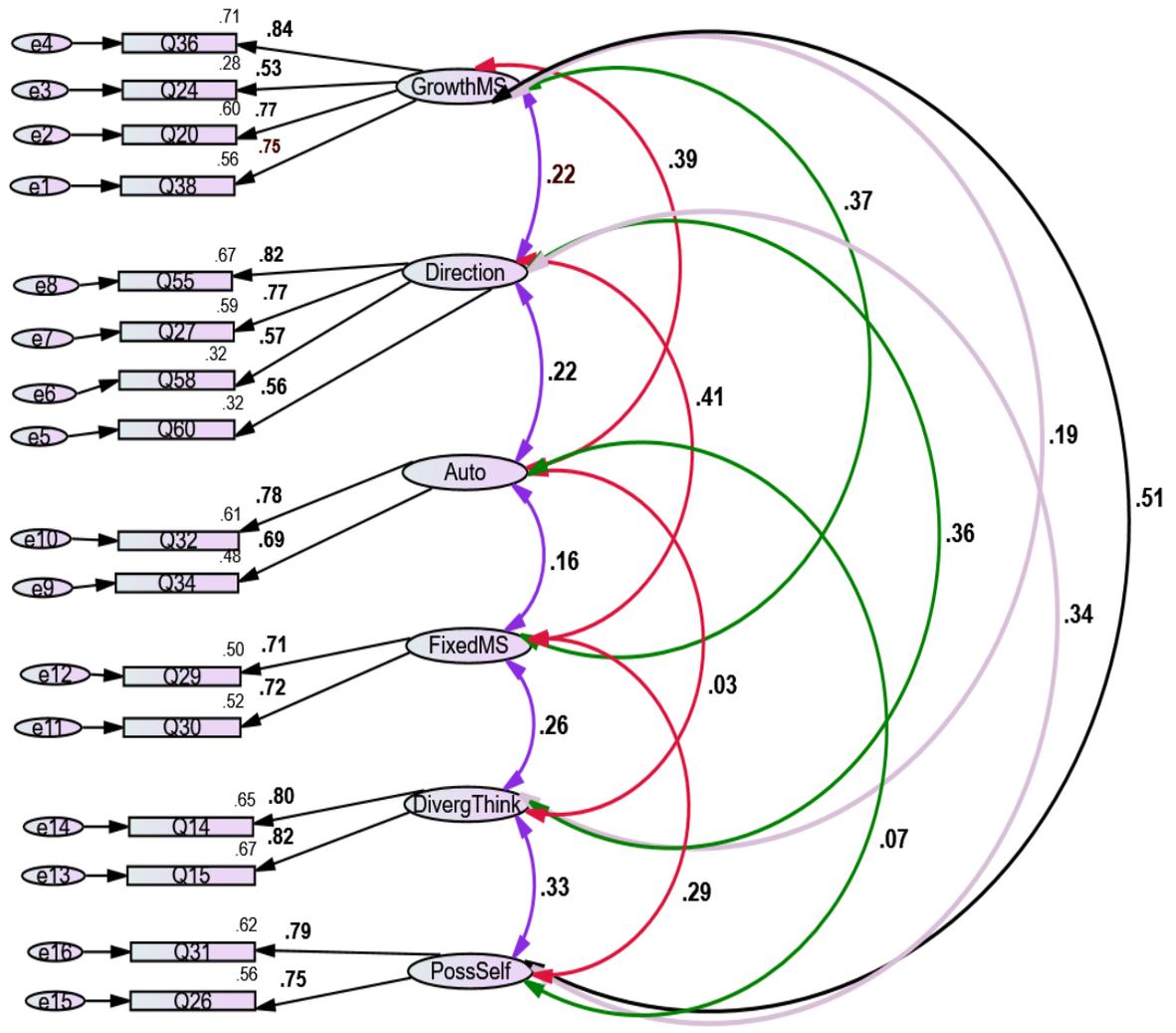


Figure 1. CFA results for the 16-item CAMPS. Ovals on the left denote item error, rectangles denote individual items in the analysis, large ovals denote the factors derived from the Study 1 EFA. Each is connected by a single-headed or double-headed arrow. A single-headed arrow denotes a regression weight, and a double-headed arrow denotes a covariance.

Notes: Growth MS = Growth Mindset, Direction = Goal Setting, Auto= Autonomy, PossSelf = Possible Selves, DivergThink= Divergent Thinking, FixedMS = Fixed Mindset

Table 3.  
Summary of Correlations and Covariances for the 16-item CAMPS

	Factors		Standardized coefficients	Unstandardized coefficient	S.E.	P
GrowthMS	<-->	Direction	.222	.172	.084	.040
Direction	<-->	Auto	.223	.107	.056	.056
Auto	<-->	FixedMS	.158	.060	.048	.213
PossSelf	<-->	DivergThink	.333	.193	.068	<b>.005</b>
GrowthMS	<-->	Auto	.390	.195	.059	<b>.001</b>
GrowthMS	<-->	FixedMS	.370	.226	.074	<b>.002</b>
GrowthMS	<-->	DivergThink	.194	.122	.068	.073
PossSelf	<-->	GrowthMS	.513	.380	.090	<b>.000</b>
Direction	<-->	FixedMS	.407	.240	.074	<b>.001</b>
Direction	<-->	DivergThink	.361	.219	.070	<b>.002</b>
PossSelf	<-->	Direction	.336	.239	.084	<b>.004</b>
Auto	<-->	DivergThink	.026	.010	.045	.824
PossSelf	<-->	Auto	.067	.031	.055	.575
PossSelf	<-->	FixedMS	.290	.163	.071	.021
FixedMS	<-->	DivergThink	.258	.124	.058	.033

Notes: Growth MS = Growth Mindset, Direction = Goal Setting, Auto= Autonomy, PossSelf = Possible Selves, DivergThink= Divergent Thinking, FixedMS = Fixed Mindset  
\*Significant P Values  $P < .01$  are in boldface.

### Study 3

Study 3 consisted of the “Exemplar Population” that was collected over a one month period. Data were collected via a combination of purposive snowball and convenience sampling procedures. Participants were initially selected for participation then verified by a non-partisan screener based on individual fit to the criteria, including that: the participant has made a significant non-linear change, the change was intentional and did not occur by happenstance, and the transition has completed. Of the total 17 potential participants, four were determined to not meet criteria, specifically due to the change being a natural progression and not a significant and non-linear transition. A total of 13 participants were included in this study, with 12 being recommended as a minimum for interview with data saturation (see Onwuegbuzie & Collins,

2007). Of the 13 participants, seven identified as female and six identified as male. Six of the seven females identified as being addicts in recovery, three identified as engaging in prostitution during their addiction, all of the identified as engaging in criminality during their addiction. The six women who identified as addicts in recovery have identified their current lifestyle as prosocial and successful: three identify as current graduate students, four as mental health professionals, one as a nurse, one as nursing assistant. The seventh female identified as being a professor who was in a tenured track position and very successful prior to her transition, and currently identifies as a small business owner of a travel guide company. Five of the six males identified as being addicts in recovery; of those five all identified as being drug dealers in their past, two identified as being homeless at some point in their addiction, and three identified as serving time in jail or prison on their past. The sixth male identified as being a professor who was in a tenured track position and very successful prior to his transition, and currently identifies as a small business owner of a travel guide company, this is the partner of the aforementioned female who shares this story.

Individuals were asked to complete the 16-item CAMPS, review the 63-item CAMPS and list any items that should have been included in the 16-item CAMPS, and finally answer eight open-ended questions about the CAMPS and self-creativity (see Appendix 2). Scores on the 16-item CAMPS ranged from 3.0 to 4.9 and averaged 3.9, individual scores (reported in question one) were: 4.9, 4.7, 4.7, 4.6, 4.4, 4.4, 4.3, 4.3, 4.2, 3.8, 3.6, 3.0, 3.0.

Question two was “Do you believe your score accurately depicts your level of self-creativity? Why or Why not?” Eleven of the 13 respondents agreed that their score seemed accurate and were able to link that back to the internal drive for change through statement such as “Yes, I feel that I am a very creative person whom is goal-oriented” and “Yes I do. I feel I

work hard and succeed at bettering myself”. The two respondents who did not agree did so due to uncertainty about interpreting the score, for example “I’m not quite sure what a score of 3 means so I cannot accurately answer that question”.

Question three was “Is the definition of self-creativity clear? Why or why not?”. Of the 13 participants 12 said yes and provided rationales such as “I absolutely understand what you mean”, “only because I have been able to see it (self-creativity) after I was able to make change”, and “I feel that it was clear and easy to understand”. The 13<sup>th</sup> participant was ambivalent stating “the meaning you give the work is clear. However, I do not think the definition fits the term. I’m not sure how one perceives, or sees a future self. One could create a future self.” Additional feedback from two participants about the definition was that it may be too “academic” and “should be re-worded to an 8<sup>th</sup> grade level; replacing the terms ‘viable’ with ‘more clear’, ‘markedly’ with ‘uniquely different’, and add the ‘willingness to attain it’ to the end of the definition”.

Question four was “Do you consider the definition of self-creativity to be a novel concept?” Of the 13 participants, six said yes and provided some feedback about relating it to perspective and personal life. One of the participants was unsure stating “I’m not sure how to answer this question. I think of it as being different from other forms of creativity. I think of it as being creative with regard to roles”. Six of the participants did not think self-creativity is a novel concept, providing rationales such as “no more novel than hope in general” or “It is simply having the terms to describe the insight one gains after learning about real/possible selves”.

Question five was “Do you believe that these questions (in the 16-item assessment) appear to ask about self-creativity?” Of the 13 participants, 12 responded yes and provided rationales such as “the questions surround life goals, openness to change, and perception of self,”

“I suppose it does considering the result appears pretty realistic,” and “I think they are a good determination if the person possesses this quality”. The 13<sup>th</sup> person stated “No. I think that is better measures one’s openness to change, and willingness and likelihood to enact change on his or her own terms”.

Question six was “Are there any question on the full 63-item CAMPS that you believe should have been included on the final version of the CAMPS that were not?” Responses to this question varied in suggestion, however there were five additional items that consistently overlapped multiple participant responses: item 11 “I know myself well”, item 21 “I know when I need to make changes in my life”, item 35 “I often feel like I’m living my life in a cage”, item 48 “When I think about my future, I can easily picture myself doing a lot of different things”, and item 63 “I don’t let other people tell me what I can or cannot become”.

Question seven was “Please provide feedback on the working of the question on the 16-item CAMPS. Were any of the questions unclear? Are the answer sets easy to understand?” For this question, 12 participants stated that the questions and answer sets were easy to understand, and provided some of the additional feedback focused on the “double-negative / not questions” stating that these had to be re-read to answer, but overall “the questions were well written”. The 13<sup>th</sup> participant stated that “the multiple-choice answers could be more clear. Which one I needed to choose was confusing at times”.

Finally, question eight was “Overall, describe your experience with completing the 16-item CAMPS”. All 13 participants stated that they enjoyed the experience, providing such rationales as “It was good. I found myself sitting back and being thoughtful about my past and future. I enjoy this type of reflection;” “It was a good experience. I learned a lot about myself. The questions were easy to answer;” “Overall, it was a clear and concise assessment;” “My

experience with this test was a good one in that I was able to reflect on my own personal experiences and growth;” “Easy to read and straight forward, easy to interpret, and not time consuming;” and “I liked the way that the questions flip from positive to negative and the score inverts makes the respondent have to really pay attention, which is good. However, that does seem to tip the hand of the survey a little. My point is, everyone wants to be perceived as creative, but clearly not everyone is.”

## **Chapter Five: Discussion**

### **Overview**

The purpose of this study was to validate the newly constructed instrument, the CAMPS, and to utilize that validation process in giving an operational definition to the new construct of self-creativity. The results of this study have answered both primary research questions and are discussed in this chapter. This chapter presents a summary of the three separate studies findings, overall implications of these findings, the limitations of each study, and suggestions for further research.

### **Summary of studies**

#### ***Study 1***

Study 1, the General Population, was utilized to conduct the EFA and a provide preliminary validation through correlational data. This data was collected over a 48-hour period using Amazon MTurk and compensating each participant one dollar. Participants completed the electronic CAMPS, BFI, CESD-R, and CPS. The initial CAMPS had a total of 63 test items and each item had a Likert scale response option. The validation process for this study consisted of data reduction through use of an EFA. The final and most statically significant EFA resulted in a 16-item six factor version of the CAMPS. This initial validation of the CAMPS was then followed by correlating the remaining questions of the CAMPS to the aforementioned assessments. This was executed in two phases. Phase one consisted of correlating the complete 16-item CAMPS to the CESD-R, CPS, and to each scale of the BFI; these analyses provided strong evidence of convergent validity with the CPS and each scale of the BFI, and moderate evidence of discriminant validity with the CESD-R. These results appear to reveal that the overall CAMPS correlated positively with creativity as seen in both the CPS and in the openness

scales, and with traits that may enable an individual to seek out new versions of self as seen in the extraversion scale. Additionally, these results appear to indicate that developing a viable future-self could correlate with conscientiousness and agreeableness scales, whereas depression and neuroticism may hinder the creative processes and self-confidence to develop that future self (John & Srivastava, 1999; Karwowski, 2014; Wolfstein & Trull, 1997).

Then, the CAMPS was divided into its six factors (Growth Mindset, Divergent thinking, Fixed Mindset, Goals, Autonomy, Possible Selves) and the correlational analysis was executed again with each factor correlated with the BFI scales, CESD-R, and CPS. For the relations among the BFI scales and the CAMPS subscales, both the Openness and Neuroticism scales significantly correlate (positively for Openness, negatively for Neuroticism) with all six of the CAMPS factors.

The Extraversion subscale significantly and positively correlates with Growth Mindset, Divergent thinking, Fixed Mindset, Goals, and Possible Selves, but does not significantly correlate with Autonomy. The lack of a correlation appears conceptually consistent given the extraversion subscales overlaps with interdependence whereas autonomy, particularly as the questions in this factor are worded, focus more on independence (John & Srivastava, 1999).

The Conscientiousness subscale of the BFI significantly and positively correlates with the CAMPS factors Growth Mindset, Divergent thinking, Goals, Autonomy, and Fixed Mindset, but does not correlate with Possible Selves. This non-correlation with conscientiousness and possible selves seems to arise from the carefulness and potential rigidity in the conscientiousness factor and the exploratory nature of possible conceptually not fitting (John & Srivastava, 1999; Markus & Nurius, 1986).

The Agreeableness subscale of the BFI significantly and positively correlates with the CAMPS factors Growth Mindset, Fixed Mindset, Goals, Autonomy, and Divergent Thinking, and does not significantly correlate with Possible Selves; this non-correlation could have occurred for similar reasons as consciousness, meaning that the wording of the CAMPS questions and the nature of Agreeableness being more interdependent resulting in a lack of conceptual overlap (John & Srivastava, 1999).

Beyond the Big Five factors, findings show the CPS is significantly and positively correlated with CAMPS factors Growth Mindset, Divergent thinking, Fixed Mindset, Goals, Possible Selves, and Autonomy. Finally, the CESD-R shows the greatest diversity in relations with the CAMPS factors, negatively and significantly correlating with Growth Mindset, Goals, Autonomy, and Divergent Thinking, and sharing no significant correlation with Possible Selves or Fixed Mindset.

Overall, of the CAMPS factors, the Possible Selves factor showed the weakest relations with the validation assessments. This could be due to the nature of the concept only sharing significant conceptual overlap with openness, creativity (the CPS), and extraversion (Dunkel, 2000; Markus & Nurius, 1986; Oyserman et al., 2015; Silvia et al., 2009)

This study 1 data established the foundation for both Research Question 2 (exploring the psychometrics of the CAMPS) and for Research Question 1 (finding an operational definition of self-creativity). Research Question 2 was examined through the validation procedures and the above findings. This question can initially be answered by this study revealing a significant 16-item assessment, each item with communalities over .700 and high factor loading over .700 (Worthington & Whittaker, 2006). This question was additionally addressed through the convergent and discriminant validity analyses. The results showed the CAMPS assessment to

correlate strongly with assessments and scales conceptually similar to the CAMPS, including an assessment that has been used in establishing other creativity scales (Buel & Bachner, 1961; Kaufman, 2012; McCrae, 1987a; Silvia & Kimbrel, 2010), providing evidence of convergent validity. Some moderate evidence of discriminant validity was demonstrated through a weak, statistically significant correlation with the only somewhat related construct of depression.

Research Question 1 can begin to be answered through the EFA analysis as well. The six factors that emerge amalgamate the operationalized definition of self-creativity; to have self-creativity means also building goals, having a growth mindset, desiring autonomy, creating possible selves, and divergent thinking. Furthermore, the convergent and discriminant validity of the accompanying scales also contributes to the definition as including an openness to new experiences and creativity, independence with less focus on interdependence, and positivity as shown by lower levels of depression and neuroticism.

## ***Study 2***

Study 2, the Professional Population, was utilized to conduct the CFA for findings from Study 1. This data was collected over a two-week period via professional listservs and networking sites, participants were not incentivized for completion. Participants completed the electronic CAMPS, BFI, CESD-R, and CPS. The initial CAMPS had a total of 63 test items and each item had a Likert scale response option, however only the 16 items from the EFA in Study 1 were utilized in this study. Validation procedures for the established factor structure of the CAMPS from the Study 1 EFA were executed using AMOS 22.

The 16-indicator variable were sorted by latent variable in AMOS to measure the relationship between the factor and latent variable; latent variables were also correlated with each other to examine the covariance. Analysis for the CFA suggest the 16-item CAMPS model

reasonable fits the data. The RMSEA index was less than ideal (.069), however this was offset by the relative strength of the CFI (.910), TLI (.868), and IFI (.915) indicating an overall satisfactory model fit. These data contribute the Research Question 2 through the confirmation of the findings of the Study 1 EFA, appearing to indicate that the 16-item CAMPS fit the model, thereby adequately assessing self-creativity. Furthermore, Research Question 1 is addressed through the confirmation of the factors and the verification of the item working to define each factor and the overall concept of self-creativity.

### *Study 3*

Study 3, the Exemplar Population, was utilized to assess the face validity of the 16-item CAMPS, the understandability of the assessment and concept, and provide additional feedback about the assessment and concept. Responses were collected over a four-week period from 13 participants, seven women and six men; 11 of the 13 identify as being in recovery from substance dependence and criminality, two made non-linear transitions in professional identity roles. These 13 participants completed the 16-item CAMPS, reviewed the 63-item CAMPS to determine if there are any items that they believe should have been included, and answer questions about the CAMPS and self-creativity. Data from this study reveal interesting results, first the mean score from the 16-item CAMPS for the Exemplar Population is  $M = 4.2$ , with a range of 3.0 to 4.9. This average is higher than that of the General Population  $M = 3.5$  (range 1.4 to 5.0), and the Professional Population  $M = 3.9$  (range 2.4 to 4.9). However, these results are only descriptive, as statistical analyses could not be conducted given the small exemplar sample.

Overall, individuals agreed with their scores being an accurate depiction of their level of self-creativity. For those that did not agree, the rationale was consistently that they were uncertain of how to interpret their score and what it may mean in an application sense. This

confusion can also be seen in the responses pertaining to the novelty of self-creativity; many participants stated that it was not novel or no more so than concepts like hope or possible selves. Twelve of the 13 believed the 16-item CAMPS appears to ask about self-creativity. However, one participant stated that factors such as goal setting and possible selves were addressed but did not believe that the overall assessment explored self-creativity. Participants reported that the item wording and answer sets were easy to understand, with the only exception was some of the negatively worded items requiring more interpretation than other items. Participants were also asked to review the 63-item CAMPS and list additional items they would have included. Participants responded with variations in item addition, however items 63, 48, 35, 21, and 11 (see appendix 1) consistently were suggested as additions to the assessment. Finally, overall the participants reported enjoying the assessment and finding themselves reflecting as they answered each item.

## **Conclusions**

The conclusions and interpretations from this study are organized by the two primary research questions: “How can self-creativity reliably and validly be measured via a survey instrument?” and “How can the emergent themes of the CAMPS provide an operational definition of self-creativity?” These results will be discussed through the theoretical framework of the study.

### ***Research Question 1***

What is the operational definition of self-creativity? This question is addressed through the interplay of the three studies that compose this dissertation. Based on the emergent factors of Study 1 that are confirmed by Study 2, self-creativity is composed of growth mindset, goal setting, conceptualization of possible future selves, being autonomous, and utilizing divergent

thinking strategies when problem solving. Study 1 convergent and discriminant data provides additional framing of attributes of self-creativity that include possessing creative traits, being outgoing and open to new experiences, being detail oriented and consciousness, show interdependence, possess distress tolerance for life's difficulties and overwhelming emotions. Finally, the items suggested by the exemplars were placed back into the model and the overall model fit still remained high  $KMO = .851$ ,  $DF = 210$ ,  $p < .001$ ; additionally, no new factors arose from the addition of the items. Item 11 "I know myself well" did not load significantly onto a factor. Item 21 "I know when I need to make changes in my life" loaded onto the Goals factor (.649). Item 48 "When I think about my future, I can easily picture myself doing a lot of different things." loaded onto the Possible Selves factor at .628. Item 35 "I often feel like I'm living my life in a cage" and item 63 "I don't let other people tell me what I can or cannot become" loaded onto the Autonomy factor at .601 and .638 respectively. This gives further credence to the existing factors as parameters for an operationalized definition of self-creativity. An additional facet to highlight is the subjective enjoyment of the completing the assessment due to the introspection evoked in the process. It is this facet of the responses that is particularly interesting as this harkens back to the insight component that was included in the literature but was not a factor in the 16-Item CAMPS. It appears that insight may compose an extraneous factor, one that is brought into the assessment by the nature of the questions themselves. With this revelation, all the components discussed in Chapter 2 (Possible Selves, Mindset, Divergent Thinking, and Insight) have been evoked though the CAMPS validation processes.

## ***Research Question 2***

What are the psychometric properties of the Creativity Assessment for the Malleability of Possible Selves? To date, there are no studies that have investigated self-creativity or a means to test this construct. The present dissertation utilized three separate studies to explore this question. Study 1 findings created the foundation that the subsequent studies were constructed. Study 1 focused on item reduction, exploration of item factoring, and aimed to yield a statically significant EFA that could be utilize in a CFA and, ultimately provided to the Exemplar Population. The initial 63-item CAMPS was constructed through the lens of divergent thinking, growth mindset, possible selves, and insight, as well as the conceptual definition of self-creativity; these concepts guided the item development content. The construction of the item wording and answer set was based on existing scale construction methods and best practices literature (Dawis, 1992; Duckworth et al., 2007; Furr, 2011). Analysis procedures for the EFA were guided by best practices and the interplay of the conceptual foundations of divergent thinking, mindset, possible selves, and insight (Adelson, 2003; Dweck, 2006; Field, 2013; Karwowski, 2014; Markus & Nurius, 1986; Silvia et al., 2009; Worthington & Whittaker, 2006). The result of this process yielded a statistically significant 16-item assessment with strong factor loading over .700 and communalities over .700 (Field, 2013; Worthington & Whittaker, 2006). This reduction also yielded six factors that, based on item content, were named Growth Mindset, Goals, Fixed Mindset, Possible Selves, Autonomy, and Divergent Thinking. After that initial reduction that yielded the 16-item CAMPS, convergent and discriminant validity checks were employed utilizing assessments that were anticipated to converge with the 16-item CAMPS and those that were expected to negatively correlate or not correlate at all. Strong positive correlations at the  $p < .001$  level of significance were found with the CAMPS and the CPS, and

multiple scales of the BFI (Openness, Extraversion, Conscientiousness, and Agreeableness). Significant negative correlations at the  $p < .001$  level of significance were found with the Neuroticism BFI subscale and with the CESD-R. This Study 1 data showed a conceptual overlap with the aforementioned foundational literature, therefore conceptually approximating self-creativity with the totality of these factors.

Study 2 utilized AMOS 22 to conduct a CFA on the initially validated factors in the EFA. To confirm the model derived from the EFA, factors corresponding factors were placed in path diagram for analysis. Data analysis thought the analysis included the standardized regression weights from indicator variable (item) to latent variable (factor), and correlations between the six established latent variables. The results of this analysis confirm an overall reasonably acceptable model fit with the RMSEA index was less than ideal (.069), but was moderated by the CFI (.910), TLI (.868), and IFI (.915). All indicator variables correspond significantly with the corresponding latent variables at  $p < .001$  level of significance, meaning that there is a significant predictive validity of the latent variable by the indicator variables. All latent variables covary at  $p < .05$  or better, except for Autonomy and Possible Selves, Divergent Thinking, and Fixed Mindset, and Growth Mindset and Divergent Thinking. However, removal of Autonomy does not improve the model fit indices with the exception of the RMSEA that increases to .080, while the CFI lowers to .901, the IFI lowers to .906, and the TLI lowers to .851 indicating that the intact 16-item CAMPS fits the data despite Autonomy not covarying with four of the five other latent variables.

Finally, Study 3 data collected through interviews of an exemplar population was the final component to assessing the validity of this assessment. Overall, participants seemed to believe that the items on the CAMPS asked about self-creativity, and that the score that they

received was an accurate depiction of their level of self-creativity. Participants also responded that the items and answer sets are easily to understand, and that the concept of self-creative is also clear. An additional component contributing to the overall validity of the assessment was the mean results and the range of scores. Though these results are not intended to provide statistical evidence, they do suggest descriptively that exemplar' scores on the CAMPS are likely to be higher than professionals in the counseling field, both which are likely higher than those of a general population. These results give preliminary credence to the validity of the instrument though future research needs to be done to provide more concrete evidence of this.

### **Limitations**

One of the significant limitations of this study was the newness of the concept itself. Because of the unfamiliarity with the new concept, participants may have been uncertain of the wording for some of the questions in Study 1 and Study 2, and Study 3. In study 3, participants stated that while they had a superficial understanding of the concept, when it was discussed individuals sometimes had difficulty separating artistic creativity from self-creativity. Similar confusion occurred pertaining to the score interpretation. There was no manual or scoring instructions provided beyond what was written on the 16-Item CAMPS. While intentionally done to assess the clarity of the overall assessment, score interpretation was a source frustration for some participants, thereby limiting the self-administrability of the CAMPS as it is currently without a manual. Study 1 and Study 2 data were collected electronically so the veracity of the answers cannot be determined, despite data cleaning procedures this could be a confounding variable. Study 1 and Study 2 participants were not asked for specific feedback about the items or the definition of self-creativity, this was a missed opportunity to gain additional feedback. The sample size for Study 3, though adequate by minimal standards, was small. A larger sample

with more diverse backgrounds could provide additional insights into the CAMPS and into the interpretation of self-creativity. Finally, the recommendations of the exemplars were only noted but not implemented into the assessment, such as the addition of items or re-wording the definition of self-creativity.

### **Implications for Future Research**

Implications for future research can explore self-creativity conceptually as well as quantitatively. As described in the limitations, some of the missed opportunities from this series of studies can be addressed and implemented. First, having a larger participant pool focus on the definition of self-creativity to ensure it is understandable by a broad range of people. This would provide the potential to increase the validity and reliability of the assessment by individuals clearly understanding what they are assessing. Next, utilizing a larger exemplar population to take the assessment, provide feedback, then integrate that feedback, and re-test. Further exploration of the CAMPS psychometric properties could focus on the factor structure and item wording, particularly the factors of Growth Mindset (composed of items using “I” statements) and Fixed Mindset (composed of factors using “people” statement). Further exploration of the perceived malleability of self versus the perceived malleability of others warrants additional research to contribute conceptually to the identity development field, and to the validity of the CAMPS. Additionally, expanding the conceptual components of self-creativity to including the exploration of and potential correlation with cognitive complexity, and how this specific construct influences the degree to which self-creativity is expressed. Finally, the creation and implementation of a manual or detailed instructions for administration and score interpretation could yield a more meaningful experience for the participant.

Broadly speaking, this is a budding concept that is in the infancy of its understanding. Self-creativity and the CAMPS has the potential for integration into therapeutic, forensic, scholastic, and career settings, however not enough is known about this concept or the generalizability of the CAMPS to substantiate this assumption. Future research should focus on in-depth analysis and target group comparisons for determination of appropriateness to these diverse populations.

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## Appendix 1

### 63-Item CAMPS

- Q1) Having time to reflect on my ideas is very important to me  
R-Q2) I am often a very serious person  
Q3) When I am really passionate about something, I lose myself in it  
Q4) I am very good at putting myself in other people's shoes  
R-Q5) I rarely change my opinions  
Q6) It is easy for me to understand abstract concepts  
R-Q7) Even if I don't like something, I will never quit  
Q8) I have a lot of interests  
Q9) Feeling inspired is a common occurrence for me  
Q10) I know what I do NOT want to become  
Q11) I know myself very well  
R-Q12) It is hard for me to think of myself differently  
R-Q13) I am who I am and I don't think that will ever change  
Q14) When I am faced with a problem, I can easily think of multiple solutions  
R-Q15) When I have a problem, it is hard for me to think of multiple ways to solve it  
R-Q16) I like problems that have one clear solution  
R-Q17) It is difficult for me to think of a career that I would like a lot  
Q18) I am a "big picture" kind of person  
Q19) When I don't like something about myself I change it  
Q20) I handle change well  
Q21) I know when I need to make changes in my life  
Q22) I have worked very hard to make changes in my life  
Q23) I embrace change  
R-Q24) I have trouble adjusting when things don't go as planned  
Q25) When I set my mind to something I do it  
Q26) When I think about my future, it is easy for me to picture myself as different than I am now  
Q27) It is very important to achieve goals I set for myself  
Q28) Working hard to achieve my goals is just as important as actually achieving them  
Q29) People rarely change  
R-Q30) No matter how hard people might try, they can't change who they are  
Q31) I can see my future as different from my present  
Q32) I am in charge of my life choices  
R-Q33) My life course is pretty much set in stone  
Q34) Most of the decisions I make in life are my own  
R-Q35) I often feel like I'm living my life in a cage  
Q36) I welcome change in my life

R-Q37) I am rigid  
R-Q38) I am uncomfortable with change in my life  
Q39) My friends often say I am creative  
Q40) I often find interesting ideas just popping into my head  
Q41) I like to think of things in a new or different way  
Q42) I am open to new experiences  
R-Q43) I cannot escape my past  
R-Q44) Who I can become, completely depends on who I am now  
R-Q45) My past determines my future  
R-Q46) I never know when to quit  
R-Q47) The future is vague and uncertain to me  
Q48) When I think about my future, I can easily picture myself doing a lot of different things  
Q49) I have made significant changes in my life  
Q50) I have changed myself in significant ways  
Q51) I can think of a lot of things that would make me happy  
Q52) When I make a promise to myself I always keep it  
Q53) I work very hard to make changes in my life  
Q54) I like to think about how things could be  
Q55) I set goals for myself  
Q56) It is important for me to reflect on my life  
Q57) I know who I don't want to be  
Q58) When I make a goal for myself, I can easily think of all the steps needed to achieve it  
Q59) I think there can be many paths to achieving a goal  
Q60) It is important for me to know how to achieve goals I set for myself  
Q61) I can easily picture what my life will be like in the future  
Q62) I know exactly who I want to be 10 years from now  
Q63) I don't let other people tell me what I can or cannot become

Response Items:

1. Not at all like me
2. Somewhat not like me
3. Neither like me nor not like me
4. Somewhat like me
5. Very much like me

## Appendix 2

### 16-Item CAMPS

*This assessment aims to explore the new concept of self-creativity, defined as the ability to perceive a viable future self that is markedly different from the current self.*

*Please answer the questions as honestly about your beliefs as you can.*

1. People rarely change
  5. Not at all like me
  4. Somewhat not like me
  3. Neither like me nor not like me
  2. Somewhat like me
  1. Very much like me
  
2. No matter how hard people might try, they can't change who they are.
  5. Not at all like me
  4. Somewhat not like me
  3. Neither like me nor not like me
  2. Somewhat like me
  1. Very much like me
  
3. I welcome change in my life.
  1. Not at all like me
  2. Somewhat not like me
  3. Neither like me nor not like me
  4. Somewhat like me
  5. Very much like me
  
4. I set goals for myself.
  1. Not at all like me
  2. Somewhat not like me
  3. Neither like me nor not like me
  4. Somewhat like me
  5. Very much like me
  
5. It is very important to achieve goals I set for myself.
  1. Not at all like me
  2. Somewhat not like me
  3. Neither like me nor not like me

4. Somewhat like me
  5. Very much like me
6. I have trouble adjusting when things don't go as planned.
5. Not at all like me
  4. Somewhat not like me
  3. Neither like me nor not like me
  2. Somewhat like me
  1. Very much like me
7. I can see my future as different from my past.
1. Not at all like me
  2. Somewhat not like me
  3. Neither like me nor not like me
  4. Somewhat like me
  5. Very much like me
8. When I make a goal for myself, I can easily think of all the steps needed to achieve it.
1. Not at all like me
  2. Somewhat not like me
  3. Neither like me nor not like me
  4. Somewhat like me
  5. Very much like me
9. I handle change well.
1. Not at all like me
  2. Somewhat not like me
  3. Neither like me nor not like me
  4. Somewhat like me
  5. Very much like me
10. When I think about my future, it is easy for me to picture myself as different than I am now.
1. Not at all like me
  2. Somewhat not like me
  3. Neither like me nor not like me
  4. Somewhat like me
  5. Very much like me
11. When I am faced with a problem, I can easily think of multiple solutions.
1. Not at all like me

2. Somewhat not like me
3. Neither like me nor not like me
4. Somewhat like me
5. Very much like me

12. When I have a problem, it is hard for me to think of multiple ways to solve it.

5. Not at all like me
4. Somewhat not like me
3. Neither like me nor not like me
2. Somewhat like me
1. Very much like me

13. I am in charge of my life choices.

1. Not at all like me
2. Somewhat not like me
3. Neither like me nor not like me
4. Somewhat like me
5. Very much like me

14. Most of the decisions I make in life are my own.

1. Not at all like me
2. Somewhat not like me
3. Neither like me nor not like me
4. Somewhat like me
5. Very much like me

15. I am uncomfortable with change in my life.

5. Not at all like me
4. Somewhat not like me
3. Neither like me nor not like me
2. Somewhat like me
1. Very much like me

16. It is important for me to know how to achieve goals I set for myself.

1. Not at all like me
2. Somewhat not like me
3. Neither like me nor not like me
4. Somewhat like me
5. Very much like me

*To score the assessment, please add your scores and divide by 16. A score of 5 indicates a high level of self-creativity and a score of 1 indicates a low level of self-creativity.*

Score = total/16.

My Score: \_\_\_\_\_

### Appendix 3

#### Interview protocol questions

- 1) Please report your score on the 16-item assessment.
- 2) Do you believe your score accurately depicts your level of self-creativity?
  - a. Why or why not?
- 3) Is the definition of self-creativity clear?
- 4) Do you consider the definition of self-creativity to be a novel concept?
- 5) Do you believe that these questions (in the 16-item assessment) appear to ask about self-creativity?
  - a. Why or why not?
- 6) Are there questions on the full 63-item CAMPS that you believe should be included on the final 16-item CAMPS?
- 7) Please provide feedback on the wording of the questions.
  - a. Were any of the questions unclear?
  - b. Are the answer sets easy to understand?
- 8) Overall, describe your experience with completing the 16-item CAMPS