

Concept Paper Template

Provisional Paper Title: On Cognitive Variation and Lifetime Experiences of Victimization: Using a Longitudinal Twin Design to Examine Possible Causal Effects

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(if the proposing author is a student or colleague of an original PI)

Today's Date: 12/12/17

Please describe your proposal in 2-3 pages with sufficient detail for helpful review.

Objective of the study:

The study of traumatic experiences, broadly defined, is a topic that has drawn the interests of a diverse range of scholars. Psychologists, sociologists, and criminologists, for instance have all devoted considerable time to examining various correlates and consequences of traumatic life events. Within the framework of trauma, but more narrowly defined, researchers in each of these various fields have examined certain predictors of criminal victimization both cross-sectionally and longitudinally (Pratt et al., 2014). While a large body of literature has emerged, there remain some key limitations that preclude making strong causal inferences about the etiology of victimization, and thus identifying plausible mechanisms for prevention and treatment. In particular, there are two interconnected limitations in the literature.

First, prior research (within criminology in particular) has focused on situational predictors of victimization, work guided largely by routine activities theory (Schreck, 1999). To be sure, RAT has provided valuable insight into the correlates of being victimized, and also suggested plausible ways in which victimization might be avoided. Nonetheless, it has tended to overlook individual level predictors that might increase the risk of becoming a crime victim. Schreck (1999) recognized this limitation, and expanded research on low impulse control to include not just the prediction of crime perpetration, but also victimization. Building on the well-established literature regarding victim offender overlap, Schreck argued that given the robust correlation between self-control and crime, it might be plausible that lower impulse regulation may also correlate with victimization; an idea widely supported (Pratt et al., 2014)

More recently, researchers have again expanded the literature on individual level predictors of victimization to include a trait closely correlated with self-control and impulse regulation, general intelligence (Beaver et al., 2016;

Beckley et al. 2017) Several studies, using large samples have revealed a clear correlation between intelligence and measures of victimization experiences. As a whole, these findings suggest that as levels of general intelligence increase, the risk of victimization declines. This finding seems further underscored by the general inverse relationship that exists for low impulse control and intelligence. In short, there is mounting reason to suspect that individual level correlates predict victimization experiences, and there remains a need to grow this literature by not only continuing to test the effects of intelligence and self-control, but also other plausible cognitive phenotypes that may increase the odds of being victimized.

The second limitation of victimization work involves an inability to fully account for plausible confounding variables (Beckley et al., 2017). At the phenotypic level, both self-control and intelligence are plausible confounders that may explain relationships between situational factors & victimization. Yet, associational studies like those typically undertaken on this topic in the past cannot account for the possibility of genetic confounding. Self-control, general intelligence, and victimization are all phenotypes that behavioral geneticists have scrutinized closely and found to be at least moderately heritable. The consequence of this, given the phenotypic correlation between the traits, is that a genetic correlation might also exist such that the genes that influence self-control, might also influence victimization. Failure to account for this can leave an observational study vulnerable to unmeasured genetic confounds, making it almost impossible to clearly evaluate causation.

Recognizing this problem, several recent studies have attempted to address the issue using variations of sibling designs (Beckley et al., 2017). Boutwell et al. (2014) found evidence that even after correcting for genetic influence, low self-control seemed to increase the risk of victimization using American twin data. Most recently, a similar pattern emerged for indicators of general intelligence and victimization, such that the correlation between the two variables withstood correction for genetic confounding. Nonetheless, this work has key limitations that need to be addressed. For instance, prior work has often relied on limited measures of victimization (Boutwell et al., 2017), or has been unable to examine whether correlations can withstand correction for confounding over long stretches of the life-course.

Moreover, prior work has been largely unable to expand the types of measures included in the analysis to incorporate other key cognitive traits such as theory of mind; an important cognitive ability which permits humans to read intention and anticipate behavior in other people. This, in particular, might play an important role in assessing whether, and to what extent, another actor may intend to perpetrate harm towards you. The E-Risk Sample provides a perfect vehicle for filling these gaps. Not only do the data contain valid and reliable measurement for all of the constructs, they permit longitudinal analysis across long swaths of the life-course using twins. As such, the current study will expand on prior research, but should also represent one of the most rigorous examinations of correlates and possible causes of criminal victimization across development.

Data analysis methods:

Multi-Level Regression to examine within versus between pair effects:

1: (MZ & DZ Differences)

2: (MZ Differences)

Variables needed at which ages:

Key IV's:

Age 5: Theory of Mind
Intelligence
ADHD (symptom scale)

Age 7: ADHD (symptom scale)

Age 10: ADHD (symptom scale)
Childhood low self-control (composite of mother and teacher measures of self-control at ages 5, 7, 10)

Age 12: Intelligence
Conduct Disorder (symptom scale)
ADHD (symptom scale)
Psychosis Experiences

Age 18: Intelligence

Outcome variables:

2 measures of victimization:

1) Adolescent Polyvictimization (covering ages 12 to 18)

2) Informant report of victimization (age 18)

Covariates:

Childhood Polyvictimization (covering ages 5, 7, 10)

References cited:

Beaver, K. M., Nedelec, J. L., Barnes, J. C., Boutwell, B. B., & Boccio, C. (2016).

The association between intelligence and personal victimization in adolescence and adulthood. *Personality and Individual Differences*, 98, 355-360.

Beckley, A. L., Caspi, A., Arseneault, L., Barnes, J. C., Fisher, H. L., Harrington, H., ... & Moffitt, T. E. (2017).

The Developmental Nature of the Victim-Offender Overlap. *Journal of Developmental and Life-Course Criminology*, 1-26.

Boutwell, B. B., Franklin, C. A., Barnes, J. C., Tamplin, A. K., Beaver, K. M., & Petkovsek, M. (2013).

Unraveling the covariation of low self-control and victimization: A behavior genetic approach. *Journal of adolescence*, 36(4), 657-666.

Boutwell, B. B., Connolly, E. J., Barbaro, N., Shackelford, T. K., Petkovsek, M., & Beaver, K. M. (2017).

On the genetic and environmental reasons why intelligence correlates with criminal victimization. *Intelligence*.

Pratt, T. C., Turanovic, J. J., Fox, K. A., & Wright, K. A. (2014). Self-control and victimization: A meta-analysis. *Criminology*, 52(1), 87-116.

Schreck, C. J. (1999). Criminal victimization and low self-control: An extension and test of a general theory of crime. *Justice Quarterly*, 16(3), 633-654.

Avshalom's suggestions regarding variables to use.

Age 5: Theory of Mind **use the composite , with advanced tasks (more variability)**
Intelligence
ADHD (symptom scale)

Age 7: ADHD (symptom scale)

Age 10: ADHD (symptom scale)
Childhood low self-control (composite of mother and teacher measures of self-control at ages 5, 7, 10)

Age 12: Intelligence
Conduct Disorder (symptom scale)
ADHD (symptom scale)
Psychosis Experiences

Why not get the CD symptoms at 5, 7, 10, and 12?

Rather than work with the age-specific scales, you can create a cross-age composite for ADHD and CD.

Another possibility is to focus on the age 12 data from the interview with the study member: depression, anxiety, psychotic experiences, and CD. There are continuous measures of each.

Age 18: Intelligence

I don't understand the use of age 18 intelligence.

Outcome variables:

2 measures of victimization:

- 1) Adolescent Polyvictimization (covering ages 12 to 18)
- 2) Informant report of victimization (age 18)

you might want to get the components of polyvictimization, too.

Covariates:

Childhood Polyvictimization (covering ages 5, 7, 10)

This actually goes up to age 12.

In addition to looking at polyvictimization, you might want to just look at the physical/sexual abuse variable. The polyvictimization variable from childhood includes negelect, peer bullying, domestic violence exposure, and the physical/sexual abuse is 'cleaner.'

Data Security Agreement

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Please keep one copy for your records

(Please initial your agreement)

BBB I am current on Human Subjects Training (CITI (www.citiprogram.org) or training in human subject protection through my post or courses.

BBB My project is covered by Duke or King's IRB OR I have /will obtain IRB approval from my home institution.

BBB I will treat all data as "restricted" and store in a secure fashion.

BBB I will not share the data with anyone, including students or other collaborators not specifically listed on this concept paper.

BBB I will not post data online or submit the data file to a journal for them to post. Some journals are now requesting the data file as part of the manuscript submission process. The E-Risk Study cannot be shared because the Study Members have not given informed consent for unrestricted open access. Speak to Terrie or Avshalom for strategies for dealing with data sharing requests from Journals.

BBB Before submitting my paper to a journal, I will submit my draft manuscript and scripts for data checking, and my draft manuscript for co-author mock review, allowing three weeks.

BBB I will submit analysis scripts and new variable documentation to project data manager after manuscript gets accepted for publication.

BBB I will return all data files to the Data Manager after the project is complete. Collaborators and graduates of DPPP may not take a data file away from the DPPP office. The data remains the property of the Study and cannot be used for further analyses without express, written permission.

BBB^x I will ensure geographical location information, including postcodes or geographical coordinates for the E-Risk study member's homes or schools, is never combined or stored with any other E-Risk data (family or twin-level data)

Signature: *Brian B. Boutwell*