

The Dark Side of Entrepreneurs' Creativity: Investigating How and When Entrepreneurs' Creativity Increases the Favorability of Potential Opportunities That Harm Nature

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Abstract

Entrepreneurs' creativity is the starting point of opportunity identification, exploitation, and innovation, so it is generally lauded by journalists, citizen observers, practitioners, and scholars. However, they may overstate the benefits of creative entrepreneurs while neglecting their potential costs. Building on moral disengagement theory, we theorize that a creative mindset enables entrepreneurs to generate reasons to justify their potentially environment-destroying behaviors (i.e., nature disengagement), which in turn increases their favorability of potential opportunities that harm nature. We first developed and validated a scale for measuring nature disengagement and then conducted two randomized between-subject experiments with active entrepreneurs. The empirical results largely supported our theoretical model of the dark side of creativity in the entrepreneurship context.

Keywords

creativity, entrepreneur, nature disengagement, opportunity evaluation, experiment

Creativity is often recognized as the starting point of opportunity identification, exploitation, and innovation (Gielnik et al., 2012; Zhou, 2008). Indeed, creativity helps individuals identify and exploit entrepreneurial opportunities, generate novel and useful business ideas, and increase

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innovation and technological advances (Ahlin et al., 2014; Arora et al., 2016; Bodur et al., 2015; Gielnik et al., 2012; Lin et al., 2016). However, although recent research has, to some extent, uncovered the impact of creativity on the unethical behaviors of employees (Gino & Ariely, 2012), the dark side of creativity in the entrepreneurship process has largely been overlooked. While entrepreneurs' creativity is generally lauded by journalists, citizen observers, practitioners, and scholars (Zhou, 2008), it likely has potential costs.

Environmental problems, such as the availability of natural resources and climate change, have been recognized as grand challenges and have received considerable attention from the academic community (George et al., 2016). Scholars have widely acknowledged that significant efforts are needed to foster sustainable development and lessen environmental degradation (Howard-Grenville et al., 2014). In meeting these needs, entrepreneurship research has emphasized innovation as a source of possible solutions to environmental degradation (Dean & McMullen, 2007; Hall et al., 2010). However, entrepreneurs' creativity, which is seen as the foundation of innovation, might have a potential dark side for nature. Overlooking the negative impact of entrepreneurs' creativity may lead to a biased understanding of entrepreneurship. The purpose of the current study is to explore the possible downside of entrepreneurs' creativity in their assessments of potential opportunities that harm nature.

Building on moral disengagement theory (Bandura, 1991) in the context of the natural environment, we introduce a new concept—nature disengagement—a set of cognitive justifications that allow individuals to engage in actions that damage nature while minimizing the self-sanctions that typically deter such behaviors. Specifically, we propose that creative entrepreneurs, characterized by high levels of cognitive flexibility and divergent thinking, are highly capable of justifying potential actions that degrade nature (i.e., high nature disengagement) and, as such, assess opportunities that are harmful to the environment more favorably. Using two samples of active entrepreneurs, we conducted two experiments to explore the detrimental effect of entrepreneurs' creativity on their assessments of opportunities that degrade nature and the underlying mechanisms of this effect.

The current study makes several important theoretical contributions to the entrepreneurship and creativity literatures. First, prior studies have generally extolled the virtues of entrepreneurs' creativity (Gielnik et al., 2012; Ward, 2004; Zhou, 2008), including their exploitation of opportunities that help solve environmental problems (Cohen & Winn, 2007). In this study, we provide new insights into how entrepreneurs' creativity may promote undesirable actions by revealing that entrepreneurs can use their creative mindset to justify the pursuit of potential opportunities that harm the natural environment. In doing so, we provide a more balanced view of entrepreneurs' creativity, specifically in the context of natural environment. Second, this study applies moral disengagement theory, which is prevailing in the psychology field (Bandura, 1991; Moore, 2015), to entrepreneurship research, and introduces a new construct—nature disengagement. By uncovering nature disengagement as a mediator in the relationship between entrepreneurs' creativity and their evaluations of entrepreneurial opportunities, this study sheds light on a new theoretical perspective in explaining entrepreneurs' behaviors that violate their own rules and values. Furthermore, developing and validating a new scale for nature disengagement helps extend the application of disengagement theory to the environment domain. We elaborate on these and other contributions in the Discussion section.

Theoretical Grounding and Hypothesis Development

In this study, we build on moral disengagement theory to formulate a model of entrepreneurs' creative mindset and nature disengagement. As illustrated in Figure 1, we theorize that entrepreneurs' creative mindset enables them to generate creative reasons to justify their

antienvironmental behaviors (i.e., nature disengagement), which in turn increases their evaluation of opportunities that harm nature. Before developing each aspect of the model, we introduce moral disengagement theory.

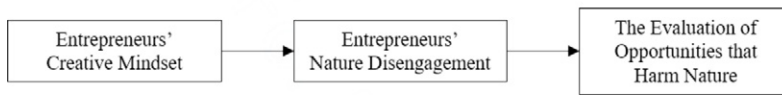


Figure 1. Theoretical model.

Moral Disengagement Theory and Nature Disengagement

As an extension of his more general social cognitive theory, Bandura (1986, 1991) introduced moral disengagement theory to explain why individuals are able to engage in immoral behaviors without apparent guilt or self-censure. Most people have developed moral standards and use them to anticipate, guide (or deter), and judge their own ethics-related behaviors. Actions that counter these standards lead to guilt and self-condemnation. Thus, individuals typically behave ethically, consistent with their internal moral standards, because they anticipate their positive and negative evaluations of potential behaviors (Bandura, 1986, 1991). However, moral self-regulation can be activated and deactivated selectively. According to moral disengagement theory, this self-regulatory function only operates when it is activated (Bandura, 1991). When it is deactivated, through moral disengagement (Bandura, 1986, 1991), people are freed from the guilt and self-censure that would arise when their acts violate their moral standards, in turn allowing them to behave immorally (Bandura et al., 1996; Bandura et al., 2001).

In moral disengagement theory, Bandura (1991) suggests that individuals' moral self-regulation can be disengaged through eight interrelated moral disengagement processes: moral justification, euphemistic labeling, advantageous comparison, displacement of responsibility, diffusion of responsibility, disregard for/distortion of consequences, dehumanization, and attribution of blame. The core tenet of moral disengagement theory is that moral disengagement represents individuals' ability to make self-serving justifications to engage in unethical behaviors as their detrimental actions become personally and socially acceptable (Bandura et al., 1996; Zhong, 2011). Indeed, moral disengagement is a key predictor of unethical behaviors (Detert et al., 2008; Moore et al., 2012).

We argue that the essential elements of moral disengagement theory can apply to the context of the natural environment. Environmental protection is a strong social norm in most cultures. At the individual level, people have considered environmental protection as a normatively appropriate behavior for a long period. People integrate the notion of acting "environmentally friendly" into their daily lives, and such behaviors deliver a normative message that pressures peers to follow. The fact that electric cars have gained considerable popularity despite their relatively high price and inconvenience indicates this pro-environmental social norm. At the societal level, environmental protection has been institutionalized to a great degree such that regulatory standards like International Organization for Standardization (ISO) 14000, the Ceres Principles (10-point code of corporate environmental conduct), and urban SO₂ concentration have been widely adopted in many nations (Waddock, 2008). Therefore, nature disengagement in the context of the natural environment is a theoretical extension of moral disengagement theory (see Shepherd et al., 2013). We define nature disengagement as a set of cognitive justifications that allow individuals to engage in actions that damage nature (e.g., discharge waste water at will, and buy products whose raw materials are rare animals and plants) while minimizing the self-sanctions (including self-condemnation and guilt) that typically deter such behaviors.¹

Entrepreneurs' Creative Mindset and Nature Disengagement

Moral disengagement theory emphasizes a key trigger to free people from strongly held norms. Applying the logic to the context of the natural environment, entrepreneurs' creative mindset may serve as a trigger freeing them from such norms. Creative mindset is referred to as state-based creativity, which means individuals are capable of generating ideas that are both novel and useful (Amabile, 1983; Gino & Ariely, 2012). While high creativity enables entrepreneurs to effectively explore opportunities and introduce innovation in the market (Ahlin et al., 2014; Ward, 2004), it may also trigger other psychological and behavioral states that are not necessarily tied to the generation of opportunities or innovation. Creativity has two main underlying components: divergent thinking (Amabile, 1983; Guilford, 1968, McCrae, 1987; Runco, 1991, 2004) and cognitive flexibility (Spiro & Jehng, 1990). Divergent thinking represents individuals' ability to generate unique ideas by exploring many possible solutions (Runco, 1991), and cognitive flexibility represents their mental capability to switch between different concepts and to restructure them differently (Scott, 1962). A variety of research has suggested that the divergent thinking and cognitive flexibility inherent in creativity can lead individuals to think and go beyond preexisting boundaries (Guilford, 1968) as well as to utilize unique approaches in decision making (Ashby et al., 1999; Spiro & Jehng, 1990) and problem solving (Amabile, 1983; Simonton, 1990; Spiro & Jehng, 1990). As both components involve generating novel and diverse ideas and solutions, they usually function together to enable individuals to produce creative ideas and think outside the box in a variety of situations (Eysenck, 1993; Nijstad et al., 2010), including those related to nature. That is, a creative mindset can enable individuals to generate innovative reasons to justify potential self-serving behaviors (Gino & Ariely, 2012; Qin et al., 2020b).

In the context of evaluating business opportunities that harm nature, creative entrepreneurs may engage in a series of cognitive processes that justify the exploitation of such business opportunities. Consistent with the argument of moral disengagement theory—namely, that people can behave immorally when they find justifications for their potentially immoral behaviors (Detert et al., 2008; Moore et al., 2012)—entrepreneurs' creative mindset may provide justifications for harming nature. For instance, creative entrepreneurs may generate novel justifications, such as the damaged natural environment can restore itself in the future, or it is hardly a sin to damage nature when so many other people are also destroying the natural environment, etc., We describe the above cognitive process as nature disengagement, which represents a set of cognitive justifications that allow individuals to commit behaviors that harm nature without (or with minimal) guilt or self-sanctions. The disengagement process is key to deactivating self-regulation (Bandura et al., 1996, Bandura et al., 2001). Thus, the high divergent thinking and cognitive flexibility inherent to a creative mindset can help entrepreneurs find novel and useful ways to justify self-serving behaviors that harm nature without diminishing their pro-environmental self-concept. Based on the above, we propose the following:

Hypothesis 1: Entrepreneurs' creative mindset is positively related to nature disengagement.

Entrepreneurs' Creative Mindset, Nature Disengagement, and Opportunity Favorability

Opportunity evaluation—the assessment of the attractiveness of a given potential opportunity (Haynie et al., 2009)—is a cornerstone of entrepreneurship research (Gruber et al., 2015). While some recent research on opportunity evaluation has focused on the rule-based reasoning and cognitive templates behind evaluating the economic considerations of potential opportunities

(Gruber et al., 2015; Haynie et al., 2009; Shepherd et al., 2015), we try to investigate the justification of opportunity exploitation with noneconomic costs, such as social and environmental issues. More specifically, moral disengagement enables individuals to justify behaviors that are inconsistent with their morals (e.g., cheating, antisocial behavior, unethical workplace behavior, and organizational corruption; Bandura, 1990; Moore et al., 2012;). Indeed, previous research has shown that moral disengagement leads to unethical behaviors, such as deceptive and fraudulent activities at work, counterproductive work behaviors, and even corruption (Barsky, 2011; Fida et al., 2015; Moore, 2008; Zheng et al., 2019). In the context of the natural environment, nature disengagement frees entrepreneurs from concerns about environmental issues when evaluating potential opportunities.

Protecting the natural environment is an important endeavor and a core value of many individuals and organizations (George et al., 2016). Entrepreneurs and managers are generally taught about social and moral responsibility to make business decisions that help preserve nature (Bansal & Roth, 2000; Marques, 2016). Therefore, and somewhat obviously, perceiving an opportunity that harms nature as attractive conflicts with pro-environmental standards. However, some entrepreneurs still exploit entrepreneurial opportunities that harm the environment (Le Coz, 2016; Short, 2015). Nature disengagement can provide individuals the cognitive justification to commit actions that harm the natural environment without apparent guilt or self-sanctions. That is, nature disengagement enables entrepreneurs to accept their antienvironmental attitudes and behaviors by restructuring environmentally destructive acts, obscuring their pro-environmental agency, and/or reducing the harm of their behaviors.

Entrepreneurs experiencing nature disengagement can rely on environmental justification, euphemistic labeling, and/or advantageous comparison to restructure antienvironmental acts. Through nature disengagement, entrepreneurs displace or diffuse their responsibility in damaging the natural environment, thus “passing the buck” when considering the noneconomic losses associated with harming nature. For example, entrepreneurs polluting land and water may diffuse their responsibility by emphasizing other entrepreneurs’ similar behaviors or governments’ permission. Furthermore, entrepreneurs high in nature disengagement distort the consequences of pursuing these potentially harmful opportunities by dehumanizing critics and those suffering from environmental degradation. They may even attribute blame to these victims as a way of reducing their distress over the harmful results of their opportunity pursuit.

Entrepreneurs’ investment decisions often involve tradeoffs between economic interests and environmental sustainability. If entrepreneurs can mask the harmful environmental implications of their decisions, they can decide to pursue potential opportunities based on their own self-interests and their organization’s economic interests while still holding the conviction that their decisions are environmentally acceptable (Shepherd et al., 2013). Therefore, through nature disengagement, entrepreneurs deactivate the pro-environmental regulation process and in turn evaluate potential opportunities that harm nature as attractive. Conversely, entrepreneurs low in nature disengagement will find potential opportunities that harm nature inconsistent with their own values, thereby discouraging them from exploiting such opportunities. Furthermore, because entrepreneurs’ creative mindset helps them generate novel and useful reasons to justify decisions and behaviors that harm nature through divergent thinking and cognitive flexibility, we further propose that nature disengagement mediates the relationship between entrepreneurs’ creative mindset and their evaluations of potential opportunities that harm nature. Thus, we propose the following:

Hypothesis 2: *The greater entrepreneurs’ nature disengagement, the more favorably they assess potential opportunities that harm nature.*

Hypothesis 3: Nature disengagement mediates the effect of entrepreneurs' creative mindset on the favorability of potential opportunities that harm nature.

Overview of the Current Research

We conducted three studies to understand the impact of entrepreneurs' creativity on evaluating opportunities that harm nature through nature disengagement. The first is a pilot study, which was conducted to develop and validate a scale for our core construct—nature disengagement. Then, in Study 1, we conducted a two-wave randomized between-subject experiment with a sample of active entrepreneurs in China. We presented participants with three projects representing entrepreneurial opportunities that harm nature and asked them to evaluate each project. In Study 2, we conducted another experiment with a sample of Chinese entrepreneurs to address the limitations of Study 1 (e.g., including antienvironmental projects). These three studies jointly provide strong support to our theoretical model.

Pilot Study

Following Hinkin (1998) we first conducted a pilot study to develop and validate a scale for measuring nature disengagement. In Phase 1, we generated items for nature disengagement, assessed their content validity, and conducted an exploratory factor analysis (EFA). In Phase 2, we administered these items to two independent samples (US and Chinese samples) to assess their psychometric properties.

Phase I: Item Generation, Content Validity Assessment, and Exploratory Factor Analysis

We developed an eight-item measure of nature disengagement by adapting Moore et al.'s (2012) eight-item moral disengagement scale to describe cognitive justifications that are specific to the context of the natural environment rather than to a more general moral context. Developing a nature disengagement scale improves predictive power because this measure focuses on a more specific domain (i.e., the natural environment) rather than a general domain (Chen et al., 1998). Consistent with Moore et al. (2012), each item represented one of the eight specific mechanisms of nature disengagement (i.e., environmental justification, euphemistic labeling, advantageous comparison, displacement of responsibility, diffusion of responsibility, distortion of consequences, dehumanization, and attribution of blame). Next, we invited 13 professors and doctoral candidates in organizational behavior area to serve as expert judges to evaluate the degree to which each item matched its definition. Specifically, after providing the definition of nature disengagement, we instructed these experts to classify whether the items corresponded to nature disengagement or not. Upon classifying an item as such, they then indicated the extent to which the item corresponded to the definition (1 = *extremely unfit*; 5 = *extremely fit*; Hinkin, 1998; McAllister, 1995). All experts classified the eight items as corresponding to nature disengagement, and the average score for each item (i.e., the extent to which the item corresponded to its definition) was higher than 4. Throughout the process, we ensured that this measure had reasonable initial content validity (Hinkin, 1998). We list the full set of items in Online Appendix A.

We then administered the eight-item nature disengagement scale and four-item pro-environmental values scale to a sample of 199 employees to conduct the EFA.² These participants worked in different companies and were recruited via Sojump.com (an online survey service provider in China).³ For this sample, 57.8% of the respondents were women. On average, they were 32.5 years of age, had 16.6 years of education, and had 6.5 years of organizational

tenure. For job types, 41.7% of the respondents held technology-related jobs, 38.7% held administration-related jobs, 17.1% held marketing-related jobs, and 2.5% held other types of jobs. With regard to industry, 66.3% of the respondents worked in the manufacturing industry, 22.1% in the service industry, and 11.6% in other industries. Because nature disengagement can occur in both employment and self-employment, it was not necessary to use a sample of entrepreneurs (although we used a sample of entrepreneurs to test the hypotheses). With regard to pro-environmental values, we asked respondents to choose between two alternative statements using Shepherd et al. (2009) scale. Example statements include “Sometimes, some natural resources need to be sacrificed for important developments” and “All precautions must be taken to protect natural resources in our development efforts.” The results of the EFA supported a two-factor solution without significant cross-loadings (i.e., |cross-loadings| ranging from .02 to .29), demonstrating a distinction between nature disengagement ($\alpha = .80$) and pro-environmental values ($\alpha = .73$).⁴

Phase 2: Confirmatory Factor Analysis and Criterion-Related Validity Assessment

We conducted confirmatory factor analyses (CFAs) with a separate Chinese entrepreneur sample and a separate US employee sample to test the factor structure’s goodness of fit and to establish its criterion-related validity. Specifically, we examined the measure’s correlation with two important constructs within its nomological network (Cronbach & Meehl, 1955; Hinkin, 1998): environmentally relevant personality traits and environmentally relevant behaviors. We recruited a Chinese sample of 78 entrepreneurs from the alumni networks of several large universities in China and a US sample of 115 employees via Amazon Mechanical Turk (MTurk, a well-recognized online survey website; Buhrmester et al., 2011; Qin et al., 2018a).

For the Chinese sample of entrepreneurs, 41.0% of participants were women, their average age was 39.1 years, and 61.5% held a bachelor’s degree or higher. On average, participants had been running their business for 8.8 years, founded 1.7 businesses, and had 49.1% ownership in their business. Finally, 42.3% of the firms operated in the service industry, 16.7% in the manufacturing industry, 10.3% in the finance industry, and 30.8% in other industries. For the US sample, 44.3% of participants were women. Regarding ethnicity, 73.9% were Caucasian, 7.8% were African American, and 18.3% were some other ethnicities. On average, they were 37.3 years of age, had 15.7 years of education, and had 7.2 years of organizational tenure. For job types, 27.0% of participants held technology-related jobs, 29.6% held administration-related jobs, 10.4% held marketing-related jobs, and 33.0% held other types of jobs. With regard to industry, 8.7% of participants worked in the manufacturing industry, 62.6% in the service industry, and 28.7% in other industries.

For both samples, in addition to nature disengagement, we included scales for pro-environmental values (Category 1) and pro-environmental behavior (Category 2) in the survey. First, pro-environmental values represent the beliefs that one should treat all living creatures and natural resources with respect, such that they can be preserved and passed on to future generations (Shepherd et al., 2013). We predict that pro-environmental values will be negatively related to nature disengagement because individuals high in pro-environmental values are concerned about harm to natural environment and to take responsibility for their behavior, thereby making it less likely that they would disengage their nature-related self-regulatory function (Shepherd et al., 2009).

Second, pro-environmental behavior refers to “a mixture of self-interest (e.g., to pursue a strategy that minimizes one’s own health risk) and of concern for other people, the next generation, other species, or the whole eco-systems (e.g., preventing air pollution that may cause risks

for others' health and/or the global climate)" (Bamberg & Möser, 2007, p. 15). In practice, pro-environmental behavior is aimed at protecting the environment and reducing humans' environmental impact (e.g., recycling, energy, or water conservation; Bissing-Olson et al., 2016; Gifford, 2014). We propose that pro-environmental behavior correlates negatively with nature disengagement because high nature disengagement allows individuals to engage in behaviors that are detrimental to the natural environment without self-censure.

In this pilot study and in the main study, we measured all items on a five-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*) unless otherwise noted. We measured pro-environmental values using Shepherd et al.'s (2009) four-item scale ($\alpha = .85$ and $.83$ for the Chinese and US samples, respectively). We assessed pro-environmental behavior through five self-reported questions about how often the respondents performed various pro-environmental behaviors (1 = *never*; 5 = *always*; Schultz & Zelezny, 1998). The behaviors included recycling, conserving energy, conserving water, purchasing environmentally safe products, and using public transportation ($\alpha = .85$ and $.83$ for the Chinese and US samples, respectively).

The results of CFAs of the Chinese entrepreneur sample revealed that the hypothesized three-factor structure fit the data well ($\chi^2 = 172.64$, $df = 116$, $p < .001$; SRMR = $.06$, CFI = $.94$, TLI = $.93$) and was superior to the two-factor structure (combining nature disengagement and pro-environmental values: $\chi^2 = 309.49$, $df = 118$, $p < .001$; SRMR = $.12$, CFI = $.80$, TLI = $.77$; $\Delta\chi^2 = 136.85$, $\Delta df = 2$, $p < .001$; combining nature disengagement and pro-environmental behavior: $\chi^2 = 327.46$, $df = 118$, $p < .001$; SRMR = $.12$, CFI = $.78$, TLI = $.75$; $\Delta\chi^2 = 154.82$, $\Delta df = 2$, $p < .001$). Also, the results of CFAs of the US sample revealed that the hypothesized three-factor structure fit the data well ($\chi^2 = 137.91$, $df = 116$, $p < .10$; SRMR = $.06$, CFI = $.97$, TLI = $.96$) and was superior to the two-factor structure (combining nature disengagement and pro-environmental values: $\chi^2 = 248.68$, $df = 118$, $p < .001$; SRMR = $.09$, CFI = $.82$, TLI = $.79$; $\Delta\chi^2 = 110.77$, $\Delta df = 2$, $p < .001$; combining nature disengagement and pro-environmental behavior: $\chi^2 = 265.37$, $df = 118$, $p < .001$; SRMR = $.10$, CFI = $.79$, TLI = $.76$; $\Delta\chi^2 = 127.46$, $\Delta df = 2$, $p < .001$). Thus, these results verified the distinctiveness of nature disengagement and other related variables (i.e., pro-environmental values and pro-environmental behavior).

Furthermore, we found that the nature disengagement measure was negatively correlated to pro-environmental values ($r = -.37$ and $-.39$, $p < .001$, for the Chinese and US samples, respectively) and was negatively correlated to pro-environmental behavior ($r = -.39$ and $-.43$, $p < .001$, for the Chinese and US samples, respectively). All these relationships are in the expected direction, and none is so strong as to suggest that nature disengagement is redundant with any of the other constructs. Based on the results from the pilot study using diverse samples (a Chinese sample and a US sample as well as an entrepreneur sample and an employee sample), our originally developed eight-item scale of nature disengagement has acceptable psychometric properties and represents a parsimonious measure.

Study I Method

To test our hypotheses, we conducted a randomized between-subject experiment using a sample of active entrepreneurs in China. Experimental designs have been widely adopted in strategy and entrepreneurship research as they can test causal hypotheses in a way that is not possible with correlational data (e.g., Cain et al., 2015; Li et al., 2018; Shepherd et al., 2013).

Participants

Our sampling frame for this study included entrepreneurs with new ventures in industrial parks located in southern China and entrepreneurs who were alumni of a large southern Chinese

university and had recently started their own businesses. This sample of entrepreneurs is particularly appropriate for our research because they had recently begun exploiting new business opportunities and had ample chances to evaluate the attractiveness of various potential opportunities (Rice, 2002; Shepherd et al., 2013). We obtained a list of 1,800 entrepreneurs' names and contact information from the administrative offices of the industrial parks and the alumni office of the university. From this population, we randomly selected 900 individuals as the sampling frame for this study. The entrepreneurs were first contacted by phone over a 1-month period. We explained that the purpose of the study was to understand their opinions on entrepreneurship and their life experiences as entrepreneurs, and we informed them that all individual responses would be kept confidential and anonymous. Prior research has shown that when anonymity is assured, data are generally less affected by social desirability (Nederhof, 1985). Participation was voluntary, and all participants received a gift (two books on entrepreneurship theory and practice with the authors' signatures). If an entrepreneur agreed to participate, we sent him or her an electronic invitation that provided links to the online research instruments.

We used two-wave data collection to reduce common method biases (Podsakoff et al., 2012). At Time 1, participants were invited to report demographics. Two weeks later (Time 2), we invited them to take part in a between-subject experiment and fill out a post-experiment questionnaire. Because the data-collection instruments used in this study were in Chinese, back-translation was performed to ensure the measures in the Chinese and English versions were equivalent (Brislin, 1980). For each round of data collection, we gently reminded the entrepreneurs who had not participated in the survey 1 week after the initial invitation (to remind them of the importance of their participation) and again provided them with the links to the online instruments.

From the first wave, we received 297 valid responses, and from the second wave, we received 152 valid responses. The final sample consisted of 136 entrepreneurs who participated in both waves, which represented a response rate of 15.11%. We examined whether respondents and nonrespondents differed significantly on individual or firm characteristics using *t*-tests. Specifically, two tests indicated that response bias was unlikely. First, a comparison of respondents in the contact sample and respondents in our final sample revealed no significant differences in firm size. Second, there were no significant differences in mean scores for individual (e.g., gender, age, or entrepreneurial tenure) or firm characteristics (e.g., industry) when comparing the Time 1 sample and the Time 2 sample. These results provided consistent evidence across multiple variables that respondents and nonrespondents came from the same population (detailed results are available from the authors upon request). The final sample was distributed evenly across experimental conditions.

In the final sample, 30.9% of participants were women, their average age was 35.4 years, 44.8% held a master's degree or higher, and 55.9% had overseas experience (e.g., living, studying, and traveling). On average, participants had been running their business for 5.8 years, founded 1.8 businesses, and had 44.5% ownership in their business. Finally, 53.7% of the firms operated in the service industry, 11.8% in the manufacturing industry, 10.3% in the finance industry, and 24.3% in other industries.

Procedures and Experimental Design

In the first wave of data collection, we measured entrepreneurs' demographics. In the second wave, entrepreneurs were invited to participate in a between-subject experiment, and we randomly assigned them to one of two conditions: the creative mindset condition ($n = 68$) and the control condition ($n = 68$).

Following previous studies that have successfully used priming to activate a creative mindset (Fitzsimons et al., 2008; Gino et al., 2011; Sassenberg & Moskowitz, 2005), we used

a scrambled sentence test—a widely acknowledged method to manipulate people’s momentary mindset (Bargh & Chartrand, 1999; Chartrand & Bargh, 1996). Specifically, we instructed participants to compose grammatically correct four-word sentences (e.g., “My view is unconventional”) from a collection of five randomly positioned words (e.g., “view,” “drinking,” “my,” “unconventional,” and “is,”). For those in the creative-mindset condition, eight of the 10 sentences included words related to creativity (“unconventional,” “original,” “novel,” “creativity,” “ingenious,” “ideas,” “innovative,” and “imaginative”); for those in the control condition, we did not include any words related to creativity. Following prior studies (e.g., Masicampo & Baumeister, 2011; Qin et al., 2020a), after the priming task, we employed a 2 min filler task to distract participants (i.e., reporting their job characteristics and typical weekday). Then, in a context of an ostensibly independent study, participants were invited to engage in the second part of the study, which included the nature disengagement scale.

We next examined participants’ evaluations of opportunities that harm nature. They were asked to evaluate three business opportunities related to three different environmental issues: air pollution, water pollution, and animal cruelty. We chose these three environmental issues for two main reasons. First, conceptually, all three are core normative environmental issues that are highly relevant to individuals’ values and demand responses from firms (Bansal, 2003). Second, empirically, air pollution and water pollution are among the top environmental issues addressed in prior research on environmental initiatives (i.e., Anderson & Bateman, 2000). Furthermore, as suggested by the corporate environmental paradigm (Gladwin et al., 1995), humans and animals are often considered equal members of the natural environment. Indeed, as noted by the World Animal Protection, protecting animals, especially endangered species, is an urgent mission and should be at the forefront of the global agenda. Accordingly, we selected air pollution, water pollution, and animal cruelty issues for our experimental scenarios.

Following Keh et al. (2002), we created a cover scenario in which an experienced manager (i.e., Yang Liu) is considering start-ups and has three potential entrepreneurship proposals. In line with prior research (e.g., Friedman et al., 2006; Qin et al., 2018b), we intentionally chose gender-neutral names (i.e., Yang Liu in the cover letter and Ge Wang in Project 1) in the Chinese context to avoid issues related to the differential effects of gender on opportunity evaluation. Furthermore, according to Keh et al. (2002), a common context helps people avoid response bias caused by different assumptions about the scenarios used for experiments. Thus, we made several parameters of the experiment explicit before participants made their evaluations, including “there is positive feedback from some potential customers and some associates who know the industries well,” “these entrepreneurial projects would be profitable,” and “projects still have some competitive advantages.” We constructed and adapted the common context from Keh et al. (2002) to create the following: Yang Liu is an experienced manager who has been working for a small- to medium-sized local company. Recently, Yang Liu has been planning to start a business. Yang now has three entrepreneurial ideas that have some competitive advantages but still need to be further evaluated (the full context is listed in Online Appendix B).

Participants then read three projects and evaluated their attractiveness. Following Shepherd et al. (2013), we added specified harm to the natural environment in each entrepreneurial project (the three full projects are listed in Online Appendix C), as summarized below. We balanced the order of the three projects, and participants evaluated each project.

Project 1: Refrigeration Technology Project (Air Pollution)

It describes an entrepreneurial idea that commercializes a newly innovated refrigeration technology that is more cost effective than traditional refrigeration. However, this project may

cause air pollution. Specifically, a chemistry test suggests that when heated, the new refrigerant will generate a type of greenhouse gas that is 250 times more effective than CO₂ in storing heat. What is more, a factory producing the new refrigerant would lead to a 5% increase in temperature annually in affected areas.

Project 2: Tourism Project (Water Pollution)

It describes an entrepreneurial idea for constructing a resort hotel and relevant facilities in a local lake district. However, the project may pollute local rivers. Specifically, domestic sewage created from the hotel can lead to water eutrophication, which would further upset the ecological balance in the local river.

Project 3: Indoor Polar Museum Project (Animal Cruelty)

It describes an entrepreneurial idea to build an indoor polar culture museum inside a large shopping mall. The museum will host a polar bear and penguin show and will build an Eskimo life experience house. However, this project would upset the animals purchased for the museum as they would be locked inside the museum all the time.

Finally, participants filled out a post-experiment questionnaire, including questions reflecting awareness of the priming (Bargh & Chartrand, 2000). We were prepared to exclude those who indicated awareness of the priming or the purpose of the experiment from further analysis (e.g., “The scrambled sentence test affects participants’ opportunity evaluation”), but we did not need to exclude any participants for this reason.

Measures

Opportunity Evaluation

We employed the three-item scale of opportunity evaluation developed by Keh et al. (2002) to capture the extent to which participants viewed each project as an opportunity. Keh et al. (2002) developed these items to capture the perceived desirability and feasibility of opportunities. Specifically, for each project, participants rated the following statements: “I consider this business an opportunity,” “This business is worth considering,” and “This business is feasible given the situation” ($\alpha = .88, .89, \text{ and } .92$ for Projects 1, 2, and 3, respectively).

Entrepreneurs’ Creative Mindset

We represented entrepreneurs’ creative mindset as a dichotomous indicator reflecting the experimental manipulation described above. Entrepreneurs’ creative mindset took the value of 1 for the creative mindset condition and 0 for the control condition.

Nature Disengagement

We measured nature disengagement with the eight items developed and validated in our pilot study. Participants were instructed to rate the extent to which they agreed with each item right now ($\alpha = .94$).

Manipulation Check

To check the effectiveness of our manipulation, we assessed the creativity triggered by the prime using the Dunker Candle Problem (Dunker & Lees, 1945). Specifically, we presented participants a picture containing a candle, a pack of matches, and a box of thumbtacks, all of which were placed on a table next to a cardboard wall. Participants were asked to figure out within 3 min how to affix the candle to the cardboard wall and light it such that the candle wax would not drop onto the table or the floor. One of the solutions is to empty the box of thumbtacks, use the

Table 1. Means, Standard Deviations, and Correlations for the Variables in Study 1.

Variable	Mean	SD	1	2	3	4
1. Entrepreneurs' creative mindset	0.50	0.50				
2. Entrepreneurs' nature disengagement	2.07	0.73	.23**			
3. Opportunity evaluation in Project 1	2.77	0.95	.22**	.42***		
4. Opportunity evaluation in Project 2	2.74	0.93	.19*	.46***	.42***	
5. Opportunity evaluation in Project 3	2.52	0.96	.04	.49***	.53***	.33***

Note. $N = 136$. * $p < .05$. ** $p < .01$. *** $p < .001$.

thumbtacks to affix the box to the cardboard wall, place the candle into the box, and light the candle using the match. Participants who came up with correct solutions were considered to have higher creativity as they were able to perceive that the box of thumbtacks could function as a stand, and this process involves the ability to perceive that objects can perform atypical functions (Duncker & Lees, 1945; Maddux & Galinsky, 2009).

Analytical Strategy

We employed ordinary least squares regression models to test the main effect of entrepreneurs' creative mindset (Hypothesis 1), and the mediating effect of nature disengagement (Hypotheses 2 and 3). We also used RMediation (Tofighi & MacKinnon, 2011) to test the indirect effect (Hypothesis 3).

Study 1 Results

Efficacy of Manipulation Check

The results of the creative mindset manipulation revealed that there were significantly more participants who solved the candle task correctly in the creative mindset condition (48.5%) than in the control condition (30.9%), $\chi^2(1, N = 136) = 4.42, p < .05$. These results indicated that our manipulation was successful.

Tests of the Hypotheses

Table 1 presents the descriptive statistics and a correlation matrix for the variables in Study 1.

As indicated by the results of Model 1 in Table 2, entrepreneurs' creative mindset had a positive coefficient ($\gamma = .33, p < .01$; Cohen's $d = .46$), indicating that entrepreneurs' creative mindset was positively related to nature disengagement. This finding provided support for Hypothesis 1.

In Table 2, Model 3 showed the effect of nature disengagement on opportunity evaluation in Project 1; the coefficient was significant and positive ($\gamma = .50, p < .001$). Model 5 contained the coefficient from regressing nature disengagement on opportunity evaluation in Project 2. The coefficient was also positive and significant ($\gamma = .55, p < .001$). Similarly, Model 7 showed that the effect of nature disengagement on opportunity evaluation in Project 3 was positive and significant ($\gamma = .66, p < .001$). These findings indicated that the extent of entrepreneurs' nature disengagement was positively related to the favorability of potential opportunities that harm nature, which supported Hypothesis 2.

We further applied RMediation (Tofighi & MacKinnon, 2011) to test the indirect effects of nature disengagement in all three projects. The results indicated that the indirect effects of

Table 2. the Effect of Entrepreneurs' Creative Mindset on Entrepreneurs' Nature Disengagement and Opportunity Evaluation in the Three Projects in Study 1.

Variables	Nature disengagement	Opportunity evaluation in project 1		Opportunity evaluation in project 2		Opportunity evaluation in project 3	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Entrepreneurs' creative mindset	0.33** (0.12)	0.42** (0.16)	0.25 (0.15)	0.35 ^c (0.16)	0.17 (0.15)	0.08 (0.16)	-0.14 (0.15)
Entrepreneurs' nature disengagement			0.50*** (0.10)		0.55*** (0.10)		0.66*** (0.10)
Constant	1.90*** (0.09)	2.56*** (0.11)	1.60*** (0.22)	2.56*** (0.11)	1.51*** (0.22)	2.48*** (0.12)	1.23*** (0.22)
R ²	.05	.05	.19	.04	.21	.00	.24
ΔR ²			.14***		.17***		.24***
F	7.35**	7.03**	15.96***	4.99*	18.21***	0.26	21.22***

Note. $N = 136$. Standard errors in parentheses. ΔR^2 was calculated based on the parameters in Model 2, Model 4, and Model 6, respectively. * $p < .05$. ** $p < .01$. *** $p < .001$.

entrepreneurs' creative mindset on opportunity evaluation via nature disengagement were significant for all three projects. Specifically, the indirect effects were .17 (95% confidence interval [CI] = .04, .32 [not containing 0] for Project 1), .18 (95% CI = .05, .34 [not containing 0] for Project 2), and .22 (95% CI = .06, .40 [not containing 0] for Project 3). These findings indicated that nature disengagement mediated the effect of entrepreneurs' creative mindset on the assessed attractiveness of potential opportunities that harm nature. Thus, these findings supported Hypothesis 3.

Supplementary Analyses

To further ensure the robustness of these results, we conducted a series of supplementary analyses. First, we included a variety of control variables, despite the fact that control variables are theoretically superfluous in experiments. That is, we re-ran the tests above with the addition of controls for entrepreneurs' demographic (e.g., gender, age, and education) and entrepreneurial characteristics (e.g., entrepreneurial tenure, number of entrepreneurial businesses, and ownership). These supplementary results were comparable in terms of regression coefficients and significance levels to those reported above (detailed results are available from the authors upon request). Second, it is theoretically plausible that creative entrepreneurs may be able to find solutions to reduce negative impacts on the environment and in turn evaluate antienvironmental projects higher. To test this alternative explanation, we included *self-efficacy for solving environmental problems*. Self-efficacy for solving environmental problems represents an individual's belief that he or she is able to solve environmental problems. It is a specific type of self-efficacy like creative self-efficacy and voice self-efficacy. We adapted Tierney and Farmer's (2002) four-item creative self-efficacy scale to measure self-efficacy for solving environmental problems. Two example items are "I have confidence in my ability to solve environmental problems" and "I am good at finding ways to solve environmental problems" ($\alpha = .83$). The supplementary analyses revealed that entrepreneurs' creative mindset was not significantly related to self-efficacy for solving environmental problems ($\gamma = .08, ns$). These results help rule out the alternative explanation that creative entrepreneurs can find solutions to reduce harm to nature while still exploiting antienvironmental opportunities.

A strength of Study 1 is that it demonstrated causal relationships between creative mindset and opportunity evaluation by active entrepreneurs. Moreover, the design of the three anti-environmental projects focusing on air pollution, water pollution, and animal cruelty provided a comprehensive picture about the impact of entrepreneurs' creativity on different opportunities that harm nature. However, Study 1 only considered anti-environmental opportunities, but we also want to know whether creative entrepreneurs opt for alternative opportunities like neutral projects or pro-environmental projects. Also, Study 1 only measured opportunity evaluation, so its link to entrepreneurial behaviors needs to be further established. We addressed these issues in Study 2.

Study 2 Method

Participants

We recruited our participants for Study 2 through alumni networks of several large universities in China. We initially invited 185 entrepreneurs to participate the experiment. From the first wave, we received 159 valid responses, and from the second wave, we received 121 valid responses. The final sample consisted of 116 entrepreneurs who participated in both waves, representing a response rate of 62.7%. Similarly, the results of t-tests revealed that respondents and nonrespondents did not differ significantly on individual or firm characteristics. In the final sample, 34.5% of participants were women, their average age was 38.9 years, 37.1% held a master's degree or higher, and 54.3% had overseas experience. On average, participants had been running their business for 8.7 years, founded 1.9 businesses, and had 42.9% ownership in their business. Finally, 56.9% of the firms operated in the service industry, 8.6% in the manufacturing industry, 8.6% in the finance industry, and 25.9% in other industries.

Procedures and Experimental Design

Study 2 was similar to Study 1 (e.g., involving two-wave data collection to reduce common method biases) with two main differences. First, in addition to an anti-environmental project, we added one neutral project and one pro-environmental project. The order of the three projects was counterbalanced. To make the length of the experiment manageable, we used only one of the anti-environmental projects (i.e., refrigeration technology project [air pollution]). Similar to the anti-environmental project, the neutral project describes an entrepreneurial idea that commercializes a newly innovated refrigeration technology that is more cost effective than traditional refrigeration. Exploiting the opportunity would not have any (negative or positive) impact on the natural environment in the local setting or other parts of the world. The pro-environmental project also describes an entrepreneurial idea that commercializes a newly innovated refrigeration technology that is more cost effective than traditional refrigeration. Additionally, this project may contribute to reducing global warming. Specifically, a chemistry test suggests that one of the waste products of this project can diminish CO₂ by up to 30%. What is more, temperature increases will be diminished by up to 5% annually in areas where the waste product is emitted.

Second, we added more measures in Study 2. Specifically, in addition to opportunity evaluation, we included opportunity exploitation, which captures more behavior-related investment in the opportunity. We measured opportunity exploitation using four items adapted from Choi and Shepherd (2004) and Grichnik et al. (2010). An example item is "I am willing to invest my savings to increase the capital for this new opportunity" (anti-environmental project: $\alpha = .90$; neutral project: $\alpha = .87$; pro-environmental project: $\alpha = .92$). We also measured ambition and need for achievement in the first wave of Study 2 (i.e., ambition was measured using the two-item scale

Table 3. Means, Standard Deviations, and Correlations for the Variables in Study 2.

Variable	Mean	SD	1	2	3	4
1.Entrepreneurs' creative mindset	0.50	0.50				
2.Entrepreneurs' nature disengagement	2.19	0.83	.26**			
3.Opportunity evaluation in the antienvironmental project	2.86	1.02	.24**	.42***		
4.Opportunity evaluation in the neutral project	3.85	0.84	.01	-.01	.27**	
5.Opportunity evaluation in the pro-environmental project	4.23	0.82	-.05	-.12	.07	.69***

Note. $N = 116$. * $p < .05$. ** $p < .01$. *** $p < .001$.

developed by Judge and Kammeyer-Mueller (2012) [$\alpha = .79$], and need for achievement was measured using the four-item scale developed by Liu et al. (2010) [$\alpha = .70$]). We used the same measures for nature disengagement ($\alpha = .92$), and opportunity evaluation (antienvironmental project: $\alpha = .84$; neutral project: $\alpha = .93$; pro-environmental project: $\alpha = .93$) and the same manipulation check as in Study 1.

Study 2 Results

Efficacy of the Manipulation Check

The results of the manipulation check revealed that more participants from the creative mindset condition (36.2%) correctly solved the candle task than participants in the control condition (17.2%), $\chi^2(1, N = 116) = 5.33, p < .05$. These results indicated that our manipulation was successful.

Tests of the Hypotheses

Table 3 presents the descriptive statistics and correlation matrix for the variables in Study 2.

As indicated by the results of Model 1 in Table 4, entrepreneurs' creative mindset was positively related to nature disengagement ($\gamma = .43, p < .01$; Cohen's $d = .53$). Thus, Hypothesis 1 was supported in Study 2.

In Table 4, Model 3 showed that the effect of nature disengagement on opportunity evaluation in the antienvironmental project was significant and positive ($\gamma = .47, p < .001$). However, the effects of nature disengagement on opportunity evaluation in the neutral project ($\gamma = -.01, ns$; Model 5) and in the pro-environmental project ($\gamma = -.11, ns$; Model 7) were not significant. Furthermore, the results of RMediation (Tofighi & MacKinnon, 2011) indicated that the indirect effects of entrepreneurs' creative mindset on opportunity evaluation via nature disengagement were significant for the antienvironmental project (estimate = .20; 95% CI = .05, .39 [not containing 0]) but were not significant for the neutral project (estimate = -0.004 ; 95% CI = $-.10, .09$ [containing 0]) or the pro-environmental project (estimate = $-.05$; 95% CI = $-.16, .04$ [containing 0]). Thus, Hypotheses 2 and 3 were supported in Study 2. Also, these findings suggested that creative mindset and nature disengagement only promoted opportunity evaluation in the anti-environmental project but not in the neutral or pro-environmental project.

Supplementary Analyses

We conducted a series of supplementary analyses to test the robustness of our findings. First, similar to Study 1, we re-ran the tests above with the addition of controls for entrepreneurs'

Table 4. The Effect of Entrepreneurs' Creative Mindset on Entrepreneurs' Nature Disengagement and Opportunity Evaluation in the Three Projects in Study 2.

Variables	Nature disengagement		Opportunity evaluation in the anti-environmental Project		Opportunity evaluation in the neutral project		Opportunity evaluation in the environmental project	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	
Entrepreneurs' creative mindset	0.43 ^{**} (0.15)	0.49 ^{**} (0.18)	0.29 (0.18)	0.02 (0.16)	0.02 (0.16)	-0.08 (0.15)	-0.03 (0.16)	
Entrepreneurs' nature disengagement			0.47 ^{***} (0.11)		-0.01 (0.10)		-0.11 (0.10)	
Constant	1.98 ^{***} (0.11)	2.62 ^{***} (0.13)	1.68 ^{***} (0.24)	3.84 ^{***} (0.11)	3.87 ^{***} (0.22)	4.26 ^{***} (0.11)	4.48 ^{***} (0.22)	
R ²	0.07	0.06	0.20	0.000	0.000	0.002	0.01	
ΔR ²			0.14 ^{***}		0.000		0.01	
F	8.06 ^{**}	6.98 ^{**}	13.85 ^{***}	0.01	0.01	0.27	0.81	

Note. N = 116. Standard errors in parentheses. ΔR² was calculated based on the parameters in Model 2, Model 4, and Model 6, respectively. *p < .05. **p < .01. ***p < .001.

demographic and entrepreneurial characteristics. These results were comparable in terms of regression coefficients and significance levels to those reported above. Second, we added a measure for entrepreneurial behavior—opportunity exploitation, which refers to commencing immediate full-scale operations on the product or service arising from the opportunity. Opportunity exploitation entails significant irreversibility in terms of product model and facilities (Choi & Shepherd, 2004; Grichnik et al., 2010; Welpel et al., 2012). Therefore, in this study, we asked about respondents' willingness to invest resources irreversibly. We conducted the same analyses using opportunity exploitation as the alternative dependent variable. The results revealed that the effect of nature disengagement on opportunity exploitation in the antienvironmental project was significant and positive ($\gamma = .65, p < .001$); however, this effect was not significant in the neutral project ($\gamma = .15, ns$) or in the pro-environmental project ($\gamma = -.08, ns$). These results suggested that the hypothesized effects held for entrepreneurial behaviors.

Finally, we further explored whether our effects would hold when controlling for ambition and need for achievement. We chose these two characteristics because the main characteristics of ambition and need for achievement include showing willingness to take risk and confront difficulties to accomplish challenging tasks (Judge & Kammeyer-Mueller, 2012; Liu et al., 2010), and these characteristics share some conceptual overlap with creative mindset. The supplementary analyses revealed that when controlling for the effects of ambition and need for achievement, all the hypotheses remained supported. In brief, entrepreneurs' creative mindset was significant in explaining nature disengagement (controlling for ambition: $\gamma = .43, p < .01$; controlling for need for achievement: $\gamma = .43, p < .01$). Furthermore, the effect of nature disengagement on opportunity evaluation in the antienvironmental project was significant and positive (controlling for ambition: $\gamma = .47, p < .001$; controlling for need for achievement: $\gamma = .47, p < .001$). However, the effect of nature disengagement on opportunity evaluation in the neutral project (controlling for ambition: $\gamma = -.01, ns$; controlling for need for achievement: $\gamma = -.01, ns$) and the pro-environmental project was not significant (controlling for ambition: $\gamma = -.11, ns$; controlling for need for achievement: $\gamma = -.01, ns$). Thus, our findings are unique to entrepreneurs' creativity and cannot be substituted by ambition and need for achievement. The results of supplementary analyses are available from the authors upon request.

Discussion

Traditional wisdom suggests that creativity plays an important role in entrepreneurs' identification and exploitation of opportunities. In this study, we look at the other side of the creativity story and aim to uncover the dark side of entrepreneurs' creative mindset, which leads to the pursuit of potential opportunities that harm nature. Building on moral disengagement theory (Bandura, 1991), we theorize that entrepreneurs' creative mindset enables them to generate novel justifications for antienvironmental behaviors (i.e., nature disengagement) and thus assess potential opportunities that harm nature more favorably. The results from two randomized between-subject experiments among entrepreneurs supported this theoretical model.

Implications for Theory

This study makes several important theoretical contributions to the entrepreneurship and creativity literatures. First, our findings suggest that entrepreneurs' creative mindset, though essential in opportunity identification and innovation (Ahlin et al., 2014; Gielnik et al., 2012), can have a dark side when it comes to environmental sustainability issues. Entrepreneurs with a creative mindset may find it easier to generate justifiable reasons for environmental harm related to an opportunity and thus assess such potential opportunities more favorably. Therefore, while

entrepreneurs' creativity is helpful in identifying opportunities that mitigate environmental degradation (Dean & McMullen, 2007), it can also distort entrepreneurs' evaluations of opportunities related to environmental sustainability. This finding deepens our understanding about the 2 sided role of entrepreneurial creativity for opportunities that affect nature.

Second, this study extends the literature of creativity and contributes to the literature of entrepreneurship by uncovering nature disengagement as a mediator in the relationship between entrepreneurs' creative mindset and their evaluations of entrepreneurial opportunities. On one hand, as environmental decline has become a grand challenge for management scholars, research in entrepreneurship has tried to uncover the causes of antienvironmental behaviors that harm nature and has looked for potential solutions (Bohnsack et al., 2014; Dean & McMullen, 2007; George et al., 2016; Hall et al., 2010). On the other hand, the theory of moral disengagement has been widely used in the creativity literature to explain the unethical attitudes and behaviors caused by creativity in organizations (Gino & Ariely, 2012; Moore et al., 2012). However, these two literature streams have remained disconnected as entrepreneurship research has largely overlooked the dark side of entrepreneurs' creativity, especially its consequences for the natural environment. By using moral disengagement (Bandura, 1991) to explore the dark side of creativity at the intersection of entrepreneurship and environmental degradation (George et al., 2016; Shepherd et al., 2013), this study increases our understanding of how having a creative mindset influences entrepreneurs' evaluation of environmental degradation considerations in the process of opportunity evaluation (Keh et al., 2002; Shane & Venkataraman, 2000). While prior studies have suggested that entrepreneurs' evaluations of opportunities largely depend on their cognitive structure (Gruber et al., 2015; Gupta et al., 2013; Welpe et al., 2012), we demonstrate that creative entrepreneurs make decisions that violate their own rules and values through moral disengagement. Therefore, our study bridges the literatures on creativity, moral disengagement, and entrepreneurship.

Third, our study extends the application of moral disengagement to environment-related corporate social responsibility (i.e., sustaining environmental development; Bansal, 2003). Previous studies on organizations' environmental responsibility have largely focused on business values and ethics, legitimacy seeking, and ecological responsiveness as motivations for "going green" (Bansal & Roth, 2000; Wang et al., 2016). Complementing this line of research, in the current study, we theorize and find that nature disengagement enables entrepreneurs to violate their values and beliefs about corporate social responsibility and commit harmful behaviors to the environment while remaining free from the guilt and self-censure that would normally arise when individuals violate their moral standards. These findings help us understand organizational behaviors that harm nature through decision makers' disengagement processes. For example, although previous studies have emphasized personal ethics and values in sustaining environmental development (Anderson & Bateman, 2000; Bansal, 2003), we illustrate how individuals can act to cause harm to nature through nature disengagement despite such actions appearing to violate their personal ethics and values. Therefore, this study identifies nature disengagement as an important factor that influences organizations' environment-related corporate social responsibility and helps extend the application of moral disengagement to the environmental domain.

Implications for Practice

Our study also has important practical implications for policymakers and entrepreneurs. First, policymakers should scrutinize the environmental impacts of creative entrepreneurs. In recent years, governments have introduced various policies to encourage entrepreneurial firms (Dean & McMullen, 2007; Liu et al., 2019; Xu et al., 2017). Indeed, compared with established firms, entrepreneurial firms are less bureaucratic and thus nimbler at adapting to the changing

competitive environment, often being considered the driving force of societal innovation. As such, when selecting government-subsidized innovation projects, policymakers typically focus on entrepreneurs' capabilities, including their creativity, assuming this creativity is directly linked to projects' economic benefits. However, our finding that entrepreneurs' creativity can have social costs suggests that policymakers should not be overly optimistic about the relationship between entrepreneurs' creativity and sustainable societal growth.

Second, by revealing the dark side of creativity, our study advises entrepreneurs to be more careful when applying their creativity to assessments of entrepreneurial opportunities. Entrepreneurs should be particularly cautious of projects that are harmful to the natural environment because entrepreneurial firms must attend to stakeholders' demands to compensate for their lack of legitimacy (from being new and/or novel), and environmentalists are undoubtedly one powerful stakeholder group influencing firm activities.

Strengths, Limitations, and Future Directions

Through our rigorous experimental design, we provide deeper insights into the mechanism through which entrepreneurs' creative mindset influences the assessed attractiveness of potential opportunities that harm nature. However, our study also has some limitations that future research could address.

First, one limitation of experiments is the generalizability of the results as they are conducted in controlled settings. We minimized this potential limitation by conducting our studies with active entrepreneurs—individuals who had recently founded their own ventures. Nevertheless, future research would benefit by further examining whether the causal relationships identified in this study manifest in a natural setting. Also, while we employed an experimental design in this study, mono-method bias is not a major concern because we combined the experiments with a survey and therefore used multiple methods for data collection. Furthermore, we conducted two studies to test our predictions. With that said, we welcome multi-methods to replicate (and perhaps extend) our findings. Relatedly, this study focuses only on the evaluation of opportunities, not on actual entrepreneurial behaviors. Although we used opportunity exploitation as an alternative dependent variable, we did not capture actual opportunity-exploitation behavior. Future research may consider designing a real monetary scheme to conduct an experiment in which actual entrepreneurial behaviors are captured as a means to further replicate our findings.

Second, we used MTurk and similar websites to collect data to validate the nature disengagement scale. Although some scholars have highlighted the benefits of this source of data, especially for replicating findings and validating scales (Buhrmester et al., 2011; Ju et al., 2019), there is some debate about their use. Accordingly, we took a number of steps to ensure data quality and used samples of active entrepreneurs to validate the scale. Thus, our use of MTurk and similar websites is not an issue in this research. However, we welcome future research to further validate our scale with other samples and in other contexts.

Third, while this research uncovers the intended drawback of entrepreneurs' creativity, it will be valuable to explore how to buffer this detrimental effect. Regulations on environmental protection may be an important boundary condition for the detrimental impact of entrepreneurs' creativity. Regulations on environmental protection vary across countries in the world. Compared to countries with loose environmental regulations, in countries with strict environmental regulations, a highly creative entrepreneur may not assess potential opportunities that harm nature so favorably since pursuing such projects will be difficult to justify. Also, entrepreneurs' pro-environmental traits may be considered, as they can influence the disengagement processes (Bandura et al., 1996). Therefore, it would be a promising direction to identify the

boundary conditions of the dark side of creativity in entrepreneurship, which will shed further light on how the downfalls of entrepreneurs' creativity can be avoided while the rewards can be enjoyed.

Relatedly, another limitation pertains to contextual generalizability (Tsang & Williams, 2012) as participants from both main studies were from a single country—China. Given our focus on the dark side of entrepreneurs' creativity, this study's theoretical framework is not culturally specific. Although our findings are consistent with our general theorizing, the effect sizes may be different across cultures. We hope future research explores these issues in other societies.

Finally, we focus on only one potential cost of entrepreneurs' creativity—namely, assessments of opportunities that harm nature. It is possible, however, that entrepreneurs' creative mindset can generate other costs to society as well. For example, entrepreneurs' creative mindset may not only facilitate nature disengagement but may also promote a high level of moral disengagement in general, which may in turn provide justifications to engage in other forms of unethical behavior. We hope that future research will explore other potential manifestations of the dark side of a creative mindset in the entrepreneurial context. Relatedly, the emerging stream of research on environmental entrepreneurship (Wry & York, 2017; York et al., 2016), which is defined as “the use of both commercial and ecological logics to address environmental degradation through the creation of financially profitable organizations, products, services, and markets” (York et al., 2016, p.), suggests that environmental entrepreneurs are motivated by identities rooted in both commercial and ecological logics and prioritize commercial and/or ecological venture goals according to the strength and priority when combining these two identity types (i.e., whether the entrepreneur holds an identity as commercial dominant, ecological dominant, or blended) . Future studies may integrate this line of research by considering entrepreneurs' identities rooted in commercial and ecological logics.

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Notes

1. It is worth noting that, whereas past work has tended to treat disengagement as a stable trait-like construct (Detert et al., 2008; Moore et al., 2012), recent psychological and management research has started to conceptualize disengagement as a state-like construct with momentary fluctuations (e.g., Kish-Gephart et al., 2014; Moore, 2015). Moore (2015) argues that, “consistent with social cognitive perspectives on personality as ‘dynamic dispositions,’ Bandura views the self-regulation of moral conduct and the tendency to morally disengage as part of a system of ‘triadic reciprocal causation,’ in which behavior, cognition, and environmental influences all operate as continuously interacting determinants of each other. This perspective opens up the possibility that one’s context can influence one’s tendency to morally disengage” (p. 200). The notion that disengagement can be conceptualized as a state-like construct has been further supported by recent studies. For example, Kish-Gephart et al. (2014) suggest that disengagement can be a temporary state activated by external influences. Supporting this claim, they found that situations with many opportunities for self-interested gain triggered a high level of moral disengagement. Finally, personality psychologists have started suggesting that most personalities (including disengagement) can be viewed as either trait-like or state-like constructs (Grubbs & Exline, 2016). All in all, we conclude that while some individuals might be higher on a general trait-like propensity for nature disengagement, there are strong theoretical reasons to suggest that nature disengagement—as a specific type of disengagement—can also be viewed as a state-like construct.
2. We included pro-environmental values in the EFA, as it is one of core environment-related values and theoretically related to nature disengagement. It is important to distinguish nature disengagement from it empirically.
3. We took measures to ensure that the data generated through the MTurk and Sojump platforms were of high quality. Specifically, following the recommendations of Meade and Craig (2012), we added an attention-check item (i.e., “Please respond with ‘strongly agree’”) in the survey to exclude participants who responded carelessly. It is reasonable to infer that those who failed to choose “strongly agree” for this question might not have read the other questions carefully. To guarantee the quality of the data, we excluded five respondents in the Sojump sample ($N = 204$, the final $N = 199$) and three respondents in the MTurk sample ($N = 118$, the final $N = 115$) who failed the attention check. It is worth noting that including all the respondents yielded similar results compared to those reported in the main text (detailed results are available from the authors upon request).
4. As some of the eight mechanisms of nature disengagement are closely related to each other (Bandura et al., 1996; Moore et al., 2012), we further conducted an EFA of the eight items of nature disengagement. The results of the EFA revealed that with an eigenvalue larger than 1 as the threshold, only one factor was extracted, suggesting a single-factor structure. Furthermore, our theorizing did not lead us to hypothesize that entrepreneurs’ creative mindset has different impacts on the different dimensions of nature disengagement or that the different dimensions of nature disengagement have different impacts on opportunity evaluations. Based on the rule of parsimony and the results of the EFA and in line with moral disengagement studies (Moore et al., 2012), we used a single-factor structure for this newly developed measure of nature disengagement.

Supplemental Material

Supplemental material for this article is available online.

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