The RICH Entrepreneur: Using Conservation of Resources Theory in Contexts of Uncertainty

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This research was designed to extend the scope and conversation of conservation of resource theory (COR) to contexts of uncertainty, including entrepreneurship. In doing so, the resource-induced coping heuristic (RICH) construct is introduced, developed, and validated. Results from two investigations, involving three samples and a total of 813 participants, indicated strong reliability, and internal validity for the theoretically justified, three-factor measure. Also, results of validity tests show the RICH as a robust predictor of factors pertaining to entrepreneurial success, including financial performance and perceived entrepreneurial success. Practical and academic implications, strengths and limitations, and directions for future research are discussed.

$\mathbf{A}$t many levels, organization researchers have recognized the importance of investigating actual resources (Barney, 1991), potential resources (Elbe, 2011), and the effects of both on individuals (Judge, Klinger, & Simon, 2010) and organizations (Crook, Todd, Combs, Woehr, & Ketchen, 2011; Ndofor, Sirmon, & He, 2011). At the individual level, scholars recognize the importance of traits (i.e., static characteristic resources; Baum & Locke, 2004) and states (i.e., dynamic, emotional resources; Roberts & Robins, 2000). Likewise, macro levels of analysis provide ample examples of attention to resources, such as competitive advantage (i.e., resources to maintain organizational viability; Barney, 2002; Barney, Ketchen, & Wright, 2011) and effectuation (i.e., cataloging known resources for entrepreneurial benefit; Read, Song, & Smit, 2009; Sarasvathy, 2001).

However, there is a distinct gap in the current understanding of resources, and how resources are processed by individuals to create new economic ventures. Fortunately, scholars have begun to decode this gap in understanding of resources through investigation of the actions, behaviors, and outcomes of individuals engaged in such processes. In turn, the entrepreneur has been identified as a catalyst to organization creation (Schumpeter, 1934; Shane, 2003), and entrepreneurship characterized as a process of recognizing, developing, and managing resources (Bhave, 1994; Moroz & Hindle, 2011). More recently, the importance of cognition, and cognitive heuristics, in the stages of

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developing and managing new venture resources has been acknowledged as important areas of study (Busenitz & Arthurs, 2007; Corbett, 2005). However, further research regarding which cognitive resources and mechanisms are important for understanding entrepreneurship, and how such mechanisms affect the process of entrepreneurship, is needed (Baron, 2007; Moroz & Hindle).

The concept presented herein is built from the foundation of resource salience in organizational science (Barney, 1991; Hobfoll & Shirom, 2001; Shaver & Scott, 1991), and the notion that certain cognitive positions taken by individuals in regard to resources are inherently resources in their own right (Dewald & Bowen, 2010; Hobfoll, 2011). These cognitive positions and heuristics involving resources must be further identified and addressed in an effort to distinguish their resulting actions and impacts on entrepreneurship. The importance of resource-induced coping, as described and evidenced in the following sections, stems from the psychological and sociological underpinnings of conservation of resources (COR) theory.

The COR theory provides a distinct and practical explanation for human behaviors commonly associated with entrepreneurship. Recently, Stevan Hobfoll (2009, p. 95) distinctly and succinctly articulated the foundations of the COR theory, suggesting "that people are motivated to create, protect, foster, and nurture their resources. People build social, personal, material, and energy resources to sustain well-being, and to protect against future resource loss. This follows because people are loss-sensitive and gain-insensitive on biological (Cacioppo & Gardner, 1999), cognitive (Tversky & Kahneman, 1992) and social (Hobfoll, Freedy, Lane, & Geller, 1990) levels . . . Hence, the building and preserving of resources has a primary motivation in prevention of loss, because future, critical loss is inevitable."

Not many people realize the critical nature of resource loss like entrepreneurs. For these individuals, the consequences of losing resources can range from no effect to bankruptcy or disseverment. It has been shown that situations with potential for resource loss can even affect entrepreneur persistence (Holland & Shepherd, 2011). Fortunately, researchers suggest that some entrepreneurs cope with resource loss, or potential resource loss (i.e., risk), better than others (Baron, Hmieleski, & Henry, 2012; Uy, Foo, & Song, 2012). Also, it is known that some entrepreneurs do succeed despite the effects of resource loss. What we currently lack is a full explanation for why.

It is believed that entrepreneurs experience strain from loss of resources much in the same way nonentrepreneurs might. However, entrepreneurs often take on uncertainty throughout their entire process of venture creation, putting them in many situations prone to resource loss (e.g., searching for markets or opportunities, risking equity, raising capital, managing uncharted markets). Contexts of uncertainty can also create unique additional draw on resources, which an entrepreneur must endure, including accounting for the multiple possible outcomes of their uncertain situations. COR theory explains how people endure, or cope with, resource loss. The resource-induced coping heuristic (RICH) embodies the COR theory behaviors (i.e., the behaviors of acquiring, protecting, and developing resources outlined in COR theory) for psychometric investigations.

This paper contributes to an explanation regarding how entrepreneurs cope with potential and actual resource loss in three ways. First, the COR theory is introduced as a relevant theory for explaining behavior pertaining to resource loss in the context of entrepreneurship. Second, the RICH and the RICH inventory are introduced as tools useful for understanding and evaluating individual tendencies toward behaviors associated with the COR theory propositions and entrepreneurial actions. Third, the RICH is shown to have predictive properties regarding the assessment of entrepreneurship outcomes.

Conservation of Resource Theory and Entrepreneurship

The COR theory describes a coping mechanism for attenuating some of the negative effects caused by strain inherent in resource loss (Hobfoll, 1989). Research shows that rational beings strive to behave in a way that reduces negative strain (Monsen & Boss, 2009), particularly strain due to potential, or actual, resource loss (Hobfoll, 2011). For entrepreneurs, sources of strain include the many uncertainties surrounding the venture-creation process; opportunity costs; and the potential loss of time, energy, and other resources. From an inter-role perspective, resource loss can occur in the process of managing multiple roles at once. As more demands are experienced in one domain, fewer resources are available to fulfill demands in another domain. For many entrepreneurs, responsibility for multiple role demands is the norm rather than the exception. It is thought that if the resulting resource loss (potential or actual) is not kept in check, negative outcomes are inevitable (Wright & Cropanzano, 1998).

Grandey and Cropanzano (1999) proposed that those who have excess resources can use their resource reserves during "problematic" situations to combat the negative effects inherent in resource loss. Studies have supported the coping effects of these actions in many business situations commonly experienced by entrepreneurs, including organization management (Zellars, Hochwarter, Lanivich, Perrewé, & Ferris, 2011), burnout (Halbesleben, 2006), employee turnover (Wheeler, Halbesleben, & Harris, 2011), and firm sustainability (Miller & Friesen, 1984). As implied by Penrose (1959), many studies have shown that excess resources can create advantageous situations for business founders (Bradley, Wiklund, & Shepherd, 2011; George, 2005; Mousa & Reed, 2013).

While some effects of acquiring ample resources to combat potential and/or actual resource loss have been noted, the underlying reasoning behind why these effects occur is often muted or ignored. Hence, a need for theory that explains such phenomena is evident. The COR theory explains that individuals subjected to resource loss (potential or actual) are prompted to acquire, protect, and develop resources (Hobfoll, 2001). During this process, resource stockpiles can be created, some of the effects of which are noted above for attenuating the negative effects of resource loss. These effects can be further delineated into coping with potential resource loss and coping with actual resource loss. In regard to potential resource loss, the process of acquiring, protecting, and developing resources described by the COR theory provides a security blanket effect, wherein having resources that can potentially replace resources lost causes a sense of well-being (Hobfoll, 2001). More obvious is the effect of behaviors described by the COR theory on actual resource loss, wherein the strain of resource loss is alleviated or attenuated when the resource lost is replaced by resources that have been acquired, protected, and developed (Hobfoll, 2011).

To put it another way, the behavior of acquiring, protecting, and developing resources is a coping mechanism for potential and actual resource loss. Such a mechanism can help explain why some individuals are able to cope with resource uncertainty, while others fail. Unfortunately, the COR theory behaviors are difficult to detect when considering contexts of ambiguous resource needs, such as entrepreneurship. This is partly due to the dynamic and uncertain environment that the process of entrepreneurship can create. More specifically, it is difficult to assess which resources are relevant to the entrepreneurship process because the resources needed to proceed are not always fully realized.

Resources, according to the COR theory, are the objects, energies, characteristics, and conditions that are *perceived* valuable by one or more individuals (Hobfoll & Shirom, 2001). It is recognized that there is a long tradition of discrepancy regarding value, and this paper will not provide an argument for what constitutes value. Rather, for the purposes

of addressing the COR theory behavior effects on entrepreneurship, value determination is left to the person interacting with the objects, energies, characteristics, and conditions in their environment. In this way, attention can be turned from the effects of which particular resources are acquired, protected, and developed, to how these COR theory behaviors come to affect entrepreneurship.

As a means of coping with potential (or actual) resource loss, the COR theory details the consequences of attaining resources, building upon resources, and protecting those resources from loss (Hobfoll, 2001). However, people must first have the thought (heuristically or consciously) to perform such actions (Daft & Weick, 1984; Kaplan, 2011). Therefore, the cognitive process of enacting a strategy to acquire, protect, and develop resources in order to cope with resource loss must take place before these factors become actions. Explaining the COR theory behavior as a preemptive cognition, rather than actual physical behavior, will allow researchers to operationalize the theory without struggling to encompass all energies, personal characteristics, conditions, or objects deemed valuable to a context's constituents.

The entrepreneur's situation is continuously evolving, so there is little time for consideration of each potential resource. However, experience with the COR theory behaviors can lead to the development of a cognitive resource, or a heuristic tendency toward the COR theory behaviors. In other words, successful coping with resource loss effects by way of acquiring, protecting, and developing resources can lead to the development of a mindset geared toward the continued operation of the same coping mechanism. This mechanism is called the resource-induced coping heuristic (RICH).

The RICH

Nomologically, the RICH is a mental precursor that brings about the acquisition, protection, and development of resources. Behavioral learning theory (Reynolds, 1975; Skinner, 1989) has shown us that experience impacts individuals insomuch that present and past environmental influences have an impact on behavior (Schwartz, 1978). From the juxtaposition of experiences and environment, individuals maintain and develop information (Hobfoll, 2011). In situations wherein previous conditions are similar to current conditions, the behavior that best fits the previous condition will likely be generalized to the current condition (Tripsas & Gavetti, 2000). This generalization, or heuristic response, to a variety of similar conditions creates a reduction in resource expenditure upon encountering the similar condition since the response to such a condition does not require new learning (Nye, 1979; Rerup, 2005). The resulting cognitive pathway provides a mental shortcut that dictates response to familiar stimuli.

The RICH is one such cognitive pathway. Conceptually, the RICH is the function of performing COR theory behaviors (i.e., acquiring, protecting, and developing resources for coping with potential or actual resource loss) without full consideration of each instance where resources are available for acquisition, protection, or development. Although the concept of the COR theory behaviors has been applied to the realm of organizational concerns as a theoretical framework of conserving resources (Gavetti, Levinthal, & Rivkin, 2005; Halbesleben, 2006; Hobfoll, 1989; Wright & Cropanzano, 1998), it has not been tested as a heuristic mechanism by which individuals cope with the ambiguity, and the unknown, inherent in contexts of uncertainty.

Busenitz and Barney (1997) recognized the importance of heuristic mechanisms as differentiating factors between entrepreneurs and managers. Heuristics also have been posited to affect the way entrepreneurs assimilate new environmental stimuli (Holcomb,

Ireland, Holmes, & Hitt, 2009) and make decisions (Grégoire, Corbett, & McMullen, 2011). Relatedly, heuristics utilized by business founders have been shown to shape the process of entrepreneurship and its outcomes by affecting start-up decisions (Simon, Houghton, & Aquino, 2000) and the evaluation of opportunities (Farsi, Imanipour, & Shirana Mahlouji, 2012). However, although resource loss is inherent in all stages of venture creation, little research has focused on the implications of using cognitive heuristics for coping with the loss of resources throughout the process of entrepreneurship.

The RICH contributes to this stream of knowledge by representing a cognitive mechanism for coping with resource loss, the effects of which can affect entrepreneurship outcomes at all stages and levels of analysis. The following paragraphs outline the three prominent factors of COR theory behavior that the RICH comprises. The terminology used is carried over from previous descriptions of the COR theory behaviors (Hobfoll, 1989, 2001). The detailed descriptions below add depth to the fundamental COR theory behavior jargon.

Acquiring Resources

Acquiring resources refers to the act of making objects, energies, conditions, and personal characteristics available for use. However, the concept is not confined to the possession of resources. In essence, resources need not be physically held by the beholder; the concept extends from acknowledging the whereabouts of something, to sole control of a tangible asset, and encompasses all operationalizations in between. It is important to note that there are seemingly infinite possibilities for resources that may be acquired, especially in contexts of uncertainty and resource need ambiguity.

Protecting Resources

Once a potential resource is acquired, individuals must protect it from actual, or potential, loss. *Protecting resources is the act of expending resources to maintain an acquired resource*, or the process of giving up one thing (e.g., time, money, energy) to ensure the continuation of another. It is important to note that not all potential resources will be protected, and that the cost of protecting resources may vary as widely as resources themselves.

Developing Resources

As is the case with protecting resources, development of a resource can only occur after a potential resource is acquired. The concept of *developing resources is defined here as expending effort to cultivate acquired resources into higher potential or more useful resources*. However, not all acquired resources have predetermined ends, nor will all resources be developed.

The RICH Inventory

Ultimately, many past conceptualizations of the COR theory's central arguments have focused on the importance of the behaviors of acquiring, protecting, and developing *specific* resources thought to contribute to work outcomes (Halbesleben, 2006; Weigl et al., 2010). Concentrating on specific resources limits research involving the COR

theory behaviors to knowledge of the resource stockpile in question, and creates the major obstacle of cataloging these known resources. The realization of the full potential of the COR theory as an explanation for differences in behaviors regarding resource loss escapes many due to lack of information regarding resource needs. This is especially true of contexts concerning resource uncertainty.

Focusing on the cognitive premises that lead to the COR theory behaviors can expand the application of the COR theory to contexts wherein itemizing all relevant resources is difficult or impossible (e.g., entrepreneurship). Yet, little work has been done to operationalize the postulations of the COR theory as a heuristic mechanism for coping with situations concerning resource loss. To accomplish this, the RICH inventory is introduced. *The RICH inventory captures the essence of the three prominent factors of the COR theory behaviors (i.e., acquiring, protecting, and developing resources) as cognitive heuristics.* Principally, the RICH inventory is a psychometric tool by which individuals' tendencies to acquire, protect, and develop resources in their environment can be evaluated without specific knowledge of the value of every resource perceived by the individual.

Plan of the Research

Two studies were conducted to investigate the viability of the proposed concepts and to test the RICH as a predictor of entrepreneurship outcomes. Structural equation modeling (SEM) techniques were used to estimate the reliability and validity of the items and scale across both studies. In Study 1, two samples concurrently address the factor matrices and the goodness of fit of the proposed RICH inventory models to the data. Study 2 confirms the item reliability and validity of the 16-item RICH inventory, and provides statistical evidence of predictive and discriminant validity of the measure in a context of entrepreneurship.

Study 1: Methods

Participants and Procedures

Sample 1: Business Students. Sample 1 comprised undergraduate students enrolled in the college of business at a large southeastern university. Students were asked to participate outside of their normal curriculum duties, and were awarded extra credit for their time. The survey was administered via Surveymonkey.com web-based services. The initial pool of potential participants consisted of 712 individuals enrolled in the business curriculum. Participation in this research was completely voluntary. In total, 344 people responded, of which 12 were eliminated due to incomplete or unverifiable information, resulting in a sample size of 332 (46.7% response rate).

The remaining sample of 332 participants comprised 182 (55.7%) males, and had a mean age of 22.63 years (standard deviation [SD] = 3.64). Many ethnicities were represented, including African American (12.7%), Asian, (6.2%), Native American (1%), Caucasian (64.5%), and Hispanic (13.3%). Participants reported having an average GPA of 3.24 (SD = .46). Of those reporting their class rank, 127 were juniors, 136 were seniors, and 19 were graduate students, representing 53 different majors.

Sample 2: Employed Individuals. Sample 2 consisted of employed alumni of a large southeastern university. A list of recent graduates from the university's college of

business, who had reported some type of gainful employ, was used to identify participants for this sample. The initial contact letter was distributed to 1,186 people via e-mail. Potential participants were asked to follow a web link embedded at the end of the invitation letter. Reminder e-mails were sent every 2 weeks for a period of 6 weeks (Armstrong & Overton, 1977). Of the 262 people who responded, three were eliminated due to incomplete or unverifiable information, resulting in a sample of 259 individuals, a 22% response rate.

The remaining sample of 259 participants comprised 146 (56.4%) females, and had a mean age of 26.07 years (SD = 5.61). Many ethnicities were represented, including African American (10.3%), Asian, (4.9%), Native American (2.0%), Caucasian (62.2%), and Hispanic (14.1%). Participants reported having an average of 2 years of experience in their current position (SD = 2.26). A wide range of position titles were reported, including manager, teacher, attorney, banker, analyst, librarian, chief executive officer (CEO), administrator, transcriptionist, and physician.

Instrument Development

The initial inventory consisted of 48 items generated by examining relevant research, theory, and existing psychometrics of heuristic measures (Haynie & Shepherd, 2009). The measure was constructed on a 7-point Likert type scale, anchored on the left by the statement *strongly disagree*, and on the right by the statement *strongly agree*. Participants were asked to indicate whether they disagreed or agreed with how well the item statements described them.

To develop a scale that provided the best representation of the RICH construct, in the most parsimonious way, items from the original pool of 48 were eliminated through a three-step process. First, face and content validity evaluations of the items were conducted by practicing academics with over 80 years of experience (Tourangeau, Rips, & Rasinski, 2000). This resulted in the elimination of seven items from the pool. Next, item reduction analysis was conducted using the PASW 18 (formally SPSS 18; IBM, Armonk, NY) statistical program. Items with factor loadings under .40 were eliminated (Nunnally, 1978), resulting in the removal of an additional 16 items. Lastly, items were examined for problematic, high cross loadings by conducting a preliminary factor analysis. The pattern of factor loadings showed that nine items loaded on two or more factors at a level greater than .40, with the highest loading not corresponding to the intended factor. These nine items were eliminated, resulting in a set of 16 items that were modeled for further analysis, as described in the following sections. The 16 items that constitute the RICH are listed in the Appendix.

To assess the structure of the data matrix and determine the suitability for factor analysis, the Bartlett's test of sphericity (BTS) and the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy were performed on the data. Low p values (e.g., $p < .05$) signify that an identity matrix does not exist, and that the data are suitable for factor analysis. The KMO statistic quantifies the intercorrelations among inventory items, wherein values approaching 1.0 indicate high data appropriateness for factor analysis (Hair, Anderson, Tatham, & Black, 1998). For Sample 1, the BTS was significant ($p < .000$), and the KMO approached 1.0 (.888). In Sample 2, the BTS was also significant ($p < .000$), and the KMO approached 1.0 (.880). Both samples showed strong suitability for factor analysis according to both statistics.

Historically, confirmatory factor analysis (CFA) parameters are estimated utilizing the maximum likelihood factor extraction technique, which allows for assessment of data fit to the model and testing of the significance of loadings and correlations between factors (Haynie & Shepherd, 2009). Although maximum likelihood estimates require the

assumption of multivariate normality (Wegener & Fabrigar, 2000), they are asymp-tomatically unbiased and more efficient than many other estimates. To assess whether the multivariate normality assumption was violated in either sample of Study 1, an independent two-sample *t*-test was conducted for each sample to examine mean differ-ences between factors. Bernstein (1988) suggested that insignificant mean differences between factors signify that the multivariate normality assumption has not been violated. Sample 1 and Sample 2 both showed no signs of statistically significant differences between factor means ($p > .19$). Thus, the maximum likelihood extraction method was adopted for this study to determine the initial factor solution.

The RICH is defined above as the aggregation of three COR factors, suggesting correlation between the scale dimensions. Therefore, *promax* rotation was used to assess the factor patterns. Oblique, *promax*, rotation identifies the extent to which each of the factors is correlated, and provides greater flexibility for searching out factor patterns (Reis & Judd, 2000). Considering the sample sizes employed in this study and the desired level of significance of less than .05, a minimum standard of .45 was established to distinguish practically significant factor loadings (Hair et al., 1998, table 3.2, p. 112).

Study 1: Results

Sample 1: CFA

As predicted by the *a priori* theoretical investigation, restricted analysis employing maximum likelihood extraction and a *promax* rotation generated a three-factor solution, determined by eigenvalues greater than 1 and a corresponding scree plot point of inflec-tion. The solution explained 64.63% of the variance over the three dimensions (i.e., acquiring resources, protecting resources, and developing resources). Initial goodness of fit determined by the maximum likelihood algorithm was significant ($p < .000$), suggest-ing that there is no need to reject the null hypothesis that the discrepancy between the predicted and observed covariance is equal to zero (Haynie & Shepherd, 2009). Table 1 displays factor loadings, eigenvalues, and variance explained statistics.

SEM performed with the AMOS 18 program (IBM, Armonk, NY) was utilized to determine whether the three factors aggregate together, and to investigate the significance level and direction of the correlations between factors. Results show that the three dimensions are significantly and positively correlated ($p < .01$), indicating that they work together (as described above) to capture the essence of the COR theory behaviors. Using SEM, fit statistics were produced for both the three-factor model and an alternative one-factor model containing all 16 items. Following the suggestions of Hair, Black, Babin, Anderson, and Tatham (2006), several goodness-of-fit statistics were used to distinguish the prevailing three-factor model from the worse fitting, one-factor model, including the chi-square/degrees of freedom ratio (χ^2/df), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). RMSEA lower than .08, CFI and TLI values greater than .90, and χ^2/df less than 3.00 have been recommended to indicate good model fit (Hair et al.). As expected, all three indicators demonstrated good model fit for the three-factor model (Hair et al.). Fit statistics for both three-factor and one-factor models are reported in Table 2.

Sample 1: Reliability

This study utilized Cronbach's alphas (α) and construct reliability (*CR*), with a traditional lower limit benchmark of .70 (Nunnally, 1978), to test the reliability of the

Table 1

Factor Loadings, Eigenvalues, and Variance Explained (Studies 1 and 2)

Study 1: Sample 1				Study 1: Sample 2				Study 2			
Item # (see Appendix)	Developing resources	Protecting resources	Acquiring resources	Item # (see Appendix)	Developing resources	Protecting resources	Acquiring resources	Item # (see Appendix)	Developing resources	Protecting resources	Acquiring resources
Item 13	.838			Item 12	.942			Item 10	.933		
Item 12	.776			Item 13	.851			Item 7	.885		
Item 14	.750			Item 14	.823			Item 8	.847		
Item 16	.661			Item 11	.699			Item 6	.843		
Item 11	.652			Item 15	.666			Item 9	.805		
Item 15	.638			Item 10	.576			Item 12		.872	
Item 7		.812		Item 8		.860		Item 13		.821	
Item 9		.784		Item 7		.788		Item 14		.810	
Item 6		.783		Item 9		.727		Item 16		.748	
Item 8		.749		Item 6		.686		Item 11		.740	
Item 10		.732		Item 16		.585		Item 15		.724	
Item 3			.889	Item 3			.890	Item 3			.828
Item 4			.821	Item 4			.779	Item 4			.828
Item 2			.753	Item 2			.681	Item 2			.734
Item 1			.649	Item 1			.647	Item 5			.708
Item 5			.572	Item 5			.428	Item 1			.683
Variance	37.60%	15.63%	11.40%	Variance	38.17%	15.97%	10.70%	Variance	49.57%	13.31%	11.34%
Cumulative	**37.60%**	**53.24%**	**64.64%**	Cumulative	**38.17%**	**54.14%**	**64.84%**	Cumulative	**49.57%**	**62.88%**	**74.22%**
Eigenvalue	6.02	2.5	1.82	Eigenvalue	6.11	2.56	1.71	Eigenvalue	7.93	2.13	1.82

Note: The bold numbers indicate the cumulative variance explained.

Table 2

Fit Statistics for All Models

Model		N	χ^2/df	CFI	TLI	RMSEA
Sample 1:	Three-factor model	332	2.17	.955	.939	.059
	One-factor model		12.02	.562	.427	.18
Sample 2:	Three-factor model	259	2.13	.938	.917	.066
	One-factor model		8.24	.591	.466	.168
Study 2:	Three-factor model	233	2.69	.938	.926	.08
	One-factor model		11.24	.612	.553	.215

χ^2/df, chi-square/degrees of freedom ratio; CFI, comparative fit index; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation.

Table 3

Scale Reliability and Validity

Factor		α	*CR*	AVE	Acquiring resources	Protecting resources	Developing resources
Sample 1:	Acquire	.861	.859	.552	**.743**		
	Protect	.882	.883	.601	.291	**.775**	
	Develop	.869	.87	.53	.353	.557	**.728**
	RICH	.888	.953	.559			
Sample 2:	Acquire	.829	.833	.504	**.71**		
	Protect	.859	.861	.558	.207	**.747**	
	Develop	.898	.901	.605	.34	.572	**.778**
	RICH	.887	.952	.559			
Study 2:	Acquire	.882	.883	.604	**.777**		
	Protect	.945	.945	.775	.497	**.881**	
	Develop	.915	.916	.648	.516	.622	**.805**
	RICH	.929	.97	.674			

α, Cronbach's alpha; *CR*, construct reliability; AVE, average variance extracted. The square root of the average variance extracted appears in bold along the diagonal for each group of factors. The off-diagonal elements are the correlations between the factors.

RICH. Results indicate good reliability for each of the three dimensions of the RICH, resource acquisition (α = .862, *CR* = .859), resource protection (α = .881, *CR* = .883), and resource development (α = .869, *CR* = .870). Also, values for the RICH across all 16 items represented a high degree of reliability in the measure (α = .888, *CR* = .953). Reliability results appear in Table 3.

Sample 1: Structural Validity

A statistical structure analysis of the scaled items was conducted to test within-structural and between-structural validity. Within structural (convergent) validity is exhibited when

theoretically interrelated measures are demonstrated to be markedly interrelated (Fornell & Larcker, 1981). Convergent validity is established when all items load more strongly on their associated factors (loading > .50), *and* each factor loads stronger on its associated factor than any other factor (Chao & Tam, 1997; Haynie & Shepherd, 2009).

Discriminant validity (structural) is exhibited when measures that should not be related to each other are not related. This type of validity can be tested by comparing the average variance extracted (AVE) of each construct, a measure of the percentage of variance captured by a construct, to the correlations among the other constructs in the study (Fornell & Larcker, 1981). Table 3 shows the square root of the AVE for each construct along the diagonal; correlations among the constructs are shown in the rows and columns. In order to claim discriminant validity, the square root of each construct's AVE should be greater than any other corresponding correlation between constructs (Chao & Tam, 1997). The AVE for all factors was above .50, and no shared variance for any one factor was found to be greater than its respective squared AVE.

Sample 2: Employed Individuals CFA

As in Sample 1, confirmatory factor analysis was run utilizing a maximum likelihood extraction and a *promax* rotation. Again, the theoretically proposed three-factor solution was produced, as determined by eigenvalues greater than 1 and a corresponding scree plot point of inflection. The solution explained 64.84% of the variance over the three dimensions. Initial goodness of fit determined by the maximum likelihood algorithm was significant ($p < .000$). Table 1 displays the factor loadings, eigenvalues, and variance explained statistics for Sample 2.

Concurrent with Sample 1, SEM results indicate that the three factors are significantly and positively correlated ($p < .01$), showing that they work together to capture the essence of COR theory behaviors. Goodness-of-fit statistics χ^2/df, CFI, TLI, and RMSEA were used to distinguish the prevailing three-factor model from the worse-fitting, one-factor model. All three indicators demonstrate good model fit in the three-factor model (Hair et al., 2006). For Sample 2, fit statistics are reported in Table 2.

Sample 2: Reliability

Cronbach's alphas and CR statistics were used in the second sample to test the reliability of the RICH. Results indicate good reliability for each of the three dimensions of the RICH, as indicated in Table 3. Also, the Cronbach's alpha value for the RICH across all 16 items was .882 (*CR* = .953), representing a high degree of reliability in the measure.

Sample 2: Structural Validity

A statistical structure analysis of the scaled items was conducted to test within structural and between structural validity. Table 3 shows the square root of the AVE for each construct along the diagonal; correlations among the constructs are shown in the rows and columns. The AVE for all factors was above .50, and no shared variance for any one factor was found to be greater than its respective squared AVE, signifying convergent and discriminant validity of the factors.

Study 2

Shaver and Scott (1991), in their psychological model based on the individual and their choices, explain entrepreneurial activity in terms of resource interaction. Following

this framework, they suggest entrepreneurship can be better understood through the perceptions of the entrepreneur. More specifically, entrepreneurial situations develop through people's perceptions regarding their resources. Furthermore, Shaver and Scott emphasize that investigating how cognitive representations of the entrepreneur, especially those regarding resources, are transformed into actions is critical to the understanding of entrepreneurship.

Entrepreneurs' resources are often unknown, or go without consideration, due to the dynamic nature of new venture creation. Therefore, unlike employees of organizations with predetermined resources to look out for, entrepreneurs encounter things in their environment that cannot instantly be processed as useful or valuable for coping, or otherwise. Subsequently, entrepreneurs often rely on heuristics when encountering resources (Busenitz & Barney, 1997). For the purposes of Study 2, the RICH is investigated as a cognitive mechanism for use in situations where threat of resource loss requires attenuation.

Traditional scientific research designs suggest operationalizing the concept in question for use in applicable specific contexts (Johns, 2006). The cognitive process of the COR theory behaviors, as described above, shows theoretical merit for relation to outcomes of importance in the entrepreneurial context. For instance, many entrepreneurial situations are characterized by ambiguity, uncertainty, and potential for resource loss (Kirzner, 1997; Shane & Venkataraman, 2000). Such conditions of entrepreneurship manifest an environment where almost anything could be a potentially valuable resource, creating a specific and novel context for which to seek answers regarding the effects of the RICH.

Study 2: Hypotheses

Outcome variables thought to have the highest bearing on the field's academic and practical contributions were chosen for initial query. Also, due to the relative newness of the RICH construct, alternative independent variables were chosen to compare the explained variance. The following sections address the rationale for the investigation, expounding the hypothetical linkages through relevant literature and theory.

Entrepreneurial Success and the RICH

In the highly volatile, uncertain world of entrepreneurs, almost all things in the environment can be resources (Bygrave & Zacharakis, 2007), and resources form the basis of competitive advantage (Barney, 1991; Busenitz & Barney, 1997). However, due to the chaotic nature of situations often faced during the entrepreneurship process, information about each encountered resource may not receive a comprehensive evaluation. Hence, the information must pass through the entrepreneur's cognitive response filter, wherein situations with similar characteristics may be processed using a heuristic (Holcomb et al., 2009). Thus, circumstances exist where some will choose to ignore resources, and others will act on them.

Individuals incorporating the RICH are inclined to act in accordance with the COR theory behaviors of resource acquisition, protection, and development. For entrepreneurs, the COR theory behaviors may be able to help sustain competitive advantage that otherwise could be threatened by the lack, or loss, of contributing resources. Insomuch that unpredictable threats of loss can be warded off by stored and protected resources, entrepreneurs can concentrate on other tasks (e.g., research and development) that may

increase their chances of success. Also, individuals inclined to develop their retained resources may further increase their chances for competitive advantage through re-bundling and/or innovation.

Previous studies have shown perceived success and financial performance are affected positively by coping mechanisms. For example, Jex (1998) and Sonnentag (2002) showed, at the individual level, that financial performance would increase as coping increased. Also, Van Veldhoven (2005) found that coping and financial performance were linked at the business unit level. Similar results have been shown between coping and perceived success (Chu, Kara, Zhu, & Gok, 2011). However, no studies exist regarding the effects of coping by means of the COR theory behaviors in the context of entrepreneurship. This may be due to the lack of measurable constructs pertaining to the COR theory that are valid for investigating phenomena associated with entrepreneurship and entrepreneurial success.

Furthermore, entrepreneurs with a mindset to acquire, protect, and develop resources may have a general competitive advantage rooted in the attenuation of stress regarding uncertainty and in the potential utilization of resource stockpiles generated by such behaviors. In turn, they have a greater chance for success in situations dependent on the ability to cope with uncertainty and resource loss. For entrepreneurs, success is often manifested as financial performance or perceived accomplishment. With this in mind, the ensuing hypotheses are proposed:

Hypothesis 1: The RICH is positively related to the financial performance of entre-preneurial ventures.

Hypothesis 2: The RICH is positively related to perceived entrepreneurial success.

Predictive Validity of the RICH

A primary goal of this study is to provide evidence for the RICH as a distinct predictor of organizational outcomes in the entrepreneurial context. It is practically and theoretically pivotal to examine the discriminant validity of less established, altered, or newly developed constructs over more established predictors (Mumford, Van Iddekinge, Morgeson, & Campion, 2008). The use of additional predictors is of value when additional variance is explained in the criterion variable, beyond that which is accounted for by alternative, demonstrated predictors (Hunter & Schmidt, 1998). Therefore, it is important to investigate the predictive validity of the RICH relative to that of other commonly used predictors.

Entrepreneurial Self-Efficacy. In general, people tend to avoid activities that they believe exceed their abilities, and they engage in, and perform assuredly, activities that they judge themselves capable of managing (Bandura, 1977). Social cognitive theory suggests that individuals not only are products of their environment or circumstances, but are also contributors to them (Bandura, 1997). In this sense, individuals can be agents of their own success or failure by intentionally influencing their self and/or their environment (Bandura, 2006). According to vast empirical evidence, self-efficacy is among the most pervasive of agency mechanisms (Audia, Locke, & Smith, 2000; Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003; Caprara et al., 2008).

Entrepreneurship and self-efficacy seem to go hand in hand. Some have gone so far as to suggest that without self-efficacy, the process of entrepreneurship may never begin (Zhao, Seibert, & Hills, 2005). Individuals seeking to engage in entrepreneurial activity do not have the structure of an existing organization guiding or goading them along. Thus, the ability to act in a confident, self-influential manner is prominent in the entrepreneurial

context. Entrepreneurs must have the self-confidence not only to establish a new venture, but also to champion that venture to fulfill their desired goals under uncertain, and often unknowable, circumstances.

Self-efficacy consistently explains a large portion of variance of entrepreneurial success (Hmieleski & Baron, 2008; Markman & Baron, 2003). For example, Hmieleski and Corbett (2008) and Baum and Locke (2004) identified positive relationships between entrepreneurs' self-efficacy and venture growth. Increases in alternative measures of venture performance have also been linked to increases in entrepreneurs' self-efficacy (Forbes, 2005).

As a mechanism for coping with resource loss, the RICH may provide similar effects as entrepreneurial self-efficacy. Both constructs provide a cognitive method for motivation, and both constructs provide a means to overcome adversity. However, the effects of the RICH are based in the objects, energies, characteristics, and conditions that may become resources. In this way, the RICH can be utilized by anyone who can adopt such a mindset, giving even the least confident individual reassurance by providing the potential for the resource needed to mitigate uncertainty and strain. Hence, the RICH may be compounded with entrepreneurial self-efficacy in an effort to produce entrepreneurial success, allowing for a possible discrepancy in variance explanation between individuals without both afflictions. Considering the need for resources to enable any entrepreneurial venture to function, the following hypotheses are proposed:

Hypothesis 3a: The RICH provides incremental prediction of financial performance beyond that predicted by entrepreneurial self-efficacy.
Hypothesis 3b: The RICH provides incremental prediction of perceived entrepreneurial success beyond that predicted by entrepreneurial self-efficacy.

Business Longevity. Research indicates that individuals who fail to persevere experience increased anxiety and negative affect, which causes them to perform inadequately (Bandura, 1997). Entrepreneurs must endure numerous obstacles to be successful, including working intensively despite very uncertain outcomes; establishing market position with little economic power; outwitting and outperforming rival organizations; and overcoming liabilities of newness, smallness, and legitimacy (Markman & Baron, 2003). Competitive advantage may arise for those individuals who can withstand such adversity.

Studies show that individuals who overcome adversity, and remain in business, ultimately outperform those who do not (Markman & Baron, 2002). Such studies suggest that since creating a new company is an ongoing challenge, wherein success is a function of personal endurance for new venture difficulties, entrepreneurs who survive will tend to be more successful (Markman & Baron, 2003). Furthermore, persevering through the difficulties of the entrepreneurial process can be an accomplishment that warrants perceptions of entrepreneurial success in its own right. It is expected that business longevity will help forecast entrepreneurial success. However, the theoretical arguments from Study 1 link the COR theory behaviors, represented by the RICH, to the mindset of the entrepreneur. It is thought that cognitive factors can help explain significant amounts of variance regarding outcomes in entrepreneurship (Baron, 2007). To this effect, the following hypotheses are offered:

Hypothesis 4a: The RICH provides incremental prediction of financial performance beyond that predicted by business longevity.
Hypothesis 4b: The RICH provides incremental prediction of perceived entrepreneurial success beyond that predicted by business longevity.

Number of Founders. More than half of all new firms commence their venture adventure with more than one individual actively playing the role of entrepreneur (Barringer & Ireland, 2008). Many researchers believe entrepreneurship is a collective activity (Gartner, Shaver, Gatewood, & Katz, 1994; Ucbasaran, Lockett, Wright, & Westhead, 2003), and that teams of entrepreneurs are critical for new ventures (Birley & Stockley, 2000). Also, studies have shown that collaboration between individuals increases the pool of resources available to accomplish organizational tasks (O'Connor, Hamouda, McKeon, Henry, & Johnston, 2006).

In many instances, cofounded ventures have been discovered to be more successful than single-founder ventures (Masuda, 2009). Cooperation among cofounders can exploit diversity of skills and decrease risks of uncertainty in the innovation process (Matlay & Westhead, 2005). In turn, this can enhance venture success by increasing innovation (Zahra, 2008). Recent research by Masuda found that the correct blend of skills among cofounders can attenuate structural problems often faced by new companies. In the same way, the correct blend of many resources may reduce problems encountered by entrepreneurs.

While increasing the number of founders can increase a venture's pool of resources (Bruton & Rubanik, 2002), and often the potential of its success (Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007), each additional founder brings a new set of variables to accommodate (Weterings & Koster, 2007). The RICH focuses on a specific cognitive disposition of the founders, rather than the ambiguous resource potential of additional founders. Therefore, it is hypothesized that the RICH is a more precise predictor of entrepreneurial success than the number of founders.

Hypothesis 5a: The RICH provides incremental prediction of financial performance beyond that predicted by the number of founders.
Hypothesis 5b: The RICH provides incremental prediction of perceived entrepreneurial success beyond that predicted by the number of founders.

Study 2: Methods

Design Considerations

Self-report surveys are particularly prone to artifactual findings (Paulhus & Vazire, 2007). Therefore, general design considerations (e.g., explicit protection of confidentiality) were made to increase confidence in the findings based on the recommendations of Rosnow and Rosenthal (1989). Similar to Study 1, design precautions and controls intended to prevent common methods bias were implemented (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). These included using different questionnaire sections, instructions, and response scales for different measures, and protecting respondent anonymity. Multiple response formats (e.g., multiple choice, fill-in-the-blank, written text boxes) and a marker variable were used to mitigate programmed responses. Multiple survey forms were used to combat cognitive selection biases (i.e., social desirability). In addition, a pilot study was conducted to ensure the interpretability of the scale items.

An estimation of minimum sample size needed was conducted to ensure adequate statistical power. *A priori* power analysis was performed to estimate the required sample size needed to reach the desired level of confidence in avoiding type I (false positive) and type II (false negative) errors. The typical desired level of significance is .05 or lower (Bandura et al., 2003), or less than a 5% chance a relationship as strong or stronger than

the one observed will occur by chance (type I error). Also, in general, a 5% chance of a relationship found to be nonsignificant actually being significant (type II error) is an acceptable risk (Caprara et al., 2008).

Based on effect sizes of similar relationships found throughout the literature (Hmieleski & Baron, 2008, 2009; Zhao, Seibert, & Lumpkin, 2010), it is expected that the effect sizes of the relationships examined will be low. Therefore, a low effect size (.10) was chosen to represent the estimated effect size needed to compute the power analysis. Given the parameters above, a recommended minimum power of .80 (Cohen, 1988), and the power calculating program G*Power 3.10 (Faul, Erdfelder, Lang, & Buchner, 2007), a sample size of 132 was predicted to be needed when conducting the regression analyses of the measures proposed in this study.

Participants and Procedures

This study surveyed business founders in the opportunity exploitation phase of their entrepreneurship process. Entrepreneurs in this stage offer a unique perspective to organizational science for a number of reasons. For instance, the perspectives of the founder and the general consensus of the organization still are relatively proximal when compared with diversified, committee-managed firms. Also, entrepreneurs in this stage have experienced the market for which their opportunity is thought to exist. This allows for a perception of relative-market performance to be comprised.

Social networks, including Internet-based sites Facebook and Linkedin, were used to identify business owners (e.g., self-identified as "business owner"). In total, 1,397 people thought to be business owners were identified and e-mailed the initial participation letter, which asked entrepreneurs to complete the web-based survey for the chance to win a $500 prepaid Discover card. A link to the web-based survey appeared at the end of the letter. Reminder e-mails were sent to business owners every 2 weeks for a period of 6 weeks.

To reduce the possibility of nonresponse bias and common method bias, all participants were identified using the same criteria (i.e., all invitees identified themselves as business owners). Also, two survey forms were used to measure the predictor and criterion variables. In the first form, the predictor variables preceded the criterion variables. In the second form, the criterion variables preceded the predictor variables. This was done to diminish the possibility of illusory correlations, implicit theories, and social desirability biases (Podsakoff et al., 2003). An independent samples test (*t*-test) was then conducted to determine if significant differences existed between predictor variable and criterion variable means across presentation orders. The results of the *t*-test provided no significant mean differences for criterion or predictor variables between presentation orders, indicating that there were no order effects (Morgeson, Delaney-Klinger, Mayfield, Ferrara, & Campion, 2004).

At the time the data analysis began, 289 people (20% response rate) from 24 states (i.e., AK, AL, AR, CA, CO, CT, FL, GA, IL, IN, MA, MI, MO, NC, NY, OH, OR, PA, SC, TN, TX, UT, VA, and VT) and three foreign countries (i.e., Barbados, Canada, and the United Kingdom) participated in the study. Of the people who responded, 56 were eliminated due to invalid (e.g., nonbusiness owners, responded to marker variable), incomplete, or unverifiable information. The remaining sample of 233 entrepreneurs comprised 145 (62.2%) males, and had a mean age of 43.7 years (SD = 12.75). Entrepreneurs reported having an average of 8.4 years of experience in their industry (SD = 8.8) before starting their business, and 111 (53.4%) stated that they had previously started at least one other business. Generally, participants were educated; 65 (29.3%) held bachelor degrees, 56 (25.2%) held master's degrees, and 14 (6.3%) held their field's terminal

degree (e.g., PhD, MD). The entrepreneurs' respective businesses averaged two founders (SD = 2.34), 132 employees (SD = 1,712.28), 12.85 (SD = 14.22) years in existence, and $1,995,560.04 (SD = $13,506,233.01) in annual sales (averaged from 2008 to 2009).

Study 2: Measures

Entrepreneurial Self-Efficacy

The construct of entrepreneurial self-efficacy was measured using an adapted 10-item version of the multidimensional entrepreneurial self-efficacy inventory developed by De Noble, Jung, and Ehrlich (1999). Dimensions of entrepreneurial self-efficacy included searching, planning, marshaling, and implementing. Sample items include "I am confident in my ability to get others to believe in my business vision and plans" and "I am confident in my ability to manage the financial responsibilities of my business." Responses ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Perceived Entrepreneurial Success

The construct of perceived entrepreneurial success was measured using an adapted 9-item form of the Babalola (1998) Psychological Determinants of Perceived Business Success scale. The items are adapted for the entrepreneurial context. Sample items include "My business is a complete success" and "I am a successful entrepreneur." Responses ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Financial Performance

Financial performance was calculated by averaging self-reported profit (or loss) from the 2 years preceding the commencement of the study (i.e., 2008 and 2009). Entrepreneurs were also asked to acknowledge whether or not they had made a profit or recorded a loss in each of the years 2008 and 2009, respectively.

Study 2: Data Analysis

Item Reliability and Validity

Although previously validated measures were used in this study, many items were adapted for the entrepreneurship context. Therefore, the necessary statistical examinations were conducted to verify the reliability of the measures. All scaled measures used in this research produced reliability estimates in the upper range of acceptable internal consistency for the Cronbach's alpha test (Nunnally, 1978): entrepreneurial self-efficacy (.89), perceived entrepreneurial success (.90), and RICH (.93).

Common Methods Variance

In addition to the design considerations, the data were checked for evidence of common method variance (CMV) in the analysis stage of the research. The Harman one-factor test (Harman, 1976) is one of the most widely used *a posteriori* techniques performed to address the issue of CMV. The basic assumption of this approach is that if a considerable amount of CMV is present, either a single factor will emerge from the

factor analysis or one general factor will account for the greater part of the covariance among the measures (Podsakoff et al., 2003).

Of the 102 variables collected in the survey, both scree plot and Kaiser–Guttman criterion yielded 21 factors with eigenvalues greater than 1. No single factor was dominant. The first factor explained only 29.78% of the variance in the variables, with as many as 20 other factors explaining an additional 43.74% of the variance in the variables (total variance explained = 73.52%). Therefore, it is concluded that there is not sufficient evidence of CMV among the variables for concern. It is noted that the Harman one-factor test does not adequately account for method effects (Podsakoff et al., 2003). However, the combination of common method bias precautions (i.e., implemented in the design of this study) and the Harmon one-factor test provide adequate evidence that differences in responses due to common methods are not a significant problem in these data (Wang, 2008).

Hypothesis Testing

Consistent with the literature regarding individual-level entrepreneurial outcomes, hierarchical regression analyses were conducted to assess the hypothesized relationships (Hmieleski & Baron, 2009; Hmieleski & Corbett, 2008). Hypotheses 1 and 2 were tested by examining the standardized and centered beta coefficients (β) for significant relationships ($p < .05$) between the variables after controlling for specific variables known to attenuate relationships with entrepreneurial outcomes (i.e., age, gender, and ethnicity). These direct effects also were noted for the testing of hypotheses relating to the incremental validity of the RICH.

The hypothesized incremental validity of the RICH as a predictor of entrepreneurial success was tested using a three-step hierarchical regression approach. First, demographic variables (i.e., age, gender, and ethnicity) were entered into the regression equation. Second, the alternative predictors of entrepreneurial success (i.e., entrepreneurial self-efficacy, business longevity, and number of founders) were entered into the regression equation. Lastly, the RICH was entered into the regression equation. Incremental validity is confirmed when a significant ($p < .01$) change in R^2 occurs between Step 2 and Step 3 (Hunter & Schmidt, 1998).

The potential for multicollinearity is often a concern when considering survey-based research. However, the design and execution of the survey methods employed in this research aided in avoidance of such problems. Nonetheless, variance inflation factor (VIF) scores were computed, which indicate the extent to which collinearity among predictor variables impacts model precision (Belsley, 1991). VIF scores greater than 10 are typically considered problematic (Bagheri & Midi, 2009). Additionally, tolerance tests were conducted (Tabachnick & Fidell, 2001), wherein scores below .10 traditionally provide evidence of multicollinearity (Hair et al., 1998). No such evidence was found in this study.

Study 2: Results

In Study 2, a confirmatory factor analysis of the 16-item RICH inventory was conducted using a maximum likelihood extraction and a *promax* rotation. As in Study 1, a distinct point of inflection corresponded to eigenvalues greater than 1 for the theoretically posited three-factor solution. The factors of acquiring resources, protecting resources, and developing resources accounted for 74.22% of the variance in the model. Initial goodness

of fit determined by the maximum likelihood algorithm was significant ($p < .000$), indicating that there is no need to reject the null hypothesis that the discrepancy between the predicted and observed covariance is equal to zero (Haynie & Shepherd, 2009). Table 1 displays the factor loadings, eigenvalues, and variance explained statistics for Study 2.

SEM demonstrated significant ($p < .01$) and positive correlation between the aggregating three-factors. Chi square ratio, CFI, TLI, and RMSEA fit statistics showed that the three-factor model was significantly a better fit to the data than a one-factor model (see Table 2). Reliability estimates were conducted using both Cronbach's alpha (lower bound) and CR (upper bound) techniques. Results suggest strong reliability for the RICH ($\alpha = .929$, $CR = .970$) and for the three separate factors. Tests revealed that the AVE for all factors was above .50, and no shared variance for any one factor exceeded its respective squared AVE, signifying convergent and discriminant validity. Reliability and validity statistics are displayed in Table 3.

Table 4 provides descriptive results. Most of the correlations among study variables are modest by psychometric standards. However, the variables concerned with individual cognition are moderate. This is to be expected, as the foundation of each of these constructs deals with individuals' cognitions concerning their own perceptions. As previously explained in detail, the RICH and entrepreneurial self-efficacy are designed to measure cognitive properties that attenuate uncertainty. Therefore, a moderate relationship between these variables is expected.

Direct Effects

Hypothesis 1 proposed that the RICH was positively related to the financial performance of entrepreneurial ventures. Using the variable entering approach to control for age, gender, and ethnicity effects, hierarchical regression analysis confirmed a significant, positive relationship between the RICH and financial performance ($\beta = .209$, $p < .001$), which explained modest incremental financial performance variance ($\Delta Adj R^2 = .044$, $p < .001$). No VIF score exceeded 1.06 (minimum tolerance > .95). Hypothesis 1 was supported.

Hypothesis 2 proposed that the RICH was positively related to perceived entrepreneurial success. Using the variable entering approach to control for age, gender, and ethnicity effects, hierarchical regression analysis confirmed a significant and positive relationship between the RICH and perceived entrepreneurial success ($\beta = .577$, $p < .001$), which explained moderate incremental perceived entrepreneurial success variance ($\Delta Adj R^2 = .331$, $p < .001$). No single VIF score exceeded 1.05 (minimum tolerance > .95). Hypothesis 2 was supported.

Incremental Validity

Two hierarchical regression analyses were performed to assess the incremental validity of the RICH as a predictor of two factors of entrepreneurial success, financial performance, and perceived entrepreneurial success. The first analysis compared variance of financial performance explained by entrepreneurial self-efficacy, business longevity, and the number of founders with the variance of financial performance explained by the RICH after controlling for the previous three factors. The second analysis compared variance of perceived entrepreneurial success explained by entrepreneurial self-efficacy, business longevity, and the number of founders with the variance of perceived entrepreneurial success variance explained by the RICH after controlling for the previous three factors.

Table 4

Variable Means, Standard Deviations, and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Age	43.535	12.223	—								
2. Gender	.670	.470	-.017	—							
3. Ethnicity	.809	.378	.212***	-.047	—						
4. Number of founders	1.820	2.237	.064	-.077	.052	—					
5. Business longevity	10.920	9.958	.572***	.111*	.118***	.089	—				
6. ENT self-efficacy	5.828	.811	.010	.007	-.004	-.072	.020	**.866**			
7. RICH	4.783	1.028	.005	-.001	-.073	-.124**	.074	.444***	**.933**		
8. Perceived ENT success	4.707	1.169	.157***	-.061	.058	-.111*	.212***	.503***	.573***	**.896**	
9. Financial performance	131,175.593	248,562.000	.084	.056	.032	.036	.168***	.082	.207***	.262***	—

*** Correlation is significant at the .01 level (two-tailed); ** correlation is significant at the .05 level (two-tailed); * correlation is significant at the .10 level (two-tailed).
Notes: N = 233; Cronbach's alpha for scaled variables is shown in bold on diagonal.
RICH, resource-induced coping heuristic; ENT, entrepreneurial.

Predictor variables were entered into the hierarchical regression based on the expected highest explained variance (Hunsley & Meyer, 2003). Stemming from their common effects in the business literature, age, gender, and ethnicity were controlled for in all the analyses (Lee & James, 2007). Also, for all analyses, the scale scores were centered and standardized to put them on the same metric (Watson et al., 2008). The predictors significantly increased the variance explained across both models.

Financial Performance. Results of the first three-step hierarchical regression analysis are reported in Table 5. In the first step, the criterion variable was regressed on the control variables age, gender, and ethnicity (Mount, Oh, & Burns, 2008), which did not account for a significant portion of the variance of financial performance. In Step 2, entrepreneurial self-efficacy, business longevity, and number of founders were added to the control variables. Entrepreneurial self-efficacy, business longevity, and number of founders demonstrated a slight, positive increase in explained variance ($\Delta AdjR^2 = .026$, $p < .10$).

In the final step, the RICH was modeled with the control variables, entrepreneurial self-efficacy, business longevity, and the number of founders. The RICH registered a positive, significant relationship with the criterion variable ($\beta = .210$, $p < .01$). The final model adequately fit the data ($F = 2.471$, $p < .01$). Results of the analysis suggest that the RICH does explain more variance, and is therefore a more adequate predictor, than age, gender, ethnicity, entrepreneurial self-efficacy, business longevity, and the number of founders ($\Delta AdjR^2 = .034$, $p < .01$). No VIF score exceeded 1.548 (minimum tolerance > .645). Hypotheses 3a, 4a, and 5a were supported.

Table 5

Incremental Effects of the RICH on Perceived Entrepreneurial Success and Financial Performance

Variables	Perceived entrepreneurial success			Financial performance		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Control variables						
Age	.151**	.039	.056	.081	.017	.008*
Gender	−.057	−.092*	−.081*	.058	.040	.046
Ethnicity	.023	.030	.060	.017	.016	.031
Main effect variables						
Entrepreneurial self-efficacy		.492***	.309***		.081	.010
Business longevity		.196***	.150***		.167**	.144**
Number of founders		−.104**	−.063		.030	.051
RICH			.421***			.210***
Incremental effects						
F statistic	2.255*	17.253***	26.571***	.824	1.450	2.471***
$AdjR^2$	.029	.314	.453	.011	.037	.071
$\Delta AdjR^2$	.029*	.285***	.138***	.011	.026*	.034***

* $p < .10$, ** $p < .05$, *** $p < .01$.
Note: No VIF score exceeded 1.550 (minimum tolerance > .645).
RICH, resource-induced coping heuristic; VIF, variance inflation factor.

Perceived Entrepreneurial Success. Results of the second three-step hierarchical regression analysis are reported in Table 5. In Step 1, control variables were regressed on the criterion variable, which accounted for 3% ($\Delta Adj R^2 = .029$, $p = .083$) of the variance in perceived entrepreneurial success (Mount et al., 2008). Also, evidence was found for adequate fit ($F = 2.255$, $p = .083$) of the model to the data. In Step 2, entrepreneurial self-efficacy, business longevity, and the number of founders were added to the control variables. The model showed good fit ($F = 17.253$, $p < .01$), and the combined variables significantly explained additional variance in perceived entrepreneurial success ($\Delta Adj R^2 = .285$, $p < .01$).

In the final step, the RICH was modeled with the control variables, entrepreneurial self-efficacy, business longevity, and the number of founders. The model showed excellent fit ($F = 26.571$, $p < .01$). Entrepreneurial self-efficacy ($\beta = .309$, $p < .01$), business longevity ($\beta = .150$, $p < .01$), and the RICH ($\beta = .421$, $p < .01$) registered positive, statistically significant relationships with the criterion variable. Results of the analysis suggest that the RICH does predict more variance of perceived entrepreneurial success than age, gender, ethnicity, entrepreneurial self-efficacy, business longevity, and the number of founders ($\Delta Adj R^2 = .138$, $p < .01$). No VIF score exceeded 1.550 (minimum tolerance > .645). Hypotheses 3b, 4b, and 5b were supported.

Discussion

The implications of the present study are important and immediately poised for contribution to research regarding organizations and entrepreneurship. First, the COR theory was presented as a viable framework for explaining phenomena within the context of entrepreneurship. Also, based on the results of the analysis above, the RICH was revealed as a representative construct of the COR theory behaviors, specifically as an indicator of individuals' propensity to acquire, protect, and develop resources. By conceptualizing the principles set forth in the COR theory as a cognitive process, wherein resources are heuristically evaluated, the difficulties of cataloging unknown (or unknowable) resources are avoided. Next, the RICH was validated as a unique and robust predictor of entrepreneurship outcomes. Furthermore, providing evidence of incremental validity has been shown to be an effective way to legitimize new, underdeveloped, or unexploited constructs (Cortina, Goldstein, Payne, Davison, & Gilliland, 2000; Mumford et al., 2008). The variance explained by the RICH surpassed that of three common predictors of entrepreneurial success: self-efficacy, business longevity, and number of founders.

Insomuch that (perceived or actual) resource loss can be attenuated by the COR theory behaviors, the strain associated with resource loss is also reduced. The effects of reducing this strain by utilizing the RICH may be critical to many aspects of organizations. For individuals who are the epicenter of their organization, team, group, or family (e.g., entrepreneurs, CEOs, managers, heads of households), limited resources may be available to devote to deep contemplation regarding everything they encounter in their environment (Bygrave & Zacharakis, 2007). It has been posited that cognitive optimization processes and mechanical calculations may be futile in many entrepreneurial situations because the range of opportunities, and the consequences for exploring new things, often are not only uncertain, but altogether unknown (Kirzner, 1997). Consequently, many potential resources may be overlooked, or lost altogether. In these instances, the RICH may act as a resource in its own right, freeing up time and energy to be spent elsewhere in the organization (e.g., resource identification, research and development, expansion).

Ultimately, utilizing the RICH and other COR theory behaviors to prevent resource loss may distinguish those who succeed in business from those who do not.

Strengths and Limitations

The results described above stand alone as distinct strengths of this investigation. Also of note, the heterogeneous sample of entrepreneurs represented diversity important for the external generalization of the results to the population. Lastly, the design of the study, although self-reported, provided data with little concern for common method bias.

As with most research, this study includes several limitations. The cross-sectional response from entrepreneurs is one such limitation. Factors such as entrepreneurial self-efficacy and the RICH were reported by participants at one moment in time, increasing the probability of common method impacts. To attenuate these potential effects, the researcher utilized alternate forms of the survey, and separated the predictor and criterion variable. However, common method bias effects are inherently difficult to mitigate in a cross-sectional design. Hence, *post hoc* collinearity diagnostics were executed on percept–percept correlations to ascertain the level of variance inflation (i.e., an effect of multicollinearity) due to common methods. No VIF exceeded 2.45 (minimum tolerance > .409), suggesting common method effects were limited, particularly when contrasted against acceptable limits of 10 (Hair et al., 1998).

Also, it has been pointed out that regression results based on observed correlations can be deceptive because the incremental validity observed by adding a new predictor or predictors could be simply due to the effect of improving reliability of the existing predictors (Schmidt & Hunter, 1996). However, the possibility of this type of effect was examined in a way similar to the procedures performed by Mount et al. (2008). All hierarchical regression analyses were reanalyzed based on correlation matrices, wherein both predictor and criterion variables were unstandardized. The resulting *t*-test evaluation between the constant variable and model indicators were significant ($p < .01$) in all cases. This indicated that the linear patterns of the variables in each model were different from each other.

Directions for Future Research

Interpreting the RICH within a nomological network can contribute to the understanding of behavior in organizations. For instance, meta-cognition, or thinking about how to think about things, should be investigated as a distal variable to the RICH. Barnard (1938) noted that knowledge of a venturist's cognitions is required to understand how an organization develops. This should include understanding of how cognitions related to venture success arise. Initial questions in this line of reasoning should include the following: (1) What experiences contribute to developing a resource-based cognitive coping mechanism? (2) What contexts are beneficial or detrimental to enacting a RICH? (3) Do entrepreneurs devise the mindset to perform the COR theory behaviors through a process of cognitive adaptability?

The RICH is believed to be a cognitive strategy that will aid in the entrepreneurial process. Yet it is unknown what internal and external factors lead to the choice of implementing the RICH. Cognitive adaptability is the ability to change and monitor one's cognitions given dynamic and uncertain task environments (Haynie & Shepherd, 2009). The entrepreneur's environment is dynamic and uncertain, even unknowable. For entrepreneurs, cognitive decisions might include how to think about evaluating opportunities or

potential threats, which leads to the actual evaluation of opportunities and threats. If the framework for thinking about things is monitored, and feedback is thought to affect goal orientation, knowledge, and experience (Haynie, Shepherd, Mosakowski, & Earley, 2010), then the development of coping cognitions and heuristics might be dynamic and continuous. Therefore, boundary conditions conducive to the RICH should be established.

Furthermore, different stages of the entrepreneurial process provide their own circumstances to question. For instance, does the RICH aid or hamper entrepreneurs in the opportunity discovery stage? What about the development stage or venture exit? Entrepreneurs prone to the COR theory behaviors, like the RICH, may have a difficult time relinquishing control of resources. In turn, this could affect individuals' ability to exit entrepreneurial situations due to the inherent resource-controlling nature of business ownership.

Investigating the interaction effects between the RICH and established variables in entrepreneurship may also lead to valuable insights regarding the entrepreneurial process. For example, how might the use of the RICH affect the relationship between risk-taking behaviors and entrepreneurial success? It has been suggested that entrepreneurs are not necessarily more or less risk adverse than nonentrepreneurs, but that they may perceive the level of risk, a potential stressor inherent in situations of uncertainty, differently than nonentrepreneurs (Palich & Bagby, 1995). Heuristic coping mechanisms may play a role in distinguishing the reasoning behind these differences.

The RICH construct may lend itself to other areas of investigation. Scholars have noted the importance of studying entrepreneurial behaviors within the corporate setting (Antoncic & Hisrich, 2001). The RICH may facilitate intrapreneurial behavior among employed individuals insomuch as those individuals recognize their corporate domain as a resource in of itself (Alvarez & Barney, 2007). For example, the RICH inventory might be adapted for social and organizational psychology to measure the RICH of CEOs, general managers, line employees, teachers, students, parents, or anyone else with the potential to encounter the strain of resource loss.

Relatedly, accounting for individuals with predispositions toward the COR theory behavior (i.e., people scoring high marks on the RICH) could prove a powerful employee selection tool. Intangible characteristics, such as organizational stewardship and prosocial behaviors, often are elusive factors among job candidates (Zhao & Liden, 2011). The RICH could provide insight into the propensity of an individual to contribute to an organization's competitive advantage by determining whether or not that individual will be on the lookout for resources, willing to protect their resources, and prone to developing their resources.

Finally, the concept of the RICH is not necessarily linear. Such a cognitive disposition set in overdrive could result in unnecessary hoarding, or resource overload—a situation where the entrepreneur may have too many potential resources to deal with, yet their cognitive process urges them to continue stockpiling. In these extreme cases, the RICH may be a detriment to entrepreneurial success and other positive outcomes of entrepreneurship.

Practical Implications

For individuals or organizations of a managerial nature, initiating coping mechanisms based on resource heuristics may have positive effects on employee behavior. Setting standards for acquiring, protecting, and developing resources may induce coping heuristic development. This may help employees cope with unexpected change in business situations.

For organizations of entrepreneurial orientation, the RICH denotes the basis for successful strategy development. Dynamic firms should seek to employ the concept at a required level. If the process code by which the organization runs incorporates the directive to acquire, maintain, and build resources, then the pool of resources could be increased or strengthened, allowing for more combinations of competitive advantage producing resource bundles.

For individuals with an entrepreneurial mindset, the evidence from this study suggests that steps should be taken to consciously regard resources in a manner consistent with the RICH. Once these factors are internalized, and actualized in a heuristic manner when encountering resources, they may assist in the attenuation of uncertainty, lead to good resource maintenance habits, or increase the capacity for innovation, all of which could be the competitive advantage that provides good fortune, and ultimately success.

Conclusion

It is suggested here that conservation of resource theory and the RICH are important tools for studying individuals and groups that create organizations. Direct and incremental effects of the RICH on entrepreneurial success were demonstrated and corroborated by a sample of entrepreneurs. Also, the RICH was evidenced as a robust predictor of entrepreneurial success factors, including financial performance and perceived success. As new considerations regarding the cognitions of entrepreneurs continue to raise questions about linkages to the entrepreneurial process, the COR theory can aid in the explanation of phenomena regarding resource loss, and the RICH is poised as a viable solution to measuring a piece of the entrepreneurial mindset puzzle.

Appendix

Resource-Induced Coping Heuristic (RICH) Items[1]

Acquiring Resources

1. My initial reaction to things I value is to make them my own.
2. I instinctively put myself in situations to gain resources.
3. When I see something of value I go after it without much thought.
4. Instinctively, I obtain things.
5. I collect things of potential value without giving it much thought.

Protecting Resources

6. I am quick to protect the things I have.
7. I instinctively maintain the things I have.
8. I safeguard the things I have against harm or loss.
9. It is important to me that I retain the things I have.
10. I instinctively protect my stuff.

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1. Responses ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Developing Resources

11. Without much thought, I find new ways to use my resources.
12. I increase the value of things I have.
13. I encourage the growth and development of the things I have without much thought.
14. I automatically think to make things stronger or more useful.
15. I instinctively improve the things I have.
16. I develop new resources from old resources.

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