ENVIRONMENTAL-RISK (E-RISK) LONGITUDINAL TWIN STUDY
CONCEPT PAPER FORM

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Provisional Paper Title: Does Arrest Promote or Deter Future Criminal Involvement?: Results from a Longitudinal Study of Twins

Date: 2017-11-13

Objective of the study and its significance:

Two longstanding theoretical traditions in criminology make opposing predictions about the impact of arrest on later offending. Deterrence theory argues that the experience of arrest will make subsequent offending *less* likely because it will teach offenders that the costs of crime outweigh its benefits. Labeling theory suggests an arrest experience will make later offending *more* likely because it will lead to a process that results in a self-fulfilling prophecy where the offender realizes his/her perceived role as a "bad apple." These opposing predictions have inspired much research and have led to rich traditions of theoretical and empirical development in criminology. Tests of hypotheses derived from deterrence and labeling theories remain important because evidence from such tests can be translated into actionable policies. Below we provide more detail about the theoretical predictions made by deterrence and labeling theories. After that, we describe our proposed strategy for testing the predictions made by these two competing perspectives.

Deterrence theory is grounded in the idea that humans are hedonistic in nature and seek to obtain pleasure and avoid pain. Humans have desires that sometimes force them to make a rational calculation wherein they weigh the benefits of offending against the costs of apprehension (Nagin, Solow, and Lum, 2015). To the rational individual, engaging in criminal acts may result in utility gain (e.g., pleasure or monetary rewards). But when the individual is arrested, they will experience a loss of utility (e.g., physical or social pains) (Becker, 1968). Therefore, according to deterrence theory, the experience of arrest should teach rational actors that crime does not pay because the expected loss of utility outweighs the expected utility gains. The next time the offender has the opportunity to offend, they will refrain from doing so because they now perceive—due to their past arrest experience(s)—that the pains associated with crime outweigh its benefits.

Labeling theory reaches a very different conclusion: it hypothesizes that the efforts of the criminal justice system to stop crime ironically have the unintended consequence of encouraging later involvement in offending (Lilly, Cullen, and Ball, 2015). This is said to arise from the experience of criminal or delinquent labeling in two ways. The first is that a label produces a self-fulfilling prophecy that leads to a transformation of identity that supports a criminal lifestyle (Matsueda, 1992; Tannenbaum, 1938). The second way points to the structural impediments to conventional life (e.g., no longer having the right to vote, the ability to obtain student loans, being required to disclose criminal history on job applications) that are the direct result of the system's labeling of an individual (Sampson and Laub, 1997). These structural impediments make access to prosocial activities more difficult, which in turn, makes antisocial alternatives more attractive. Through either (or both) pathway, labeling theory suggests that criminal or delinquent labels heighten a person's risk for becoming ensnared in a criminal career.

Although deterrence theory and labeling theory have rich histories and long empirical records, there have been relatively few studies that can directly adjudicate between the two frameworks. Put a different way, there have been many tests of deterrence theory and labeling theory independently, but relatively few studies have sought to directly take on the key distinction between the two: that an arrest experience will make future crime less (deterrence theory) or more (labeling theory) likely. The few studies that have sought to address this point directly have produced mixed results (Huizinga and Henry, 2008; Klein, 1974; Smith and Gartin, 1989; Wiley and Esbensen, 2016), leaving scholars and policymakers with the difficult task of drawing on an inconclusive evidence base when making policy recommendations.

One of the primary factors—we contend—that is responsible for the mixed evidence is that most of the available research has relied on designs that are incapable of accounting for individual differences that may be systematically related to the probability of offending. In other words, scholars have sought to test the competing hypotheses outlined above with research designs that fail to account for important sources of selection bias that ultimately confound estimates of the causal impact of arrest on subsequent offending (see Smith and Paternoster, 1990). One solution to this methodological issue is to rely on the discordant twin design that has been popularized in the behavioral genetics literature (Kendler, 2017; Moffitt and Beckley, 2015). Thus, we propose to leverage the twin data available in the E-Risk to perform a discordant monozygotic (MZ) twin design (or, more broadly, an MZ twin fixed effects model) to estimate the causal effect of first arrest on later offending. If we find that an arrest makes later offending less likely (or less frequent), then deterrence theory will be supported. If we find that an arrest makes later offending more likely (or more frequent), then labeling theory will be supported.

Statistical analyses: Twin fixed effects regression where criminal activity is the dependent variable and arrest is the key independent variable. The twin fixed effects model will be conducted using the MZ twin subsample.

Variables Needed at Which Ages (names and labels):

Study:

Cross-age measures:
- Self-control (or impulse control): LOWSC510E (Low self-control, combination measure as described in the Genes/Crime paper)

1st contact:

- birth weight: BWGRE5 (birth weight)

Age 5:

Note from Jasmin: There are two possible measures for externalizing behavior at ages 5-12: One would be TOTEXTE – this is a combination of mothers' and teachers' CBCL+DSM-IV conduct disorder item ratings of the child. The other would be DXCD_EMT – this is a combination of mothers' and teachers' ratings of conduct disorder symptoms, using the CBCL and DSM-IV items. TOTEXTE is more comprehensive than DXCD_EMT, but DXCD_EMT is more DSM-relevant (which may not be a concern for you). I put TOTEXTE in the variable list for now. Note also that the CBCL has subscales, e.g. for rule-breaking behavior, that may get more at delinquency. I put the total measure in for now.

- IQ: IQE5 (IQ at age 5; note IQ was also assessed at age 12 [IQ12E], so one could make a combination)
- externalizing behavior: TOTEXTE5 (externalizing behavior, combined CBCL rating by parents and teachers)

Age 7:
- externalizing behavior: TOTEXTE7 (externalizing behavior, combined CBCL rating by parents and teachers)

Age 10:
- externalizing behavior: TOTEXTE10 (externalizing behavior, combined CBCL rating by parents and teachers)

Age 12:
- externalizing behavior: TOTEXTE12 (externalizing behavior, combined CBCL rating by parents and teachers)
- delinquency: CONEC12 (antisocial behavior [using DSM conduct disorder items], self-report)
- peer behavior (delinquency) –Jasmin did not know whether we have peer conduct problem information. Tim can you add?
- IQE12

Age 18:
- externalizing behavior: CDSXE18 (self-report of conduct disorder symptoms, no mum or teacher report on the CBCL was collected at 18, just twin self-report)
- delinquency/criminal behavior (count measure) (Jasmin says: I'm not aware of a measure other than cdsxe18)
- there is also a short list of antisocial behavior items rated by co-informants (such as mothers and co-twin) but this scale does not have a variable name in the data dictionary yet. Tim can you add?
- peer behavior (delinquency) –Tim can you add?
- GPA: EDUCHACHVE18 (educational attainment at age 18)
- age at phase 18 interview (I don't think this is calculated yet but should be possible to do using DOB and test date, this is to know which PNC convictions came after vs before interview)
- ASBO (CD43) – I don't know the variable name for this
- spent night in police custody (CD44) – I don't know the variable name for this

Police National Computer data set: all derived variables please.

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Data Security Agreement

Provisional Paper Title	Does Arrest Promote or Deter Future Criminal Involvement?: Results from a Longitudinal Study of Twins
Proposing Author	J.C. Barnes
Today's Date	11/13/2017

Please keep one copy for your records
(Please initial your agreement)

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

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

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

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

_JCB ____ 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.

_JCB ____ 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.

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

_JCB ____ 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.

_JCB ____ 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: ....JC Barnes (copy with hand signature on file)..

CONCEPT PAPER RESPONSE FORM

A. To be completed by the proposing author

Proposing Author: JC Barnes

☐xx   I have read the E-Risk data-sharing policy guidelines and agree to follow them

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Potential Journals:

Intended Submission Date (month/year): 06/2018

Please keep one copy for your records and return one to Louise (louise.arseneault@kcl.ac.uk)

B.   To be completed by potential co-authors:

☐   Approved   ☐   Not Approved   ☐   Let's discuss, I have concerns

       Comments:

Please check your contribution(s) for authorship:

☐   Conceptualizing and designing the longitudinal study

☐   Conceptualizing and collecting one or more variables

☐   Data collection

☐   Conceptualizing and designing this specific paper project

☐   Statistical analyses

☐   Writing

☐   Reviewing manuscript drafts

☐   Final approval before submission for publication

☐   Acknowledgment only, I will not be a co-author

Signature: ....