Affective Identity Predicts Entrepreneurial Intent with Two Forms of Self-Entrepreneur Congruence

By

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Author’s Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

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Abstract

Vocational psychologists have theorized that the congruence between self and occupations is the key to find fulfilling careers for individuals (Vondracek & Porfeli, 2011). However, the typical use of vocational interests to capture information about the self has been limited because it does not disentangle identity and work preferences in people's responses in vocational assessments. People cannot be fully informed of careers most fitting to them if the vocational assessment does not capture distinct information about their identity. In this study, we strive to disentangle identity from preferences by including affective identity, which is sentiments that people hold towards themselves, as a predictor for career intent. Focusing on the context of entrepreneurship as a career, we examine how the congruence of affective identity and affective ratings of entrepreneurs provide additional information in predicting entrepreneurial intent beyond work preferences congruence. We invited undergraduate students from a Canadian University to complete an online-survey for an extra credit in their psychology course. We examined the impact of different congruence form of intent by including linear and polynomial terms of self and entrepreneur ratings when conducting a hierarchical linear regression. In general, we found support for the validity of our developed measure and demonstrated that contemporary congruence forms based on factors of affective identity brings new information in career choice perception. Affective identity accounts for unique predictability of self perception beyond vocational preference, which suggests the potential use of affective identity for career search feedback.

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To my loved ones.

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INTRODUCTION

A basic task for the field of vocational psychology has been to explain why people pursue particular careers. Researchers have identified a variety of specific influences on career choices, such as wanting to increase self-efficacy (Betz & Hackett, 1981). Two of the predominant, broad categories of theorized influences involve work preferences, on the one hand, and the self and identity on the other.

Through experiences that begin in childhood, people arrive at preferences for work or non-work activities in relation to data (e.g., doing math), things (e.g., craft work), ideas (e.g., doing research) or other people (e.g., care giving), according to one widely-known scheme (Prediger & Vansickle, 1992). Subjectively expected utility (S.E.U.; Edwards, 1954) and related motivational theories (e.g., social cognitive theory; Bandura, 1986) can readily explain—through concepts of expected utility or anticipated reward—why a person's perception of the work activities offered in a particular occupation will make that occupation more or less attractive to the person (Teuscher, 2003). Attraction to careers could boil down to the answer to the question: "Which work would I enjoy and otherwise find rewarding?"

However, people also arrive at core self-perceptions over time. Self-perceptions that concern core aspects of the self (i.e., perceived to be consequential morally, practically, etc.) bear on identity—the answer to the question "Who am I?" in relation to other individuals and social groups (Burke & Stets, 2009). At least since the mid-twentieth century (e.g., Super, 1957), if not much earlier (Parsons, 1909), vocational psychologists have pointed to influences of self-perception and identity upon attraction to particular occupations and careers. Congruence between perceptions of the self and potential occupations has been seen as key.

Influences in these two broad categories (i.e., self and identity, and work preferences) can be intertwined, especially at the operational level, making it difficult to establish one or the other as a basis for attraction to particular careers. For example, in vocational counseling, people often complete measures that assess preferences for particular work activities (writing an advertisement, cooking a meal, etc.). On the one hand, the hedonic utility of those activities may

be most salient ("Would I enjoy doing that?"). On the other hand, especially in the context of completing a "vocational preferences" survey, one's answer about preference for "cooking a meal" could be influenced partly by imagining oneself as a cook or chef. During this imagining, perceptions of identity congruence could develop and influence one's answer.

Thus the first objective of this paper is to provide distinct evidence of the influence of identity—that is, beyond work preferences—on career intention. In pursuit of this objective, congruence will be assessed between self-perceptions pertinent to identity, and perceptions of a particular career—namely entrepreneurship. Specifically, congruence of entrepreneurship with one's affective identity (MacKinnon & Heise, 1993) will be assessed. Affective perception can be characterized by three aspects: Evaluation, Potency and Activity (Osgood, Suci, and Tannenbaum, 1957). Evaluation involves hedonic judgments of good versus bad. Potency involves judgments of power an entity appears to have. Activity involves judgments of liveliness an entity has. Accordingly, affective identity is one’s sentiment regarding themselves in terms of Evaluation, Potency, and Activity judgments. One reason for keying on affective identity is that its measurement appears to allow little or no overlap between the utility and identity categories of influence sketched earlier. Another reason is that affective identity is fundamental in social life (MacKinnon & Heise, 2010).

The second objective of the paper is to describe two forms that identity-career congruence may take—individual and collective—and to demonstrate their operation with empirical data. This individual/collective distinction in form of congruence arises in this context partly because of the interactive nature of identity. That is, it is not only self-perception but also others' perception of the self that matters in identity (Stryker, 1968), because a person cannot hold securely an identity that is not endorsed by anyone else. Any career that is commonly referenced in a society (doctor, janitor, entrepreneur) acquires a standing and other identity-relevant attributes that are somewhat consensual. Around this collective perception, individual variation also can be expected. Thus, a student who contemplates entrepreneurship as a possible

career may perceive congruence either in relation to the collective, consensual perception or to individual perception.

The third objective is to create a measure that can be used to assess congruence between one's own explicit career preference and perception of a focal or target career. Although this measure draws upon dimensions in Holland's (1973) Realistic-Investigative-Artistic-Social-Enterprising-Conventional (RIASEC) scheme for characterizing vocational preference, it does not rely on answers to questions about preferred work activities. Instead, attraction and perceived similarity to specified occupations were assessed, for reasons stated later.

The fourth objective of this paper is to contribute to promotion of entrepreneurship as a career direction for people well-suited to it. Entrepreneurship has become an important vocation as they can promote financial growth with innovative products or services they deliver, and invest in human capital when entrepreneurs need more talents to build their business (Zahra & Dess, 2001). Toward the end of promoting entrepreneurship, entrepreneur educators may be able to build upon our novel application of affective identity theory and our creation of a new measure of career preference.

The organization of this paper is as follows. First, we will review literature concerning connections between self-perception and vocational choice, including the impact of congruence. Next we will discuss the recognized forms of congruence, and why research on entrepreneurship as a career choice prompts consideration of an expanded concept of congruence. The broadest purpose of this study is to establish that multiple aspects of self—work preference *and* identity—predict entrepreneurial intent. We will present our empirical study that uses affective identity and vocational preference scores to predict entrepreneurial intent. In examining findings we will comment on different congruence types reflected in our multiple regression results. Finally, we will discuss how consideration of a previously overlooked aspect of self, affective identity, extends the conceptualization of self and career fit.

Self and Vocation Choices

Vocational psychologists have often centered their theories on the self and its relationship with career choices (Savickas, 2011). One's self-concept can be broadly defined as including characteristics, roles, and emotions that one has across different contexts (Baumeister, 1999). When vocational psychologists have assessed personal preferences to understand career decision-making (Osipow, 1990), these preferences may be seen as personal characteristics and therefore self-relevant because people perceive them to be personal characteristics as well.

One prominent example of a scheme for work-related preferences is Holland's (1973) formulation of six categories of vocational interest types. These categories are conceptualized to be in a circumplex/hexagonal shape with the premise that these personality and environment types are stable, and neighbouring categories share some similar psychological characteristics (Holland, 1973). Specifically, Holland's (1959) categories are list below, and will be referred as RIASEC for the remainder of this paper:

1. Realistic (technical, skilled, and labouring occupations)
2. Intellectual [Investigative] (scientific occupations)
3. Artistic (artistic, literary, and musical occupations)
4. Social (educational and social welfare occupations)
5. Enterprising (sales and managerial occupations)
6. Conventional (office and clerical occupations)

One measure which operationalizes these categories asks individuals to answer questions about the work activities they *prefer* to do most. On the one hand, a person's expression of these preferences can be understood as expressions of self (cf., Savickas, 2011) with potential for identity-maintenance-based motivation. Alternatively, preferences can be considered more simply as hedonic choices that individuals desire to make. Preference assessment typically does not ask individuals to think about characteristics that are symbolic or representative of whom they truly are. As noted in the opening of this paper, preferences could guide behavior through

motivational processes involving anticipated reward (e.g, Bandura, 1986), not self-concept or identity maintenance.

The remaining components of the self—roles and emotions—are more tied to identity. Identity can be considered as comprising three elements: one's role, one's ideal role, and one's values of a role (Baumeister, 1999). While the component of roles seem central to the definition of identity, one's values of a role may include how one affectively feels towards the entity. One's value, such as one's attitude towards helping others, may be mainly an affective decision when the values are psychological and abstract. Overall, identity can be thought of symbolic choices that individuals perceive. In our research, we focus on the affective side of identity, instead of the cognitive side (such as how one conceives of roles; see MacKinnon & Langford, 1994).

Affect control theory (MacKinnon & Heise, 1993) is a cybernetic theory (e.g., after Carver and Scheier, 1982) that describes how a person's fundamental sentiments influence behavior. Vondracek and Porfeli (2011) suggested that this theory may illuminate career decision making because it supports the fuller understanding of the self as an active, changing agent who operates as a control system between the self and context in a dynamic relationship.

To characterize people's fundamental sentiments, the theory draws on the three dimensions of meaning uncovered by Osgood, Suci, and Tannenbaum (1957). Evaluation represents judgments of good versus bad. Potency represents judgments of powerful versus powerless. Activity represents judgments of lively versus inactive. These three dimensions are assumed to be the core descriptive dimensions that human intuitively and universally experience (Francis, 2006).

People hold fundamental sentiments toward a wide array of social and non-social entities, objects, and situations. For example, the career of elementary school teacher could be seen as rather good, slightly powerful, and a bit more active than powerful. The corresponding sentiments that people hold toward themselves are their affective identities (in our use of this term). The cybernetic aspect of the theory indicates that people will make choices or enact behaviors that bring the self or situation back into alignment with fundamental sentiments. Thus,

as applied to vocational choice, the theory predicts that someone with an affective identity that closely matches the elementary school teacher example will be someone who is relatively more attracted to that career than other people would be.

In the present research, assessment of congruence between affective identity and the focal career of entrepreneurship began as a fairly simple matter of obtaining ratings of self and entrepreneurs on bipolar scales for the EPA dimensions. Taking account of the relation of EPA dimensions to social roles and stereotypes (e.g., Cuddy, Fiske, & Glick, 2007; Cuddy, Glick, & Beninger, 2011), and as detailed later in this paper, the dimensions were combined into orthogonal scores for perceived competence and perceived warmth of self and entrepreneur. Given the origin of these methods in the body of work on identity in relation to affect control, and given the contrast between the face content of the EPA scales as compared with work or career preference measures, we claim to be capturing self-entrepreneur congruence in a manner that is particularly suited to demonstrating a unique role of identity in vocational choice.

Elaborating and Testing Two Forms of Congruence

Past research from various traditions has provided empirical support for the notion that self-environment congruence is a desirable state. Environment is limited to physical surroundings, but can be interchangeable with career or other situations. For example, a longitudinal study that measured one’s vocational interest and reported careers found that stronger congruence is most associated with higher reported intrinsic job satisfaction (Swaney & Prediger, 1983).

However, the assessment of congruence in research is not as simple as it might seem. Edwards (1994) and his colleagues (e.g., Edwards & Parry, 1993) have described various pitfalls and improvements to congruence assessment. Perhaps the most basic error is to assume that a straightforward difference score (e.g., self minus career on commensurate dimensions such as evaluation or potency) is sufficient. One of several problems with this method is that if one of the two variables has little variability, the score will mostly be a function of the varying score, and associations involving the "congruence score" may reflect a linear effect, not a congruence

effect.[1] Other related problems beyond this methodological problem include having a lower internal consistency reliability of the difference score if the two variables have low reliability and/or high correlation (Peter, Churchill, Brown, 1993) and having theoretically impossible amounts of variance explained if the regression weights of the two variables are equal but opposite signs (Edwards, 1994).

Thus the better practice for present purposes is to conduct a simultaneous analysis (as with multiple regression) in which the outcome (attraction to an entrepreneurial career) is predicted from linear variables for self and career plus congruence isolated from the linear variables. Following Edwards and Parry (1993), to accomplish this isolation we will use polynomial regression, which, in effect, uses the following algebraic form to capture congruence: (self-entrepreneur)^2.

We will refer to this algebraic form of congruence as "individual" congruence because it is specific, even idiosyncratic, to each individual in the study, given its use of the particular scores for self and entrepreneur from the individuals in the sample. Although this form of congruence is a fully meaningful one, it may not be the only one that is pertinent in this context.

Affect control theory and related identity theories indicate that members of a society arrive at somewhat consensual perceptions in relation to socially significant matters such as one's career or occupation. This consensus contributes to the identity claims that a person can make when holding an occupation; if there were little consensus, it would be impossible to draw on one's career as an identifying feature of the self because it would have little meaning (or unpredictable meaning) to other people.

Accordingly we propose "collective" congruence as a counterpart to the individual congruence that has been dominant in research. The basic idea for the present study is that data from a sample as a whole will "locate" the average perception of self and the average perception

[1] Findings in Lee (1998), concerning affective identity and careers, are compromised in this way, even though the calculation involved a squared difference to remove directional effects.

of entrepreneurs along measured dimensions as from the EPA or RIASEC schemes. By taking account of these relative locations, the linear terms in multiple regression for self and entrepreneur become potentially interpretable for collective congruence. Imagine a data set that includes scores for perceptions of the self on the Enterprising dimension (Se) and a corresponding score for perceptions of entrepreneurs (Ee); an outcome variable pertains to attractiveness of entrepreneurship as a career. Suppose further that the average score for entrepreneurs (mean Ee) were considerably higher than the average for self. In that case, one interpretation of a positive linear effect for Se would be as an effect of collective congruence: People with self scores that are more in the direction of the entrepreneur's average, relative location on the dimension is more attracted to entrepreneurship.

Of course there could be other bases for such a pattern in the data, and some patterns would point against the presence of collective congruence as we have defined it. The present study seeks merely to explore this line of reasoning within the polynomial regression framework.

Self and Entrepreneur Intentions

The specific career intention examined in this study is toward entrepreneurship. Entrepreneurs are commonly defined with the actions they take: goals of profit, growth for their ventures, and use of strategic planning (Carland et al., 1984; as cited in Stewart et al., 1999). Entrepreneurs are important because of the wealth, innovation, and knowledge they potentially generate for the society (Shane & Venkataraman, 2000). Apart from these indirect benefits, entrepreneurs affect immediate others by developing more talent and intellectual ideas (Zahra & Dess, 2001). Individuals having trained in the entrepreneurial mindset are enriched with opportunity recognition—the key to progressing an organization and society in changing times.

A handful of studies have investigated entrepreneurial intention in relation to aspects of the self (e.g., Van Gelderen, Brand, van Paag, et al., 2008; Obschonka, Silbereisen, & Schmitt-Rodermund, 2010; Luthje & Franke, 2003). However, these studies did not apply the idea of congruence. The researchers used various personality, prior experience, and self-efficacy reports

to predict entrepreneurial intent without capturing how respondents respond with regards to their perception of entrepreneurs.

Measuring Vocational Preference in Relation to a Target Career

Assessment of congruence between self-perceptions and perceptions of entrepreneurship as a career requires "commensurate" measurement for self and entrepreneur. For affective identity, commensurate measurement was accomplished by obtaining semantic differential (e.g., "good" ... "bad") ratings separately for perceptions of the self and entrepreneurs.

For vocational preference, we developed a measure that would tell the perceived location of both the self and entrepreneur in a common vocational preferences space, implemented as RIASEC. Questions about work preferences ("Do you like to cook?") were avoided, because respondents would then be forced to guess when answering questions such as "Do entrepreneurs like to cook?" Instead we placed specific occupations on opposite ends of a semantic differential-styled scale. For the self version of the scale, respondents rated their relative preference between the two occupations; the entrepreneur version assessed relative similarity of entrepreneurship to the two occupations." As detailed in the Methods section, occupations were selected as exemplars of R, I, A, S, E, and C.

If a measure of this form truly coincides with vocational preference, then the self version of the form should correlate well with the more common approach of asking about preferences for specified work activities. Validation of this form will be presented in the Results section.

METHOD

Participants. Two hundred and ninety two undergraduate students from a Canadian university participated in this current study. Participants were offered an extra credit toward a psychology course grade in compensation for completing a 60-minute on-line study. A majority of participants were female (68.5%) with a mean age of 20.46 (*SD* = 4.05).

Measures. The primary materials used for the study is a composite of 15 multiple measures related to characteristics of self and entrepreneurs (e.g., self report risk-taking scale). The six questionnaires relevant for this paper included the following measures presented in this order (with the other, non-relevant scales, in between):

Affective Identity Components: Evaluation (E), Potency (P) and Activity (A). Participants were asked to rate themselves and entrepreneurs, separately, in terms of the EPA dimensions using 13 semantic differential scales. Three original scales were drawn from Heise (2010): “bad, awful … good, nice” (E), “little, powerless … big, powerful” (P), and “inactive, slow … active, fast” (A). The remaining additional scales were composed by the authors. Scaled relating to E were “indifferent … nice,” “less effective … more effective,” “less desirable … more desirable,” and “cold … warm.” Scales relating to P were “weak … strong,” “responsive … dominant,”, and “follower … leader.” Scales relating to A were “calm … aroused,” “stable … dynamic,” and “quiescent … energetic.” For each item, the first term appeared at the far left of the web page and the other at the far right. A radio button directly under each term was labeled "completely." Seven other radio buttons appeared between these, alternately unlabelled or with the labels: "somewhat," "neutral," and "somewhat." Participants were asked to “click on the corresponding button on each of the scales below to indicate your perceptions…about Yourself (Your True Self)” for 13 scales listed above, then “…about Entrepreneurs” for the same 13 scales mentioned above. The scoring starts from the left most term with a value of -4, with each radio button towards the right having an increment of 1 value, resulting the right most term with a value of 4. The scoring of E, P, and A dimensions are calculated by averaging the scores of the scales that relate to each dimension.

Vocational Interest Dimensions. Armstrong, Allison and Rounds's (2008) 96-item Vocational Interest Inventory was used. Participants rated themselves only, under the assumption that they would find it difficult or odd to try to provide corresponding ratings for entrepreneurs. Two 48-item forms of the inventory are supplied in that source; we randomized the sample to make one or the other form of the inventory available. Thus the subscales for Realistic, Investigative, Artistic, Social, Enterprising and Conventional (RIASEC) interests each had 8 items. The reliabilties (Cronbach's alphas) of these two forms ranged from .79 to .89 in our sample's data. The authors of this scale validated this measure with Holland's RIASEC structural model using circular unidimensional scaling. The fit statistics for the circumplex structure, variance accounted for (VAF) ranged from .72 to .79, met the .60 cut-off value (Armstrong et al., 2003), and thus supports that the A and B forms replicates the RIASEC circumplex structure. Participants were asked to indicate how much they would like or dislike their job to involve each of the listed job activities using a 5-point scale, *strongly dislike, dislike, neither like nor dislike, like,* and *strongly like,* with *strongly dislike* having a value of 1, and *strongly like* having a value of 5.The score of each dimension is a sum score of the values of the items that relate to the corresponding dimension.

Vocational Preference/Alternative Vocational Interest Measure. The authors developed an alternative method of assessing one's RIASEC preferences which could more readily be answered about entrepreneurs as well as about the self. The intent was to arrive at a location for self and entrepreneur within the RIASEC circumplex space. The space was conceived as having 3 non-orthogonal axes R-S, I-E, and C-A. Accordingly, the items of the measure consisted of pairs of occupations, one member of the pair coming from one or the other axis pole. Running left to right between the two occupations were 6 "radio buttons" for indicating a response. For the self version of the scale, respondents were instructed: "Please indicate your relative preference between the two occupations." The entrepreneur perception version instructed: "Please check a response option to indicate the relative similarity of the entrepreneur occupation to these two occupations." Insofar as possible, the secondary and

tertiary preference letter for each occupation was adjacent. Thus, for example, a favored pairing for I-E could be an occupation classified as IAR with one classified ESC. Thirty occupation titles under the relevant occupation classified were retrieved from Dictionary of Holland's Occupational Codes (Gottfredson & Holland, 1996). These thirty occupation titles led to the development of 15 items for this scale, with 5 items for each non-orthogonal axis. See Table 1 for a description of the items used in this measure. The scoring starts from the left most term with a value of -2.5, with each radio button towards the right having an increment of 1 value, resulting the right most term with a value of 2.5. The scoring of R-S, I-E, and C-A axes are calculated by averaging the scores of the scales that relate to each axis. The Cronbach's alphas of the axes of this new measure ranged .39 to .70 for the self form and .33 to .63 for the entrepreneur form in our sample's data.

Entrepreneurial Intent. A 4-item scale was developed by the researchers to measure intention and expectation to pursue entrepreneurship closely resembling previous authors' measures (e.g., Bar Nir, Watson, & Hutchins, 2011; Crant, 1996).The four items are: "I intend to create my own business one day;" "I plan to become an entrepreneur;" "I expect that I will become an entrepreneur one day;" and "I can imagine becoming an entrepreneur one day." Participants were asked to rate each statement using a 6-point scale, *strongly disagree*, *disagree*, *slightly disagree*, *slightly agree, agree*, and *strongly agree*, with each having values of 1 to 6 respectively. Score for entrepreneurial intent is calculated by averaging the scores of the scale. The Cronbach's alpha of this new measure is .96 in our sample's data.

Table 1

Items of the Occupation Pairs Measure Reflecting the RIASEC Position

Realistic (R) – Social (S)
Technician (R)…School Teacher (S)
Optical Engineer (R)…Counselor (S)
Medic (R)…Social Worker (S)
Usher, Lobby Attendant, or Ticket Taker (S)…Security Guard (R)
Speech-Language Pathologist (S)…Wood Patternmaker (R)
Investigative (I) – Enterprising (E)
Biologist (I)…Manager of Branch Store (E)
Waiter/Waitress (E)…Surgeon (I)
Veterinarian (I)…Detective (E)
Political Scientist (I)…Public Relations Specialist (E)
Railroad Conductor or Yardmaster (E)…Fire Investigator (I)
Conventional (C) – Artistic (A)
Inspector (C)…Advertising Copy Writer (A)
Landscape Architect (A)…Computer Security Specialist (C)
Librarian (C)…Choreographer (A)
Switchboard Operator (C)…Music Director (A)
Hairdresser, Hairstylist, or Cosmetologist (I)… Interviewer (C)

Procedure. Participants were invited to complete a 60-minute on-line questionnaire that included both measures of vocational preference and affective identity. Participants were informed the guarantee of anonymity and confidentiality for this survey. After receiving consent from the participants, they completed the survey in their preferred time and location within an approximate 2-week window. When participants finish responding to the last page of the on-line survey, the debrief page appears as the next page to debrief the participants.

RESULTS

Overview

The goal of our research is to examine how perception of affective identity and vocational preference congruence with entrepreneurs predicts entrepreneurial intent. To meet this goal, we separate the analyses into descriptive aspects before examining the relationship of the measures with the dependent variable, entrepreneurial intent. First, we review the descriptive statistics of our measures. Affective identity and vocational preference measures are especially emphasized in this section. The next two parts of our results include the validation of the vocational preference measure designed by the researchers with vocational interest framework using canonical correlation, and how the congruence of affective identity and vocational preference relates to entrepreneurial intent using polynomial regression.

Descriptive Analyses

Descriptive statistics of scales for vocational interests, vocational preference, affective identity, and entrepreneurial intent variables are displayed in Table 2. Pearson correlation of affective identity and vocational preference scores are in Appendix A. The reliabilities (Cronbach's alphas) of most of the measures are above .70, indicating acceptable reliability. At .65 and .60, the reliabilities for the Activity dimension of affective identity for self and entrepreneur are, perhaps, barely acceptable. However, as explained later in connection with Table 3, Activity will be combined with the other two EPA dimensions by two linear combination rules, somewhat alleviating concern about this one dimension's reliability.

The reliability estimates (alphas) for the novel vocational interest measures appear to the author to be underestimates. Unreliability generally attenuates associations between variables, yet in connection with Table 5 it will be shown from the data concerning the self that the three novel vocational interest measures collectively have a massive association with the established vocational preference measures. Thus it is possible that even though there is appreciable error in where a respondent's score places the respondent along each of the three axes individually, collectively the three measures generally do a very good job of locating the person in the proper

general region of the circumplex. In any case, these low estimates may signal a need for further development of this measure in future research, as considered further in the Discussion.

Table 2

Means, Standard Deviations, and Coefficient Alpha Values for Measures of Affective Identity and Vocational Interests Measures (n=291)

Scale	Self Form			Entrepreneur Form		
	M	SD	α	M	SD	α
Vocational Interest Dimensions (Min.=0; Max.=32)						
Realistic	8.82	6.51	.89	–	–	–
Investigative	17.60	7.13	.82	–	–	–
Artistic	16.09	6.86	.83	–	–	–
Social	19.71	6.36	.79	–	–	–
Enterprising	14.74	5.97	.83	–	–	–
Conventional	12.47	6.61	.81	–	–	–
Vocational Preference Axes (Min.=-2.5; Max.=2.5)						
R-S	.68	1.09	.70	-.22	.96	.63
I-E	-.17	.86	.43	.48	.76	.33
C-A	.06	.85	.39	.69	.90	.53
Affective Identity Dimensions (Min.=-4; Max.=4)						
Evaluation	1.73	1.10	.73	1.03	1.20	.73
Potency	0.72	1.34	.74	2.53	1.14	.75
Activity	0.50	1.31	.65	1.93	1.27	.60
Entrepreneurship Intent (Min. =0; Max.=5)	2.28	1.32	.96	–	–	–

Vocational Preference Axes. Because the occupational pairs measure (involving occupational pairs) and affective identity measure are novel in the domain of vocational psychology compared to previous work, we provide the following descriptive details of these measure. To compare self and entrepreneur ratings by overlaying the graphs on top of one another, self and entrepreneur ratings were fixed into frequency bars of the original scales. Fixed cut-off marks were determined based on the measure's maximum and minimum possible score. The measurement range of the measure's scores was divided into 7 equal parts to have 6 values meeting as cut-off values. Frequencies of selected occupations that correspond to RIASEC's complementary axes were transformed to be grouped into one of the 7 equal parts and were plotted to compare overall self and entrepreneur ratings: R-S axis (See Figure 1), I-E axis (See Figure 2), and C-A axis (See Figure 3).

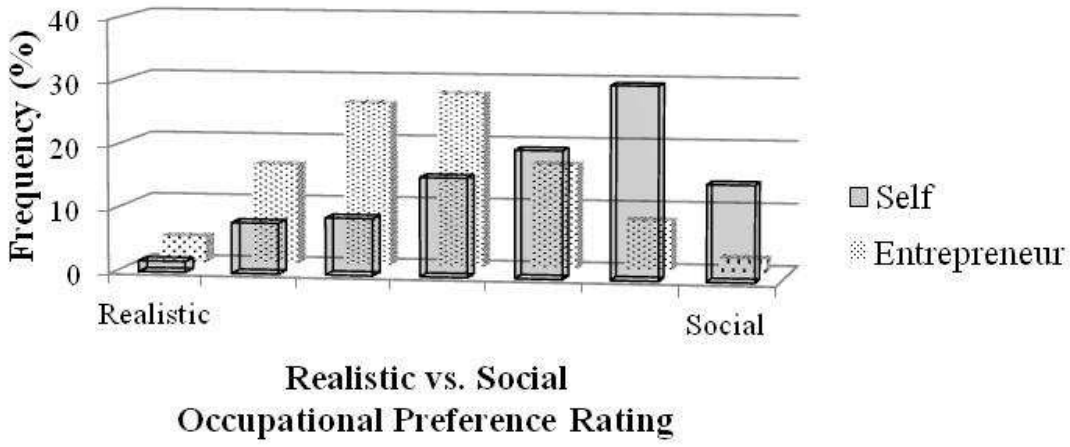

Figure 1. Frequency plot of self and entrepreneur ratings on the Realistic-Social axis. Mean ratings for self and entrepreneur differed, $t(290) = 10.96$, $p < .001$.

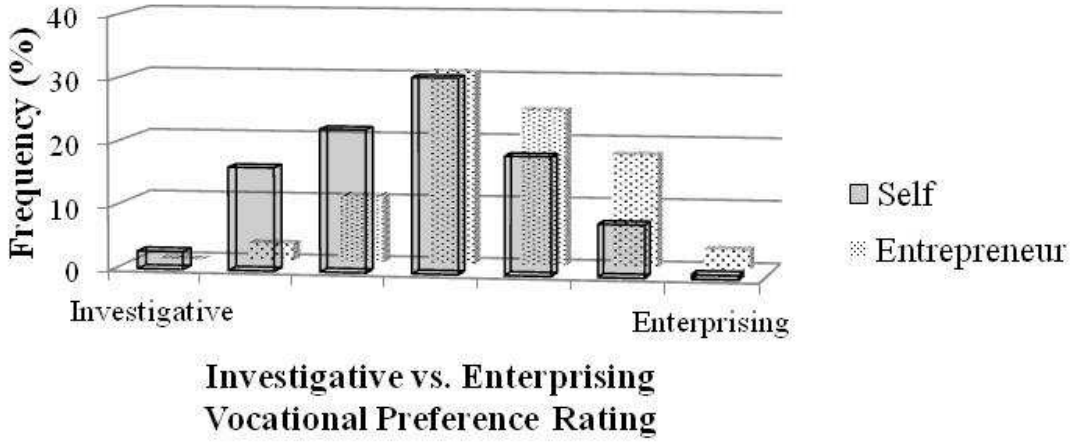

Figure 2. Frequency plot of self and entrepreneur ratings on the Investigative-Enterprising axis. Mean ratings for self and entrepreneur differed, $t(290) = -9.65$, $p < .001$.

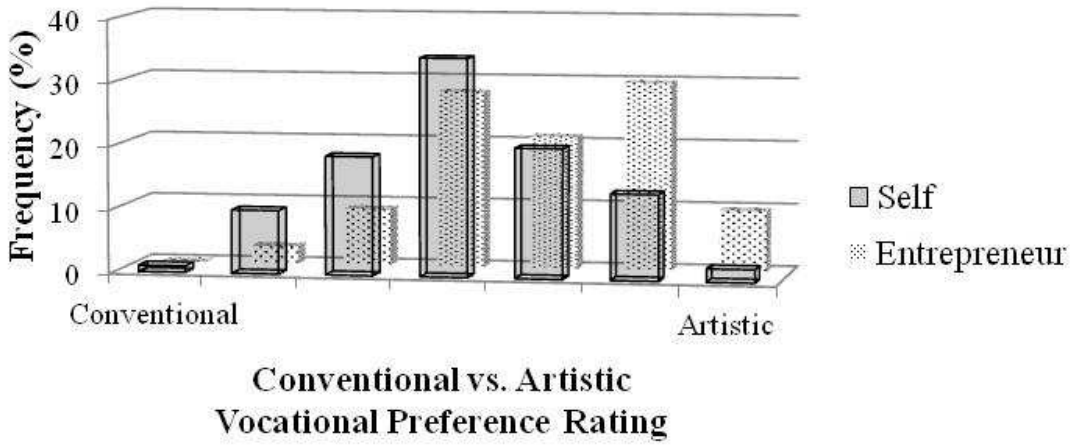

Figure 3. Frequency plot of self and entrepreneur ratings on the Conventional-Artistic axis. Mean ratings for self and entrepreneur differed, $t(290) = -9.23$, $p < .001$.

The frequency plots in Figures 1-3 suggest that the mean ratings of the self and of entrepreneurs were different for each of the axes, and the t-tests reported in the figure captions confirm these apparent differences. Survey respondents rated themselves, relative to entrepreneurs, to have more social-related, investigative-related and conventional-related vocational interests, relative to entrepreneurs who on average were described as more realistic, enterprising, and artistic.

EPA Dimensions. Within the 13 survey items for the affective identity dimensions we detected two themes, based on factor analysis of those items after combining them to for the three EPA dimensions as described in the Methods section. Table 3 shows the loadings obtained when two unrotated principal components were extracted from the self-ratings and the ratings of entrepreneurs. This and the analysis of the 13 items without combining them pointed to favorable-unfavorable perceptions of two kinds. These two kinds of perceptions emerging from the affectively identity model, reflects the two dimensions—Competence and Warmth—of fundamental social perceptions. The parallel of these two models is not surprising, as EPA dimensions is stated to be operating at a 45 degrees rotation of the fundamental social perceptions model (Cuddy, Fiske, & Glick, 2008). In our findings, the first principal component appears to capture lesser-to-greater perceived Competence (e.g., Cuddy, Fiske, & Glick, 2007; Cuddy, Glick, & Beninger, 2011). As indicated by the loadings on the first principal component, more competent selves and entrepreneurs are higher on evaluation, potency and activity. The second principal component appears to capture what may best be termed Warmth, a combination of high evaluation (good, favorable) with low potency (powerless, responsive, and weak) and, to a lesser degree, low activity (stable, quiescent) (e.g., Cuddy, Fiske, & Glick, 2007; Cuddy, Glick, & Beninger, 2011). On the basis of this analysis, corresponding equivalent principal component scores were calculated for the two principal components for, respectively, self and other. To ensure comparability of the scores for self and entrepreneur, the factor score coefficient weights predicting the two principal components corresponding to the self-ratings solution were applied to both self and entrepreneur. The correlations in Table 4 are noteworthy for their demonstration

that perceptions of own and entrepreneurs' competence and warmth are not closely bound, although they are correlated to a statistically significant extent. This differentiation between perceptions of self and other facilitate search for effects of congruence, especially at the individual level. As seen in Table 4, self competence and self warmth scores have no correlation.

Table 3

Loadings of Affective Identity Dimensions on Unrotated Principal Components

	Self Form		Entrepreneur Form	
	Competence	Warmth	Competence	Warmth
Evaluation	.68	.69	.70	.72
Potency	.74	-.55	.82	-.33
Activity	.84	-.08	.83	-.28

Table 4

Correlations among Affective Identity Dimensions based on Unrotated Principal Components

	Self Form		Entrepreneur Form	
	Competence	Warmth	Competence	Warmth
Self Form				
Competence	1.00			
Warmth	.00	1.00		
Entrepreneur Form				
Competence	.29**	.26**	1.00	
Warmth	.12*	.18**	-.02	1.00

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

For affective identity, responses for each of the two resulting scores were plotted in a manner parallel to the plots for RIASEC axes. The plots (Figure 4 and 5) suggest that the distributions of scores for the self are different from those of entrepreneurs. Again as detailed in the figure captions, results from paired-sample t-tests showed that there were significant self-entrepreneur differences for average ratings of Competence and Warmth. Overall, these descriptive analyses indicate that the undergraduate sample on average perceive entrepreneurs differently than themselves in terms of frequency and mean scores of occupational preference/similarity and affective identity. Entrepreneur does not appear to be a self-evidence career choice for this student sample. The self and entrepreneur difference being distinct allows the potential for the regression analysis for affective identity, vocational preference and entrepreneurial intent to show clear individual and collective congruence effects.

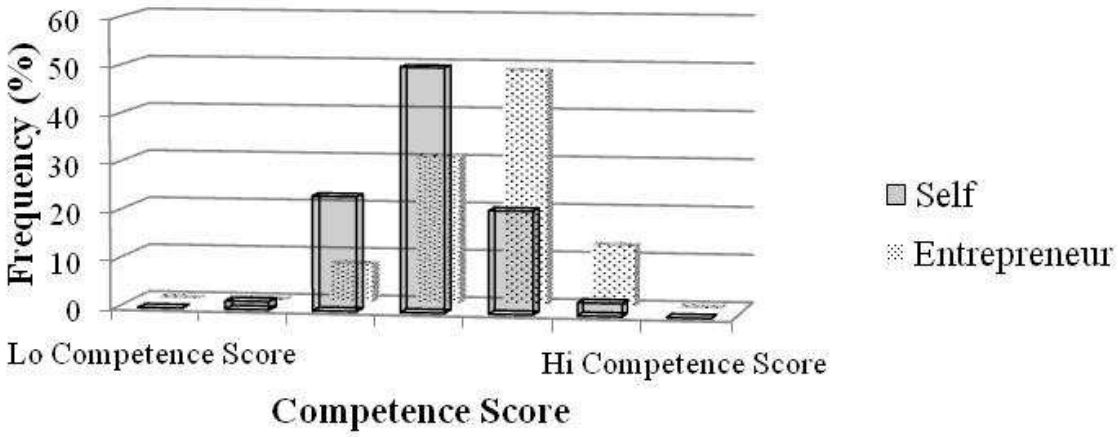

Figure 4. Frequency plot of self and entrepreneur scores for Competence. Mean ratings for self and entrepreneur differed, $t(290) = -4.35$, $p < .001$.

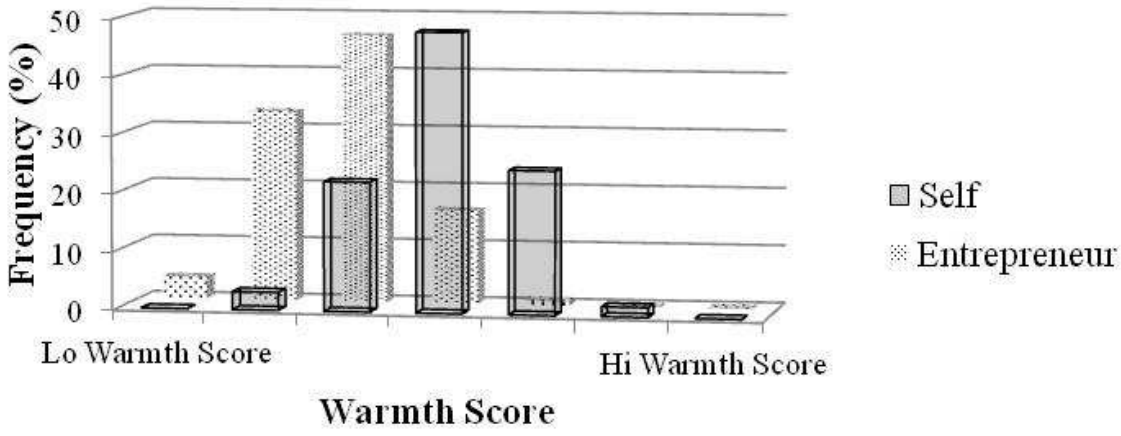

Figure 5. Frequency plot of self and entrepreneur scores for Warmth. Mean ratings for self and entrepreneur differed, $t(290) = -10.41$, $p < .001$.

Validation of Occupation Pair Measure with Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC) Circumplex

To validate whether the computed scores of the three axes do reflect the spatial positions of RIASEC dimensions in its framework, the self-rating scores derived as the R-S axis, I-E axis, and C-A axis from vocational preference scores were used as predictors of the self-ratings from the six RIASEC vocational interest dimensions (Armstrong, Allison, and Rounds, 2008) to evaluate the multivariate shared relationship between the two variable sets (i.e., vocational preference from the occupational pairs measure and vocational interest from the vocational interest inventory). This analysis, called canonical correlation analysis, yielded three functions with squared canonical correlations of (R_c^2) of .561, .425, and .143 for canonical variates 1, 2, and 3 respectively. Overall, the full model across all functions was statistically significant using the Wilk's λ = .216 criterion, F (18,798.10) = 31.840, p < .001.Since Wilk's λ represent the variance unexplained by the model, 1 – .216 yields the full model effect size in an r^2 metric. Thus, for the set of three canonical variates, the r^2 type effect size was .784, which indicates that the full model explained an impressive portion, about 78%, of the variance shared between the variable sets.

The dimension reduction analysis tests the hierarchal arrangement of functions for statistical significance. As mentioned above, the full model (Function 1 to 3) was statistically significant. Functions 2 to 3, and Function 3 itself were also statistically significant, F (10,566.00) = 23.999, p < .001, and F (4,234.00) = 11.840, p < .001 respectively.

Table 5. *Selected Findings from Analysis of Canonical Correlations of Vocational Interest Axes with Vocational Preference Vectors*

	Canonical Variate 1		Canonical Variate 2		Canonical Variate 3		
Variable	r_s	r_s^2 (%)	r_s	r_s^2 (%)	r_s	r_s^2 (%)	h^2 (%)
R-S axis	-.89	79.2	.36	13.0	-.29	8.4	100.6
I-E axis	-.65	42.3	-.75	56.3	-.07	0.5	99.0
C-A axis	-.57	32.5	.29	8.4	.77	59.3	100.2
R_c^2		56.1		42.5		14.3	
Realistic	.42	17.6	-.44	19.4	.36	13.0	50.0
Investigative	.52	27.0	.61	37.2	.39	15.2	79.5
Artistic	-.31	9.6	.23	5.3	.78	60.8	75.7
Social	-.62	38.4	.39	15.2	-.16	2.6	56.2
Enterprising	-.48	23.0	-.32	10.2	.51	26.0	59.3
Conventional	.02	0.0	-.39	15.2	.04	0.2	15.4

r_s = structure coefficient; r_s^2 = squared structure coefficients; h^2 = community coefficient.

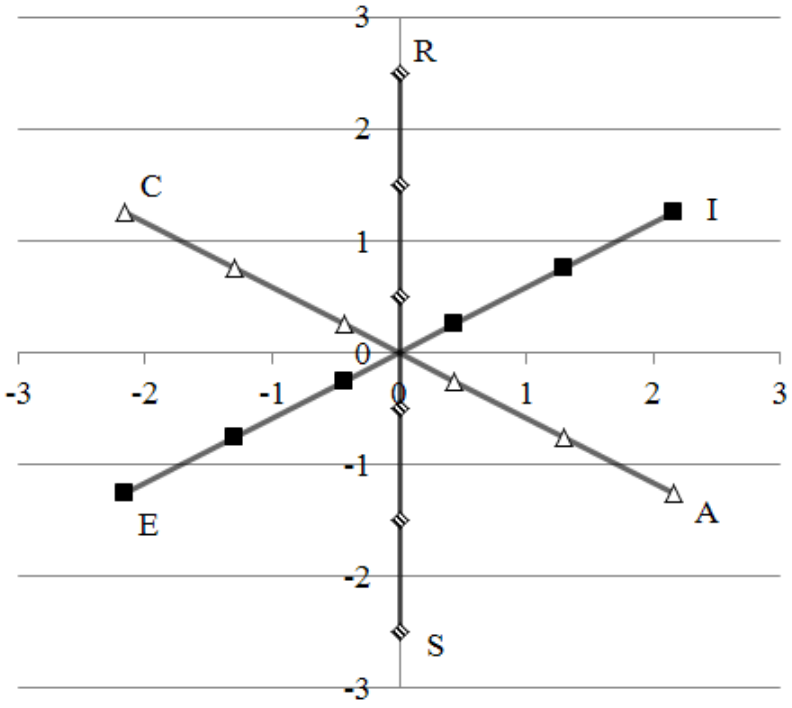

Figure 6. Theoretical Structure of 3-Complementary Axes on Realistic, Investigative, Artistic, Social, Enterprising, and Conventional Circumplex

In order to interpret the canonical variates it is helpful to picture the circumplex RIASEC structure (Figure 6). For the first variate, all of the vocational interest measure structural coefficients for RIASEC variables in the lower or "southern" half of the structure are seen to have negative structural coefficients, and all of the "northerly" ones have positive structural coefficients (though just barely for Conventional). Scores derived for vocational preference, based on the occupational pairs measure, align exactly the same way. For example, given the (negative) structural coefficient of -.89 for the R-S axis, and given that Realistic preferences yielded low scores and Social preferences yielded high on the R-S axis, high, the same people with more "southerly" interests on the RIASEC measure tend to be ones preferring Social over Realistic occupations on the vocational preference measure.

By design, the second variate is residual or orthogonal to the first. Given the dominant structural coefficients of -.75 in the lower part of the table, a further common tendency between the vocational interest and vocational preference measures is seen primarily to involve the I-E axis. The dominant structural coefficient in the top half of the table, .61 for Investigative, verifies good correspondence between the two kinds of measures for this axis—further supported by the expected negative structural coefficient for Enterprising.

Similarly, scores on the vocational preferences measure for the third variate, C-A axis, showed reasonably good correspondence with scores on the RIASEC interest measures, given the large positive structural coefficients for both the C-A axis and the Artistic measure. However, the Conventional measure did not show the expected negative structural coefficients in this instance. Overall, the results were generally supportive of the theoretically expected relationships between vocational interest and vocational preference scores having the same underlying RIASEC structure for self-ratings. Since the vocational interest measure is only based on self, validation for the entrepreneur vocational preference scores cannot be done.

Entrepreneurial Intent as a Function of Perception of Self and Entrepreneur

Addressing the core research question, the next set of analyses examined the two forms of congruence (i.e., individual and collective) of self and entrepreneur ratings with vocational

preference axes and affective identity dimensions predicting entrepreneurial intent. Specifically we tested the difference between ratings of self and entrepreneur on a given dimension predicted intent. Behind selection of such a difference function is a testable hypothesis of self-other congruency that prediction stems not from self or entrepreneur individually having high or low standing on a dimension, but on them having similar standing wherever they are (i.e., low differences should predict high intent).

Polynomial regression was used for these analyses because it separates the difference function from the individual contributions of self and entrepreneur standings on dimensions (Edwards & Parry, 1993). Specifically, we used the following regression equation in each analysis

$$Y = b_0 + b_1 * S + b_2 * E + b_3 * S^2 + b_4 * E^2 + b_5 * S * E$$

In this equation Y denotes entrepreneurial intent, S denotes self-rating, E denotes entrepreneurial ratings, and b_0 to b_5 are the regression coefficients. The last 3 terms ($S^2, E^2, S * E$)in this equation encode the self-entrepreneur difference. This is because it is an algebraic transformation of $(S - E)^2$. It is necessary to work with the squared difference instead of the simple difference because of the presence of $b_1 * S$ and $b_2 * E$ terms in the equation. Although algebraically the expansion of $(S - E)^2$ most simply is $S^2 + E^2 - 2*S*E$, when the difference function is indeed associated with an outcome in multiple regression, the appropriate sign and magnitude of the b_5 term will be obtained through the estimation procedure.

To differentiate linear (the first two terms of the difference function) and polynomial effects (the last three terms of the difference function) within vocational preference axes and affective identity variables, a hierarchical regression model was designed with two hierarchical steps. First, all theoretically associated linear variables, all the vocational preference and affective identity variables in our case, were simultaneous entered in the first step. Each block in this step was pairs of self and entrepreneur ratings or scores for the same variable. Blocks of variables were tested for their unique contributions by block-wise removal from the full equation. The structure of the analysis of the retained variables and its statistical tests are

illustrated in Table 6. In the first hierarchical step, all the blocks of variables were retained because they were statistically significant in predicting the dependent variable, entrepreneurial intent. The statistical tests of the variables are as follows: R-S (F (2,288) = 13.19, $p < .001$), I-E (F (2,288) = 9.55, $p = .001$), C-A (F (2,288) = 5.48, $p = .005$), Competence (F (2,288) = 14.44, $p < .001$), Warmth (F (2,288) = 29.18, $p < .001$). Second, all theoretically associated blocks of polynomial variables were simultaneously entered in the second step. Each block contained the polynomial variables of the same variable. Only the block (hierarchical step 2) that contained Competence variables was statistically significant (F (3,287) = 5.19, $p = .002$). The overall adjusted R^2 of the model is .26, and is statistically significant (F (13,277) = 8.84, $p < .001$).

The following coefficient table of linear variables, Table 7, provides greater insight to how self and entrepreneur ratings combine together in predicting entrepreneurial intent. The upper part of the table shows the linear variables of the vocational preference. R-S and I-E self-ratings are statistically significant ((b = -.32, t (277) = -4.38, $p < .001$) and (b = .31, t (277) = 3.66, $p < .001$) respectively) compared to its entrepreneurial ratings in predicting entrepreneurial intent. Before interpreting these coefficients, it is helpful to remember the descriptive findings for the vocational preference axes (Figure 1, 2, & 3) where we found that entrepreneurs are collectively rated as more realistic, enterprising and artistic compared to self-ratings. Relating to the current analysis, people who deviate toward R or E are likely to be where people collectively saw how entrepreneurs are. Another thing to note is that R-S and I-E ratings of entrepreneur (b = .10 and b = -.11 respectively) have opposite signs than the R-S and I-E self-ratings. It appears that self and entrepreneur effects are complementing and drawing toward each other as a way of demonstrating the pattern of congruence. This pattern is the same for the rest of the variables in exception to C-A. C-A self-ratings and C-A entrepreneur ratings are statistically significant ((b = .18, t (277) = 1.99, $p = .05$) and (b = .21, t (277) = 2.49, $p = .01$) respectively) in predicting entrepreneurial intent. As individuals rate entrepreneurs and self as more artistic, they rate higher entrepreneur intent. However, the congruence pattern does not exist as both entrepreneurs and self ratings are in the same parallel direction. Overall, these results suggest

that self ratings for R-S and I-E show a congruence effect, where entrepreneurial intent will be highest when self-rating and collective ratings of entrepreneurs are most similar. The finding from the C-A ratings may be a contrary effect and not a congruence effect for entrepreneurs. Being artistic may be perceived as socially desirable overall for entrepreneurs and personal development.

Table 6. *Analysis of Variance Results of Retained Predictors for Entrepreneurial Intent*

Hierarchical Step		Sum of Squares	df	Mean Square	*F*	*p-value*	R Square Change
1a	R-S self-ratings, R-S entrepreneur ratings	26.38	2	13.19	9.84	<.001	.052
1b	I-E self-ratings, I-E entrepreneur ratings	19.10	2	9.55	7.12	.001	.038
1c	C-A self-ratings, C-A entrepreneur ratings	14.71	2	7.35	5.48	.005	.029
1d	Competence self score, Competence entrepreneur score	38.73	2	19.36	14.44	<.001	.077
1e	Warmth self score, Warmth entrepreneur score	29.18	2	14.59	10.88	<.001	.058
	Regression	127.49	10	1.34			
	Residual	375.43	280				
	Total	502.92	290				
2	Competence *S*E* score, Competence S^2 score, Competence E^2 score	19.98	3	6.66	5.19	.002	.040
	Regression	147.47	13	11.34	8.84	<.001	
	Residual	355.45	277	1.28			
	Total	502.92	290				

Table 7. *Regression Coefficients of Predictors in Hierarchical Step 1 Predicting Entrepreneurial Intent*

	Unstandardized Coefficients		Standardized Coefficients		
Predictors	B	Std. Error	Beta	*t*	*p*-value
(Constant)	3.14	.17		18.24	<.001
R-S self-ratings	-.32	.07	-.27	-4.38	<.001
R-S entrepreneur ratings	.10	.08	.07	1.25	.213
I-E self-ratings	.31	.09	.20	3.66	<.001
I-E entrepreneur ratings	-.11	.10	.12	-1.14	.257
C-A self-ratings	.18	.09	.12	1.99	.048
C-A entrepreneur ratings	.21	.08	.14	2.47	.014
Competence self-ratings	.40	.07	.30	5.35	<.001
Competence entrepreneur ratings	-.16	.08	-.13	-2.07	.039
Warmth self-ratings	-.13	.07	-.10	-1.85	.065
Warmth entrepreneur ratings	.32	.08	.23	4.21	<.001

The next blocks of the table contain the affective identity variables. Competence is the first of these variables. The self scores and entrepreneur scores of Competence are statistically significant ((b = .40, t (277) = 5.35, $p < .001$) and (b = -.16, t (277) = -2.07, $p = .039$) respectively). Similar to R-S and I-E patterns, we also see a congruence pattern because the entrepreneur scores and self-scores complement each other as they are drawing towards each other. Collectively, entrepreneurs are seen as higher in competence than the self (as shown in Figure 4). People who deviate toward perception of them as high in competence are likely to be where people collectively saw how entrepreneurs are.

The last part of the table for Warmth of the affective identity dimensions contains only the linear variables. The linear variable that is statistically significant in predicting entrepreneurial intent is entrepreneur scores of Warmth (b = .32, t (277) = 4.21, $p < .001$). While the scores of self (b = -.13) may not predict entrepreneurial intent, those who generally perceive entrepreneurs to be higher in Warmth tend to have higher entrepreneurial intent. Still, there is a congruence pattern of self and entrepreneur scores as the regression weights are in opposite directions. Recalling the descriptive analyses again, entrepreneurs are collectively seen as less warm than self according to Figure 5. The positive regression weight of entrepreneur scores (entrepreneurs are seen as more warm) and the negative regression weight of the self scores (self seen as less warm) shows the congruence pattern because that minimizes the difference between self and collective rated differences.

As mentioned before when describing the overall fit of the blocks in the model, one block of polynomial variables from the Competence dimension was found to fit the model. One block of polynomial variables from the Competence dimension was found to fit the model. The coefficients of these polynomial variables are difficult to comprehend individually. The interactions of the quadratic variables are best described by the following plot (Figure 7).

As illustrated in Figure 7, the perspective plot of the unstandardized coefficients showed a predicted congruence shape—saddle shape where the positive association with entrepreneurial intent is highest as x=y (steep positive slope starting from left to right when looking in the

direction of the x axis) but least positive association with entrepreneurial intent as x and y have opposite signs. In our figure, the x axis is the scores of self, the y axis is the scores of entrepreneurs, and the z axis is ratings of entrepreneurial intent. This shape indicates that the higher the congruence or the least difference in scores between self and entrepreneur, the higher the rating of intent. In other words, the graph indicates that the more congruent the scores of self and entrepreneurs in Competence, as people rate both higher in Competence, has strongest association with entrepreneurial intent. The polynomial variables, unlike the linear variables, show the effect of how individual perceptions rather than collective perceptions of entrepreneurs influences entrepreneurial intent. The quadratic variable show that even that if self-scores of Competence is high, which is consistent with the collective rating of entrepreneur, the entrepreneurial intent will be low if the individual entrepreneur scores of Competence is low (See the bottom left corner of the plot).

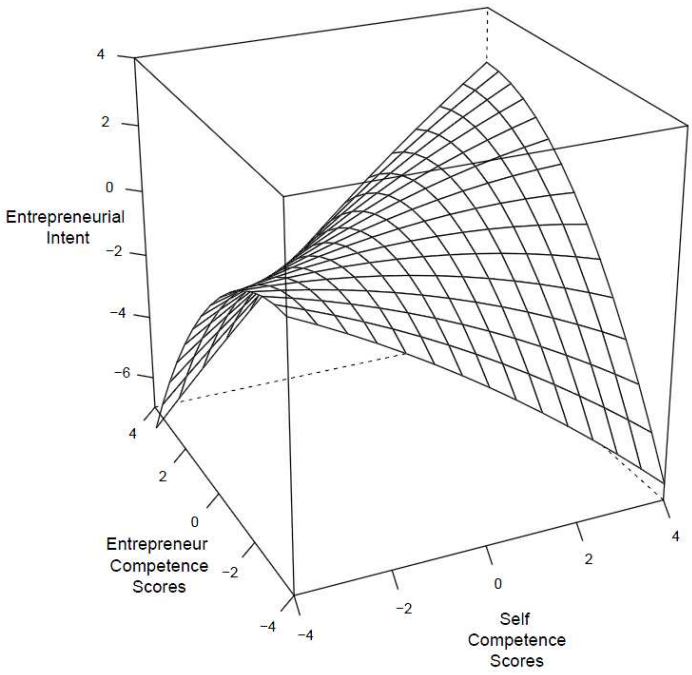

Figure 7. Perspective plot of self and entrepreneur scores of Competence on entrepreneurial intent.

Through these analyses, we see individual and collective effects of different vocational preference and affective identity components in predicting entrepreneurial intent. Collective effects are effects where entrepreneurial intent is highest when self and entrepreneur ratings are complementary in shifting away from the collective norms of self and entrepreneur (congruence effect) or when self and entrepreneur is rated more socially desirable in general (contrary effect—self and entrepreneurs are more artistic specifically). Collective effects are seen in the linear variables in all of the vocational preference and affective identity dimensions. Individual effects are effects where entrepreneurial intent is highest depending on how one rates self and entrepreneur, where the most similar ratings of self and entrepreneur predict entrepreneur intent. Only this relationship appeared with the Competence affective identity component. Overall, this model containing the combination linear and polynomial variables from the difference function of both vocational preference and affective identity predicts 26% of the variance in entrepreneurial intent, mostly weighted towards how self ratings are viewed in comparison in overall group/collective ratings of entrepreneurs.

DISCUSSION

In this present study, we investigated four objectives: a) investigate how affective identity fares in career perception, b) examine how individual and collective congruence forms appear in their operation in this set of empirical data, c) create a vocational preference measure that allows for assessing perceived congruence of self career preference and perception of similarity of a focal career, and d) contribute to promoting entrepreneurship as a career direction by understanding the self variables and perception of entrepreneurial intent.

In this study, we used affective identity to represent identity as it would be most distinct to vocational preferences. Vocational preferences generally capture preference but may overlap with identity. Overall, with affective identity factors, we found support that identity has a role in career choice apart from preference through two types of congruence effects. The first of the congruence effects is the contemporary approach to congruence that has less methodological errors (Edwards & Parry, 1993). This congruence effect is the individual effect accounted for through the polynomial variables in the Competence dimension. This finding suggests that rated entrepreneurial intent based on perception of self matching with entrepreneurs is a dynamic relationship. Global congruence effect, using linear variables, will suggest that as one deviates to the global perception of an entrepreneur (i.e., higher in competence), entrepreneurial intent will be highest. However, the individual congruence effect is not as straightforward. In the case of individual congruence effect, deviating towards the global perception of entrepreneurs does not predict entrepreneurial intent. In fact, entrepreneurial intent will be lowest even if one self is thought to be more competent if the individual perceive entrepreneurs as low in competence. Most importantly, we found the effect from the contemporary form of congruence in the affective identity factors and not the vocational preference axes. Achieving two of this project's objectives, we found that not only does affective identity have an important relationship with career choices, but also its effect can be supported by the least biased form of congruence.

The second of the congruence effects are the collective effects using linear variables. We find the linear congruence forms in the two factors of affective identity, competence and warmth,

and also the R-S and I-E axes from the vocational preference variables. The collective congruence form suggests that entrepreneurial intent will increase when one sees self or entrepreneur more similarly to how the global norms see entrepreneurs. What is most interesting about these analyses is that the congruence patterns were found between every self and entrepreneur pair for the same variable. The self and entrepreneur have regression weights that are in opposite directions, signifying that the drawing together of these two concepts reflects the congruence pattern. Overall, the congruence phenomena of collective congruence forms are found in affective identity factors and also some of the vocational preference axes. This finding answers our second objective in understanding the different forms of congruence.

While we have found impressive evidence for the use of identity and the contemporary methods of congruence, a few questions remain. First, we wonder why the individual congruence effect only appears with the Competence factor but not any other variables. The answer may lie in the fact that the polynomial variables are so precisely orthogonal in relation to the collective effects. Collective effects, on the other hand, are plausibly very common in many research domains. When one uses only functions that involve collective effects, individual effects may have been suppressed. The conceptualization of a domain in a way to only hold expectation from collective congruence forms may miss the effects of individual congruence forms.

Second, why was the C-A axis from the vocational preference variables not showing a congruence effect? The regression weights from the C-A self and entrepreneur scores indicate that higher ratings of both self and entrepreneur scores predicts higher entrepreneurial intent. This is different from how the rest of the pairs, which has opposite regression weights, behave. The interpretation of this collective congruence form is that the self and entrepreneur needs to be globally seen as more artistic to have higher entrepreneurial intent. We translate this phenomenon as a contrary effect and not a congruence effect.

Even with some counter-intuitive findings we stated above, the affective identity and vocational preference variables remarkably explain 26% of the variance in entrepreneurial intent. However, the axes calculated from the vocational preference measures tap a combination of

preference and identity. If so, the affective identity measures only tap aspects of identity that are totally separate from those measures using our vocational preference measure. Therefore, the affective identity based findings easily could underestimate how much career exploration can depend on identity, broadly conceived.

Another of our objectives was to create a vocational preference measure that allows for assessing perceived congruence of self career preference and perception of similarity of a focal career. Our canonical correlation findings support that this format of the measure replicates the vocational interest – RIASEC – framework that Holland (1973) proposed. Specifically, this novel way of locating people on the complementary axes of RIASEC (R-S, I-E, C-A) is extremely consonant with the self-report of work activity approach. We hope that this alternative method will commence measurement of self and other focal occupations. The high interpretability of the results that we got for congruence effects suggest that we were successful with our objective, which is our attempt of creating this format.

As the first study that used our developed measurement, we realize that there are a lot of venues for future development. Currently, the occupations we used in this measure vary in different job zones. According to the O*NET database (National Center for O*NET Development, 2012), occupations can be organized into different job zones based on the necessary education, experience and training needed to perform the occupation. There are five levels in the job zones, with one being little or no preparation needed and five being extensive preparation needed. The implication of the current measure involving pairs of jobs in different job zones may induce desirability bias for participants, especially those who are receiving higher-level educations, to prefer occupations that are in job zone five. Our project's focus is to select occupations based on the geometric position of the job by insisting that a Conventional (C) job had secondary Realistic (R) and Enterprising (E) codes (the two adjacent categories according to the vocational interest RIASEC framework). However, job zones can be further examined to see adequate pairing of occupations based on job zones affect the validity of the measure.

Our last objective was to use our research to promote entrepreneurship. One impetus for this study is to develop measures for young adults and other career seekers can use to specifically learn about their psychological similarities to entrepreneurs. Just as vocational interest feedback is used to help individuals to direct their career search and directions that are most likely suitable for themselves, our study open ups to the possibilities that EPA measurement can contribute as well. The usefulness of affective identity, apart being an identity factor distinct from self-preferences, is that it also has a database of occupations and its respective EPA ratings. This may allow possibilities for using affective identity as a plausible occupation exploration feedback. Seemingly abstract EPA dimensions appear to have a clear connection with much more fundamental social perception factors—Competence and Warmth—which raises the plausibility that affective identity can be really capturing something that is consequential.

In conclusion, our study lends support of affective identity in entrepreneurial career decision making. Affective identity functions well with the contemporary application of congruence. More importantly, incorporating affective identity with vocational preference as a richer definition of one's self-concept helps individuals seek a more fitting match with potential careers for self-fulfillment.

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Appendix A

Pearson Correlations among Affective Identity Scores and Vocational Preference Axes Variables

Variable	1	2	3	4	5	6	7	8	9	10
Self Form										
1. Competence	—									
2. Warmth	.00	—								
3. R-S Axis	.18**	.14*	—							
4. I-E Axis	.07	.05	.33**	—						
5. C-A Axis	.22**	.05	.39**	.09	—					
Entrepreneur Form										
6. Competence	.29**	.26**	.12*	.13*	.08	—				
7. Warmth	.12*	-.02	-.06	.11	-.15*	.18**	—			
8. R-S Axis	-.01	.01	.07	-.03	.00	.01	.02	—		
9. I-E Axis	-.05	.00	.05	.02	.00	.00	-.14*	.29**	—	
10. C-A Axis	.05	.31**	.14*	.03	.12*	.31**	.05	.14*	.08	—

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