



Associations between life history speed and sexually coercive behavior

Nicholas Kavish*, Jaime L. Anderson

Department of Psychology and Philosophy, Sam Houston State University, 1901 Ave I, Huntsville, TX, United States of America



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ABSTRACT

The current study seeks to further understand risk factors for sexually coercive behavior by evaluating how indicators of population level average Life History Speed (LHS; e.g., teen birth rate) compare to typical criminogenic variables (e.g., Socioeconomic status) as predictors of state variation in rape rates across the 50 United States, as well as the relationship between individuals' LHS and self-reported proclivity for, and perpetration of, sexually coercive behaviors in a community sample ($n = 162$). LH strategies are described as a continuum of "LH speeds," and variation in LHS has been connected to variation in aggressive and violent behavior. The current project extends this research by testing population level variation in LHS indicators and individual variation in psychometric LHS as a predictor of variation in sexually coercive behavior. At the U.S. state level, the teen birth rate ($B = 0.63$, $p = .016$) was the strongest predictor of between-state variation in rape rates. Although significant bivariate associations were found between psychometric LHS and sexually coercive behavior, at the multivariate level, facets of LHS were linked to self-reported propensity to engage in sexual coercion, but less so with actual perpetration.

1. Introduction

Although incidence estimates for rape and sexually coercive behavior range widely depending on the language and methodology used (Breiding, 2014; Truman & Langton, 2015), there is little dispute that rape and sexual assault are significant issues, and that there is a serious need to understand the origins of such behavior and design programs to prevent it. Indeed, an array of scholars from a variety of disciplines (e.g. Women's and Gender Studies, Criminology, and Evolutionary Biology) have tirelessly investigated factors related to perpetration and victimization (Belknap, 1987; Mardorossian, 2002; Thornhill & Palmer, 2000).

Thornhill and Palmer (2000) advanced a controversial idea that rape may be understood from an evolutionary perspective. They hypothesized that rape might be an evolutionarily adaptive behavior that increases an individual's likelihood of attaining a mate, or that it might be a by-product of other adaptations such as sexual desire and aggression that could have evolved without a direct connection to the benefits (producing an offspring) or costs (risking being assaulted or murdered by the victim's kin) of rape. While compelling in their arguments, the authors offered little in the way of direct empirical tests of evolutionary biological theories as predictors of rape and sexually coercive behavior in humans.

Some evolutionary explanations of rape have already been tested. For example, the mate deprivation hypothesis suggests that males who

have limited access to, or limited resources to attract, mates may be more likely to engage in sexual coercion (e.g. Thornhill & Thornhill, 1983). Contrary to the hypothesis, however, research found that males who reported engaging in sexually coercive behavior actually reported more sexual experience than males who did not engage in such behavior (Lalumière, Chalmers, Quinsey, & Seto, 1996). The current paper seeks to explore an alternative understanding of rape from a biological perspective by evaluating a mid-level biological theory, Life History (LH) Theory (measured as life history speed), as a predictor of rape at the individual and group level using archival data and a community sample from a pilot study.

Life History Theory (LHT) is a biological theory that attempts to explain how the environment and natural selection affect the timing of important traits and events that are referred to as Life History traits (e.g. physical growth and development, maintenance of health, reproduction, and aging; Stearns, 2000). In simplest terms, LHT predicts that as environmental stability decreases and mortality risk increases, the optimal strategy will favor faster growth and earlier reproduction vs. slower growth, larger size, later reproduction, and higher parental investment in more stable and low risk environments (Figueredo et al., 2006). More recently, researchers studying LH traits refer to a LH speed continuum in terms of "fast" and "slow" LH "speeds."

When applying LHT to humans, there are two ways in which researchers assess an individual's Life History Speed (LHS). One method is

* Corresponding author at: Department of Psychology, Sam Houston State University, Campus Box 2447, Huntsville, TX 77341, United States of America.
E-mail address: nak012@shsu.edu (N. Kavish).

to use a psychometric measure of LHS. Psychometric measures of LHS are self-report batteries that ask respondents questions about various experiences, relationships, and characteristics that are theoretically related to LHS (see [Figueredo et al., 2014](#)). The second method is to use biometric LHS indicators. These indicators are specific biological variables thought to indicate an organism's LHS. These LHS indicators are directly derived from LHT and include variables such as age at first reproduction, number of sexual partners, number of offspring, and age at puberty.

Although humans as a species are very much at the slow end of the LH continuum, there is still a significant degree of individual variation ([Rushton, 1985](#)). As a result, scholars have amassed a substantial body of research evaluating the ability of differences in LHS to predict differences in other traits like personality and behavior (e.g. [Figueredo et al., 2005, 2006](#); [Gladden, Figueredo, & Jacobs, 2009](#); [Rushton, 1985, 2004](#)). It has been linked to better executive functioning ([Figueredo et al., 2014](#); [Patch & Figueredo, 2017](#)), whereas a faster life history speed has been linked to low impulse control ([Sherman, Figueredo, & Funder, 2013](#)) and diminished ability to delay gratification ([Woodley, Figueredo, Brown, & Ross, 2013](#)). Especially interesting is the consistent link that has been found between indicators of a fast LHS and aggression (e.g. [Beaver, Wright, & Walsh, 2008](#); [Charles & Egan, 2005](#); [Figueredo et al., 2005](#)).

Researchers have also examined the ability of LHS indicators to predict criminal behavior ([Charles & Egan, 2005](#); [Copping, Campbell, & Muncer, 2013](#); [Minkov & Beaver, 2016](#); [Rushton & Templer, 2009](#); [Templer & Rushton, 2011](#)). Indeed, [Boutwell et al. \(2015\)](#) drew upon the existing research on LHS and crime to propose a new evolutionary taxonomy and framework for understanding the origins of criminal behavior (for further discussion of this framework with an emphasis on research on non-human parallels, see [Kavish, Fowler-Finn, & Boutwell, 2017](#)). For example, [Charles and Egan \(2005\)](#) found higher scores on a measure of mating effort to predict higher levels of self-reported delinquency in both male and female juveniles in Scotland. [Copping et al. \(2013\)](#) found that teen pregnancy rates were positively associated with violent crime rates and that mediation models including both family (e.g. father absence) and neighborhood (e.g. life expectancy and population density; all indicators of environmental instability and thus theoretical predictors of a faster life history speed) factors best fit the relationship. [Minkov and Beaver \(2016\)](#) found that parental absenteeism and adolescent fertility were better predictors of violent crime across 51 nations than a country's average IQ level, its Gross Domestic Product (GDP) per capita, or its Gini index (a measure of socioeconomic inequality; [Minkov & Beaver, 2016](#)). Furthermore, in a study of the 50 U.S. states, a state's birth rate was positively associated with its rape rate and its life expectancy was found to be negatively related to robbery and assault rates ([Templer & Rushton, 2011](#)). Important for the current study, higher mating effort has also been associated with coercive sexual behavior ([Lalumiere, Harris, Quinsey, & Rice, 2005](#); [Lalumiere & Quinsey, 1996](#)).

At the individual trait level, some LH indicators have been linked to rape and sexually coercive behavior ([Capozza, 1997](#); [Lalumiere et al., 2005](#); [Lalumiere & Quinsey, 1996](#); [Rubinstein, Yeager, Goodstein, & Lewis, 1993](#)). Specifically, higher mating effort is positively correlated with sexually coercive behavior ([Lalumiere et al., 2005](#); [Lalumiere & Quinsey, 1996](#)). Similarly, earlier sexual debut has been connected to later arrest for sexual assault ([Capozza, 1997](#); [Rubinstein et al., 1993](#)). Sexual promiscuity has also been linked to both nonphysical sexual coercion (verbal pressure and/or manipulation) and physical sexual aggression (incapacitation, physical force, or threats; [DeGue, DiLillo, & Scalora, 2010](#)).

[Dunkel and Mathes \(2011\)](#) linked LH to willingness to engage in sexual coercion in a study of short versus long term mating preferences and manipulated life expectancies, such that participants asked to imagine a shorter life expectancy reported being more willing to engage in sexual coercion. Additionally, [Gladden, Sisco, and Figueredo \(2008\)](#)

found faster LHS to predict self-reported sexually coercive behavior in undergraduate students. Finally, in a comparison of 113 countries, [Rushton and Templer \(2009\)](#) found that life expectancy was significantly, negatively related to rape rates, and that life expectancy was more strongly associated with rape rates than both IQ and PPP-GNI (Purchasing Power Parity Gross National Income; a measure of per capita income).

1.1. Current Study

Overall, there is growing evidence linking LHS to rape and sexually coercive behavior. However, in this body of research, there has often been a reliance on student samples ([Dunkel & Mathes, 2011](#); [Gladden et al., 2008](#)), a lack of more comprehensive psychometric measures of LHS ([Gladden et al., 2008](#)), and LH variables have rarely been considered together with common criminological variables (e.g., SES, IQ). The current study adds to the existing body of research by seeking to replicate and extend previous findings using archival group data, and by looking at the individual differences level in a pilot study using a community sample and more extensive measures.

2. Method

2.1. Participants

For Study 1, archival data across states were compiled and analyzed. Official rape statistics were downloaded from the FBI's Uniform Crime Report. Socioeconomic and other relevant data (e.g. teen birth rates, parental absenteeism) were acquired from various government and non-profit organizations (described below).

For Study 2, participants were recruited using Amazon's Mechanical Turk (MTurk). Power analysis conducted using G*Power suggests a sample of 85 in order to detect a medium effect. Participants ($N = 162$) were English speaking adults from the United States. Due to the nature of the topic and the measures being used, only cisgender, heterosexuals were asked to participate. There were more males (58%) than females, and the participants were predominantly Caucasian (78.4%; 6.8% African-American, 8% Latino/Latina, 6.2% Asian, 0.6% Other). The average age was 35 years old ($SD = 10.6$ years).

2.2. Measures

2.2.1. Study 1

For Study 1, we used population data from U.S. states. We used officially reported rape rates from the FBI's Uniform Crime Report. To account for more traditional factors associated with crime, we included variables indicating average socioeconomic status (SES) levels and average intelligence levels. For socioeconomic data, we used Gross Domestic Product (GDP) per capita as reported by the Bureau of Economic Analysis. For average intelligence, we used the estimated "state IQ" levels reported by [Kanazawa \(2006\)](#). [Kanazawa \(2006\)](#) derived these estimates using average SAT scores, from each state and demonstrated that these estimates accounted for about 25% of the variation in Gross State Product per capita. For average state level LHS indicators, we used three variables. First, we used state level life expectancy data compiled by the non-profit Henry J. Kaiser Family Foundation. We also examined adolescent fertility, using data on teen (15–19) birth rates for each state compiled by the Centers for Disease Control. Finally, we examined parental absenteeism by calculating the rate of single-parent households (single father, single mother) per 100 households with children (data gathered from the Kids Count data center).

2.2.2. Study 2

2.2.2.1. Arizona Life History Battery. The Arizona Life History Battery (ALHB; [Figueredo, 2007](#)) is a 199 item self-report measure. The battery measures cognitive and behavioral characteristics indicative of an

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