Feeling crowded? Get creative: Crowding cues lead to increases in creative thinking

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Introduction

While mortality threats have heavily influenced life-history evolution, so too have pressures posed by high population density.

Resource competition in crowded environments promotes:

1. Adopting *slower life history strategies* to increase competiveness for existing resources (Reznick, Bryant, & Bashey, 2002).
   - ***Ex.*** Crowding cues lead people to favor investing more in their own development (*e.g.* seeking higher education), and in their children's (Sng, Neuberg, Varnum, & Kenrick, 2017).
2. An increase in *divergent* traits, as organisms search for new resource niches to exploit (Bush, 1975; Grant, 1972).
   - ***Ex.*** Humans' high intelligence may have developed, in part, to help generate novel solutions to social resource competition (Flinn, Geary, & Ward, 2005).

Research Question: is creativity - a form of divergent thinking - attuned to fluctuations in population density?

- Do crowding cues prompt increases in creative thinking?
- Do resource competition perceptions mediate these increases?

Study 1

Goal: Examine how crowding cues affect openness, a personality trait linked to creativity (McCrae, 1987; Silvia et al., 2009).

Hypothesis: Crowding cues should lead people to report heightened openness, relative to control cues.

Method

1. TCU undergraduates (n = 145) viewed a randomly assigned slideshow about population increases or modern architecture
2. Next, they completed the Ten Item Personality Measure (TIPI: Gosling, Rentfrow & Swann, 2003)

Results

Table 1. TIPI scores by priming condition

	Crowding		Architecture		Results		
	M	*SD*	*M*	*SD*	*t-value*	*d*	*95% CI*
Openness	**5.36**	**0.99**	**4.99**	**1.12**	**2.11***	**0.35**	**0.02 - 0.72**
Conscientiousness	5.74	1.15	5.41	1.38	1.57	0.26	-0.09 - 0.74
Agreeableness	4.92	1.14	5.18	1.15	-1.37	-0.23	-0.64 - 0.12
Extraversion	**4.78**	**1.59**	**4.21**	**1.7**	**2.09***	**0.35**	**0.03 - 1.11**
Neuroticism	3.38	1.53	3.24	1.5	0.56	0.09	-0.36 - 0.64

Note. * denotes p < .05.

Study 2

Goals:

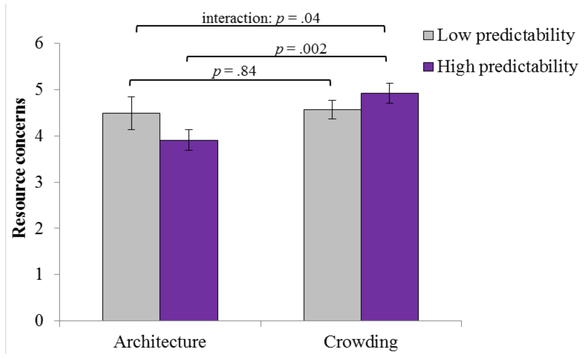
1. Examine how primed crowding cues impact creativity.
2. Test resource concerns as a mediator.
3. Test if environmental history moderates reactions to crowding cues.

Hypothesis: Crowding should prompt heightened resource concerns and creativity. Effects should be driven by people from predictable ecologies.

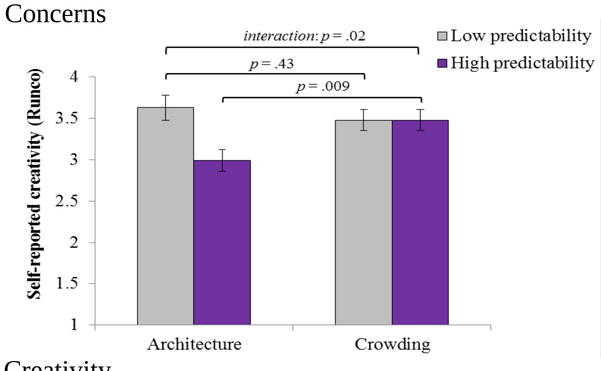
Method

1. Participants (n = 121) viewed one of two priming slideshows (Study 1)
2. Next, they completed measures of:
   - Resource Concern (EAI: Milfont & Duckitt, 2010)
   - Self Reported Creativity(Runco, Plucker, & Lim, 2001)
   - Behavioral Creativity (Wallach & Kogan, 1965)
   - Childhood Predictability (Mittal et al., 2015)

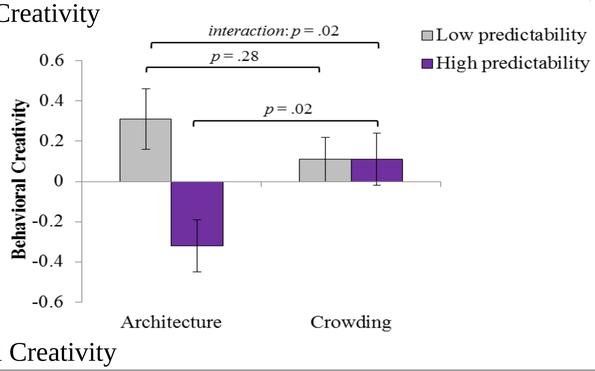
Results



a) Resource Concerns

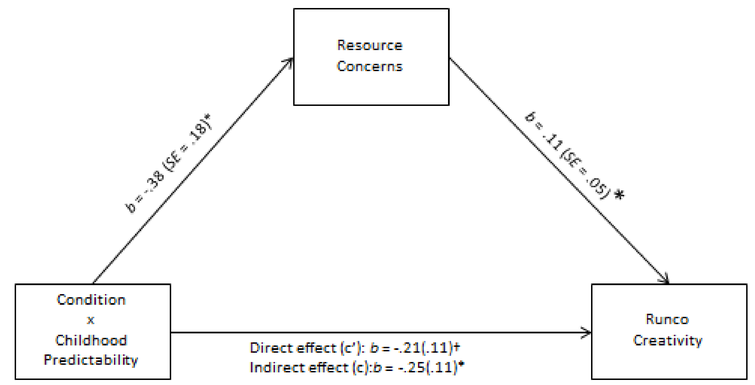


b) Reported Creativity



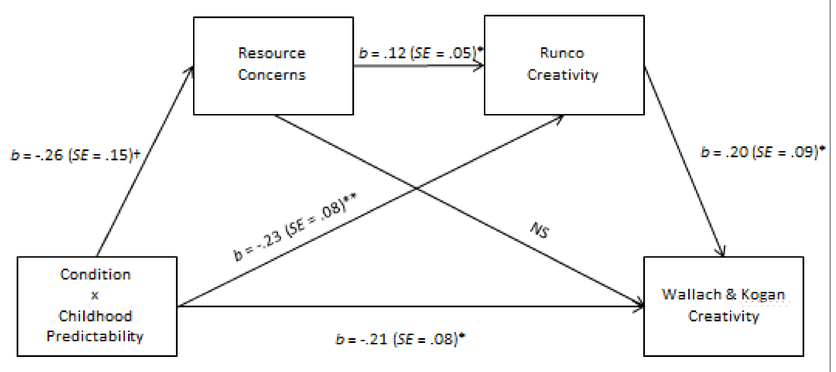
c) Behavioral Creativity

Results: Process Model for Self-Reported Creativity



* denotes p < .05, while † denotes p = .05

Results: Full Model for Creativity



** denotes p < .01, * p < .05, and † p = .05

Discussion

Results provide preliminary support for the hypothesis that crowding cues increase creative thinking.

- Such shifts help to increase competitiveness and resource access.

Environmental predictability during development may influence sensitivity to crowding cues in adulthood

- People from predictable environments become more concerned about resources, and display increased creativity.
- People from unpredictable environments were concerned about resources and creative, regardless of prime.

Concerns about resource availability may promote increased creativity in crowded environments.

- Highly powered follow-up studies are needed.