ADVERSITY AND RELATIVE PERFORMANCE

**Within-person cognitive performance across abilities among adversity-exposed people in the SECCYD**

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**Abstract**

The idea that some skills might be enhanced by adversity is gaining traction. For example, research leveraging the hidden talents approach has uncovered a few narrow, context-dependent skills enhanced by adversity. Yet, for a field to grow, we must not dig too deep, too fast. In this paper, we zoom out and evaluate two basic features of the hidden talents approach. First, adversity simultaneously decreases and increases test performance, depending on the skill. Although commonly assumed, this assertion is rarely tested. Second, empirical work suggests enhanced skills manifest within- not between- individuals. Although studies have compared the same skill in different testing contexts, research comparing different skills have tested, at most, two or three skills. One reason is that the hidden talents approach uses a functional-link approach to understanding which skills fit the challenges of adverse environments. We expand on this finding, by analyzing ten skills in the Woodcock Johnson Cognitive and Achievement test battery in a large, prospective longitudinal dataset. We use a within-person modeling strategy to examine how exposure to harshness and unpredictability relate to *relative* decreases and increases in subtest performance compared to a person’s overall performance. Our goal is to sketch adversity-shaped cognitive profiles, identify possible drivers of lowered overall performance, and map out sets of ‘intact’ skills.

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* Introduction
  + The idea that some skills might be enhanced by adversity is gaining traction.
  + Research has a found a few skills related to adversity exposure
  + So far, skills are narrow, context dependent, and tested in a piecemeal fashion.
  + In this paper, we zoom out and take stock
    - First, we highlight the basic assumptions of adaptation-based skill development
    - Second, we draw on general empirical insights from studies so far.
* Adaptation-based assumptions and empirical insights
  + Assumptions
    - Adaptation-based frame works are based on functional-link logic
    - Skills that are enhanced by adversity serve an adaptive function in that environment.
    - Variability in skill-environment fit should lead to impairments and enhancements across skills
  + Insights
    - Enhanced skills are context-depend
      * Testing-context
      * Testing content
    - Enhanced skills manifest within, not between individuals
      * Performance

Frameworks formalize the rules of the game, they don’t tell you who is going to win.

Criteria for multiple literatures

Map more of the parameter space

**The Current Study**

**Method**

**Participants**

Families were initially recruited for the NICHD SECCYD in 1991. A total of 1364 families met all the prescreening criteria, namely that mothers: (a) were age 18 or older, (b) did not plan to move, (c) had a newborn without any known disabilities (and could leave the hospital within one week), (d) had no history of substance abuse, (e) could speak English, and (f) lived within 1 hour driving distance from the research lab and were in a relatively safe neighborhood. More information about recruitment and selection procedures is available from the study (NICHD Early Child Care Research Network, 2005; see https://www.icpsr.umich.edu/web/ICPSR/series/00233).

The current analyses included participants with non-missing data on most predictors and outcome variables through age 15 (N = 1302).

**Measures**

***Predictors***

**Unpredictability.**

**Harshness.**

***Outcomes***

**Picture vocabulary.**

* verbal comprehension/crystallized knowledge
* 5 assessments, 54 months, grades 1, 3, 5, and at 15 years

**Verbal analogies.**

* verbal fluid reasoning and crystallized knowledge
* 2 assessments, grade 3 and at 15 years

**Passage comprehension.**

* vocab and comprehension skill
* 3 assessments, grades 3, 5, and at 15 years

**Applied problems.**

* practical math problem solving skill
* 5 assessments, 54 months, grades 1, 3, 5, and at 15 years

**Memory for Sentences.**

* short term retrieval
* 3 assessments, 54 months and grades 1 and 3

**Incomplete words.**

* auditory processing
* 2 assessments, 54 months and grade 1

**Memory for names.**

* long term retrieval
* 2 assessments, grades 1 and 3

**Letter-word identification.**

* verbal knowledge
* 4 assessments, 54 months, grades 1, 3, 5

**Word attack.**

* auditory processing
* 2 assessments, grades 1 and 3

**Calculations.**

* math calculations
* 2 assessments, grades 3 and 5

**Results**

**Data Analysis Strategy**

**Primary Analyses**

**Secondary Analyses**

**Discussion**

**References**