

LIFE HISTORY SPEED AS A PREDICTOR OF RAPE AND SEXUALLY COERCIVE  
BEHAVIOR

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Master of Arts

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by

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## ABSTRACT

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The current study seeks to further understand risk factors for sexually coercive behavior by evaluating how indicators of population level average Life History speed (e.g., teen birth rate, life expectancy) compare to typical criminogenic variables (e.g., Socioeconomic status, average IQ) as predictors of state variation in rape rates across the 50 United States, as well as the relationship between individuals' Life History (LH) speeds and self-reported proclivity for, and perpetration of, sexually coercive behaviors. LH Theory is a biological theory that argues organisms' optimal resource allocation strategies are based on their environments. LH strategies are described as a continuum of "LH speeds," and variation in LH speed has been connected to variation in aggressive and violent behavior. The current project extends this research by testing population level variation in LH speed indicators and individual variation in psychometric LH speed as a predictor of variation in sexually coercive behavior.

**KEY WORDS:** Life History Theory; Rape; Sexually coercive behavior; Life History Speed

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## CHAPTER I

### Introduction

Rape and other forms of sexually coercive behavior are of serious concern in modern society. Incidence estimates for these crimes range widely depending on the language and methodology used (Breiding, 2014; Truman & Langton, 2015). In the United States, for example, the Federal Bureau of Investigation's Uniform Crime Report indicated there were 116,645 rapes in 2014 (or 0.37 rapes per 1,000 people), whereas the Bureau of Justice Statistics' National Crime Victimization Survey estimated that there were 284,350 rapes (or 1.1 per 1,000 people). At the international level, methodological differences in collecting and reporting crime rates between countries have been found to be so problematic that INTERPOL no longer even publishes crime statistics. Nevertheless, 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<sup>1</sup> from an evolutionary perspective<sup>2</sup>. They hypothesized that rape might be an 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

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<sup>1</sup> It is important to note that understood does not mean justified.

<sup>2</sup> Additionally, if a behavior is found to have evolutionary origins, this does not mean that it is biologically determined and unchangeable, nor does it imply that it is ethically or morally justifiable.

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 empirically testing evolutionary biological theories as predictors of rape and sexually coercive behavior. Especially lacking from their argument, was an explicit evolutionary framework for understanding and predicting how evolved traits could contribute to explanations for sexually coercive behavior. The current paper seeks to advance understanding of rape from a biological perspective by evaluating a mid-level biological theory, Life History Theory (measured as life history speed), as a predictor of rape at the individual and group level.

### *Life History Theory*

Life History Theory 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). Broadly speaking, evolutionary theory states that organisms must allocate their energy and resources between two goals: survival and reproduction. The optimal strategy for an organism is largely impacted by the specific environment in which the organism is living (Stearns, 1992; 2000). The framework for Life History Theory was first posited by Dobzhansky (1950) when he suggested that the timing of life history traits should be predictably related to mortality factors like disease prevalence, predation risk, and availability of adequate nutrition. He argued that the higher mortality risk would result in organisms evolving to have higher fecundity, faster physical and sexual maturation, and lower parental investment. Those in low risk environments, on the other hand, would develop more slowly, have fewer

offspring, and invest more heavily in those offspring (Dobzhansky, 1950). Expanding on Dobzhansky's (1950) ideas, MacArthur and Wilson (1967) proposed that all organisms fall on what they called the  $r$ - $K$  continuum. Organisms who fall closer to the  $r$  end (“ $r$ -selected”) reside in less stable environments with high predation risk and food uncertainty, while “ $K$ -selected” organisms live in more stable and safe environments.

The attempt to explain how natural selection molds the timing and duration of these life history traits (physical growth, sexual maturation, reproduction, and senescence) is known as Life History (LH) Theory. Although LH traits have been found to be moderately heritable (Figueredo, Vasquez, Brumbach, & Schneider, 2004), there is significant evidence of the importance of environmental factors in shaping LH strategies. In simplest terms, LH Theory predicts that as environmental stability decreases and mortality risk increases, the optimal strategy will favor investing in faster growth and earlier reproduction vs. slower growth, larger size, later reproduction, and higher parental investment in more stable and low risk environments (Figueredo, Vasquez et al., 2006). More recently, researchers studying LH traits refer to the  $r$ - $K$  continuum in terms of “fast” (more  $r$ ) and “slow” (more  $K$ ) LH “speeds.” For example, individuals with faster LH speeds likely come from less stable, riskier, and potentially more deprived environments and are expected to develop more quickly, be less risk averse, display higher mating effort, and invest less in children. Conversely, those with slower LH speeds are more likely to inhabit more stable, less risky, and potentially more enriched environments and are more likely to mature more slowly, be more risk averse, exhibit less mating effort, and invest more heavily in fewer children.



While initially studied in terms of interspecies variation, researchers have also documented intra-species variation along the fast-slow continuum. For instance, while humans as a species are very much at the slow/*K* 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 LH speed to predict differences in other traits like personality and behavior (e.g. Figueredo, et al., 2005; 2006; Gladden, Figueredo, & Jacobs, 2009; Rushton, 1985; 2004). Specifically, a slower LH speed has been correlated with increased Openness, Extraversion, Conscientiousness, and Agreeableness as well as decreased Neuroticism on the Five Factor Model (Figueredo et al., 2005; Gladden, Figueredo, & Jacobs, 2009). It has also been linked to better executive functioning (Figueredo et al., 2014; Patch & Figueredo, in press), 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 LH speed and aggression (e.g. Beaver, Wright, & Walsh, 2008; Charles & Egan, 2005; Figueredo et al., 2005).

Researchers have also examined the ability of LH speed indicators to predict criminal behavior (Charles & Egan, 2005; Copping, Campbell, & Muncer, 2013; Minkov & Beaver, 2016; Rushton & Templar, 2009; Templar & Rushton, 2011). Indeed, Boutwell and colleagues (2015) drew upon the existing research on LH speed 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 and colleagues (2013) used UK census data to evaluate the relationship between violent crime and sexual precocity (here measured as rate of teenage pregnancy) in 339 census regions. They 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) compared the rates of LH indicators (e.g. parental absenteeism and adolescent fertility) with more typical criminological variables (e.g. average intelligence and SES) as predictors of national levels of muggings, assaults, and murders across 51 nations. They found that parental absenteeism and adolescent fertility were better predictors 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). Similarly, life expectancy has been found to be significantly negatively related to homicide and rape in a study of 113 nations (Rushton & Templer, 2009). 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).

### *Theories of Rape and Sexually Coercive Behavior*

Criminology does not typically have crime specific theories of behavior, but rather most criminological theory looks at macro level processes to explain criminality more broadly (e.g. Strain theory, Broken Windows theory, Routine Activities theory, or Learning theory). These theories tend to explain criminal behavior as a product of alienation and economic frustration among lower SES individuals (Strain theory; Merton, 1938), or as a product of broken windows (a metaphor for social disarray, vandalism, graffiti, etc) going unfixed and sending the message that nobody cares (Broken Windows theory; Wilson & Kelling, 1982). Some criminological research has also implicated individual level factors, such as low intelligence, as a risk factor for delinquent and criminal behavior (Hirschi & Hindelang, 1977; Moffitt et al., 1981).

With the rise of academic feminism came scholars especially concerned with rape and those who are most often rape victims, women. From a feminist perspective, sexual violence is motivated by a desire for power and control rather than by lust (Brownmiller, 1975; Millett, 1971). So popular did this idea become, that it has been described as a “central theme” of research on rape in the years following Brownmiller’s (1975) book *Against our Will* (Thornhill & Thornhill, 1983; see also Thornhill & Palmer, 2000). Brownmiller (1975) first supports her claim by pointing to the historical treatment of women. She begins by discussing ancient Babylonian and Mosaic law that did not prohibit rape as a crime against women, but as a property crime (i.e. stealing the virginity of a man’s daughter reduced her value in the bridal market). Further evidence comes from the ancient Hebrew treatment of rape, in which the female victim shared equally in the punishment (death by stoning). Numerous other examples of societies in which

women were viewed as property and complicit in their own victimization are offered as the first proof that rape is not about sex, but about power and control (Brownmiller, 1975).

Similarly, it is argued that war and the military are further evidence of the link between male desire for dominance and power and the act of rape. That victorious armies often raped the women in the towns they conquered is described as a method for terrorizing and punishing the opposing side. Additionally, the military itself, as a traditionally male only “club” with a strict hierarchical structure, “confirms for men what they long suspect, that women are peripheral, irrelevant to the world that counts, passive spectators to the action in the center ring” (Brownmiller, 1975, p. 32). Women taken as captives during war is also evidence to Brownmiller of the power/control motive for rape, although in her own words, “[the women were] useful as *wives, concubines, slave labor, and battle-camp trophy*” (1975, p. 33; emphasis added).

Some of the most compelling evidence to support the power and control argument for rape are incidences of group or gang rape, object rape, and rape-murders. If rape were motivated by sexual desire (evolutionarily designed to promote reproduction), the argument goes, then gang rape, object rape, and rape-murders make no sense. In a gang rape, the individual’s sperm would have to compete with the sperm of the other rapists, thus reducing the chances of impregnating the woman with one’s own sperm. In the case of rape with an object, the woman is never inseminated, eliminating the chance of a pregnancy. Lastly, in rape-murders the victim is unable to conceive and bear the rapist’s child as a result of her death. Other arguments include that rape cannot be sexually motivated because many rapists have stable sexual partners, because rape is

premeditated, that the age pattern for committing rape is the same as the age pattern for other violent offenses (i.e. rape is no different than other violent crimes), and that there are high rates of sexual dysfunction among rapists (Brownmiller, 1975; Groth & Hobson, 1983).

There are not many other popular, non-biological theories of sexual assault and rape; however, researchers have suggested that particular experiences and traits may predispose some individuals towards sexually coercive behavior. For example, Marshall and Barbaree (1990) reviewed the existing literature on the etiology of sexual assault and reported that poor family socialization is one factor that may result in young boys not learning how to control their aggression or how to engage in appropriate sociosexual interactions. Societal acceptance of interpersonal violence as a means of settling disputes has also been linked to higher rates of sexual violence (Marshall & Barbaree, 1990). Low self-esteem and a lack of empathy are also risk factors for sexually coercive behavior (Marshall, Marshall, Serran, & O'Brien, 2009).

Despite the widespread popularity of the “not sex” view, some researchers have argued that this perspective has numerous flaws (Bryden & Grier, 2011; Palmer, 1988; Thornhill & Palmer, 2000; Thornhill & Thornhill, 1983). While feminist theories of rape raise valid points and in many cases the desire for power and control may be a motivating factor for rape, such factors are proximal causes and may distract from the ultimate causes of the behavior. A proximal cause is an immediate cause of a behavior (e.g. eating because one is hungry), whereas an ultimate cause explains why a behavior evolved (e.g. organisms who felt hungry when their bodies needed energy were more likely to seek out food and therefore survive long enough to reproduce; for further explanation of proximal

and ultimate causes see Mayr, 1961; but see also Laland et al., 2011). Evolutionary scholars (particularly concerned with ultimate causes) in particular, have disputed the feminist view of rape. Thornhill and Palmer (2000) point to the fact that the majority of rape victims are young, attractive women rather than a random assortment of women as evidence against the argument that rape is a tool through which men attempt to perpetuate the patriarchy. They argue that if the primary motivation of rape is power and control, then rapists should primarily target those who are most vulnerable (e.g. children and the elderly). Furthermore, the existence of rape across every culture studied, as well as in many different insects, birds, fish, reptiles, amphibians, marine mammals, and non-human primates (see Thornhill & Palmer, 2000) would seem to preclude patriarchal socialization as the progenitor of sexually coercive behavior (for a further critique of feminist explanations of rape see Palmer, 1988). However, the existence of rape in other species and the knowledge that rape is at least partially sexually motivated, does little to advance understanding of why specific individuals rape while others do not. An evolutionary explanation of rape needs to involve empirically testable hypotheses.

Some evolutionary explanations of rape have already been tested. For example, the mate deprivation hypothesis suggests that males who have limited access to, or resources to attract, mates may be more likely to engage in sexual coercion (e.g. Thornhill & Thornhill, 1983). Contrary to the hypothesis, however, tests of this hypothesis 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).

*Life History Theory and Rape/Sexual Coercion*

At the individual trait level, some LH indicators have been linked to rape and sexually coercive behavior (Capozza, 1997; Lalumiere, Harris, Quinsey, & Rice, 2005; Lalumiere & Quinsey, 1996; Rubenstein, Yeager, Goodstein, & Lewis, 1993). Specifically, higher mating effort is positively correlated with sexually coercive behavior (Lalumiere, Harris, Quinsey, & Rice, 2005; Lalumiere & Quinsey, 1996). Similarly, earlier sexual debut has been connected to later arrest for sexual assault (Capozza, 1997; Rubenstein et al., 1993). It must be noted, however, that incidences of sexual abuse may have been included as sexual debuts. 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).

Despite the growing body of research connecting LH speed to aggression, violence, and crime (e.g. Beaver, Wright, & Walsh, 2008; Charles & Egan, 2005; Copping, Campbell, & Muncer, 2013; Figueredo et al., 2005; Minkov & Beaver, 2016; Rushton & Timpler, 2009; Timpler & Rushton, 2011), and the existence of research connecting indicators of LH speed to sexually coercive behavior (e.g. Capozza, 1997; Lalumiere, Harris, Quinsey, & Rice, 2005; Lalumiere & Quinsey, 1996; Rubenstein, Yeager, Goodstein, & Lewis, 1993), there is a relative paucity of research looking specifically at rape and sexual coercion from a LH perspective. 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. Willingness to use sexual coercion was positively associated with short term mating preferences and negatively related to long term mating preferences. Similarly, hypothetical life

expectancy was related to willingness to engage in sexual coercion, such that when asked to imagine a short life expectancy, participants were significantly more willing to use coercion than when asked to imagine a long life expectancy (Dunkel & Mathes, 2011). Importantly, self-reported willingness to engage in a behavior is not the same as engaging in said behavior.

Gladden, Sisco, & Figueredo (2008) administered the Mini-*K* (Figueredo et al., 2006), a 20-item inventory that measures overall life history strategy, to 324 college students. The Mini-*K* asks questions about a variety of LH traits including parental attachment, romantic attachment, planfulness, sexual attitudes, and risk taking behavior, with scores loading onto a *K*-factor. A high score on the *K*-factor means the individual is more *K*-selected or has a slower LH speed. In their study, Gladden and colleagues (2008) found faster LH speeds, as evidenced by low scores on the Mini-*K*, to predict self-reported sexually coercive behavior.

At the population level, Rushton and Timpler (2009) compared the ability of various LH indicators to predict between-nations differences in assault, rape, and homicide rates with traditional variables like IQ and PPP-GNI (Purchasing Power Parity Gross National Income; a measure of per capita income). In a comparison of 113 countries, life expectancy was found to be significantly, negatively related to rape rates. Furthermore, life expectancy was more strongly associated with rape rates than was PPP-GNI. The average birth rate and infant mortality were not significantly related to rape rates (Rushton & Timpler, 2009).



## **Current Study**

Overall, despite the substantial link between indicators of LH speed and criminal behavior, there is only initial evidence linking LH speed to rape and sexually coercive behavior. Additionally, the existing research has many weaknesses, including small sample size (Capozza, 1997; Lalumiere & Quinsey, 1996; Rubenstein et al., 1993), a reliance on student samples (Dunkel & Mathes, 2011; Gladden, et al., 2008), and a lack of more comprehensive measures of LH speed (Gladden, et al., 2008). The current study adds to the existing body of research by replicating and extending previous findings using a larger sample and more extensive measures.

In Part One, the ability of variation in LH indicators including parental absenteeism, adolescent fertility, and life expectancy to predict differences in rape rates between the 50 U.S. states was evaluated. Furthermore, the strength of the relationship was evaluated while controlling for other common risk factors for crime, including each state's estimated mean IQ and GDP-per capita. Based on prior research (e.g. Minkov & Beaver, 2016; Rushton & Timpler, 2009), it was hypothesized that life expectancy, adolescent fertility, and parental absenteeism would be strongly related to rape rates. It was also expected that these LH indicators would account for more of the variance in rape rates than GDP and possibly, even more than IQ.

In Part Two, a sample of U.S. adults was used to assess the ability of psychometric measures of LHS to predict rape and sexually coercive behavior at the individual level. It was hypothesized that higher scores on a psychometric measure of LHS (higher scores indicate a slower LHS) would be negatively related to self-reported sexually coercive behavior, rape, and willingness to engage in such behaviors. It was also

hypothesized that psychometric LHS would be a stronger predictor than demographic variables (e.g., age, sex, SES) that have been traditionally associated with criminality in previous research. Because low intelligence has also been associated with increased delinquency and criminal offending (Ellis & Walsh, 2003; Moffitt et al., 1981), a vocabulary test was also administered as a proxy for intelligence.

## CHAPTER II

### Method

#### Participants

For the first part of the study, 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 the second part of this study, participants were recruited using Amazon's Mechanical Turk (MTurk). 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, .6% Other). The average age was 35 years old (SD = 10.6 years).

#### Measures

*Population Level Data.* For the archival portion of the study, I used population data from U.S. states. I used officially reported rape rates from the FBI's Uniform Crime Report. For socioeconomic data, I used Gross Domestic Product (GDP) per capita as reported by the Bureau of Economic Analysis. I used the estimated state IQ levels reported by Kanazawa (2006). I also used state level life expectancy data compiled by the non-profit Henry J. Kaiser Family Foundation. For adolescent fertility, I used data on teen (15-19) birth rates for each state compiled by the Centers for Disease Control.

Parental absenteeism was calculated using the rate of single-parent households (single father, single mother) per 100 households with children (data gathered from the Kids Count data center) and the total number of children for each state (U.S. Census Bureau).

The following measures were administered to MTurk participants:

***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 individual's Life History strategy. The ALHB psychometrically measures individual differences on eight related, graded facets: *Mini-K, Insight, Planning and Control, Mother/Father Relationship Quality, Family Social Contact and Support, Friends Social Contact and Support, Experiences in Close Relationships, General Altruism, and Religiosity*. The ALHB has been found to have good internal consistency and to converge strongly with other psychometric measures of LH strategy (Olderbak et al., 2014). The 8 scales of the ALHB are scored by taking the arithmetic mean of the items that comprise each scale. A subject's total score for the battery, in a sample of less than 300-500 subjects, is calculated by taking the arithmetic mean of the standardized (z) scores of his or her scale scores.

***Wordsum.*** The Wordsum is a 10 item, multiple choice vocabulary test that has been included in at least 16 waves of the General Social Survey, a nationally representative survey of U.S. adults that has been conducted by the National Opinion Research Center since 1972. For each item, respondents are presented with a target word and asked to choose which of five other word options is closest in meaning to the target word. Wordsum test scores correlate significantly with IQ scores ( $r = .71$ ; Wolfe, 1980).

**Demographics.** Participants were asked to report their age, sex, gender, race, and socioeconomic status (SES).

**Rape Proclivity Measure.** The Rape Proclivity Measure (RPM; Bohner, Reinhard, Rutz, Sturm, & Kerschbaum, 1998) assesses participants' self-reported likelihood of committing rape. The measure consists of five vignettes that describe realistic situations of acquaintance rape (varying in severity) and directs participants to imagine themselves in the position of the male character in each scenario. The wording in each scenario was adapted to fit American English as needed (e.g., "flat" changed to "apartment"). Furthermore, the vignettes were modified to create a "female perpetrator" version for female participants. After reading each scenario, participants were asked to respond to the following items, presented on 7-point scales: "In this situation, how aroused would you be?" "In this situation, would you have done the same?" and "In this situation, how much would you enjoy getting your way?" The RPM has been found to have good validity using the first four of the five scenarios (Eyssel, Bohner, & Siebler, 2006).

**Sexual Experiences Survey.** The Sexual Experiences Survey (SES; Koss et al., 1987) is a 20 item self-report measure of perpetration of nonconsensual sexual behavior. The SES consists of descriptions of various types of perpetration, ranging in severity from unwanted kissing to rape. Participants indicated whether or not they have engaged in each behavior since the age of 14.

**Validity Indicator.** Six items from a validity indicator were dispersed throughout the survey. These items consist of statements that participants are expected to deny, such as "I enjoy stealing from graves" and "I'm allergic to water." Participants who failed

more than two of these checks, by giving very unusual or impossible answers, were excluded from all analyses.

### **Procedure**

The archival data were downloaded from the various sources outlined above, compiled into a single dataset, and analyzed according to the analysis plan.

Participants for part two were recruited on Amazon's Mechanical Turk (MTurk). MTurk is a website where individuals can perform tasks, such as completing surveys, in exchange for financial compensation. Participants for this study were presented with a Participant Information Sheet, which contained all of the information in a traditional informed consent. In lieu of a signed consent, consenting participants checked an affirmative box indicating their consent before proceeding. Participants who completed the survey according to the given requirements were compensated USD \$2.00. The specifications for satisfactory completion of the survey were: being an adult, cisgender heterosexual, having a U.S. based IP address, and passing the validity checks placed throughout the survey. Participants ( $n = 16$ ) who failed too many validity checks or who did not complete all of the study measures were excluded from all analyses, for a final sample of 162.

At the end of the survey, participants were presented with a debriefing statement (see Appendix B), which repeated the purpose of the study, and reminded them of the confidentiality/anonymity of their responses. It also presented them with a national hotline number, should they experience psychological distress, as well as the contact information for the researchers and the university institutional review board, should they have questions or concerns.

## **Analysis Plan**

**Part One.** Hypothesis 1: It was hypothesized that the state level variation in LH indicators (e.g. teen birth rate, parental absenteeism rates), GDP per capita, and estimated State IQ would be related to state level variation in officially reported rape rates at the bivariate level, with indicators of a faster average LH speed (e.g. higher teen birth rate) being positively related to rape rates and GDP per capita and estimated IQ being negatively related state rape rates. This hypothesis was tested by running bivariate correlation analyses on the compiled data.

Hypothesis 2: It was hypothesized that the LH variables would account for more of the variance in state's rape rates. This hypothesis was tested by running a linear regression with rape rate as the dependent variable and the LH indicators, GDP per capita, and estimated IQ as covariates.

**Part Two.** Hypothesis 1: It was hypothesized that scores on the Arizona Life History Battery would be associated with self-reported willingness to perpetrate and perpetration of sexually coercive behaviors (measured via answers on the Rape Proclivity Measure and Sexual Experiences Survey), such that higher scores on the ALHB (indicative of a slower LH speed) would be negatively related to sexually coercive behavior. This hypothesis was evaluated by assessing the bivariate correlations between these variables. Income level and vocabulary test scores were also included in the bivariate analyses.

Hypothesis 2: It was hypothesized that scores on the ALHB would be more predictive of sexually coercive behavior and attitudes than any of the other covariates (age, sex, race, SES, vocab test score). This hypothesis was tested by using a hierarchical

linear regression with vocabulary scores, SES, age, sex, and race entered in Step 1 and scores on the ALHB entered in Step 2 to assess the unique contribution of psychometric LH speed scores to the prediction of sexually coercive behavior.



## CHAPTER III

### Results

#### Part 1: Population Level Data

Descriptive statistics for each study variable is located in Table 1. I ran bivariate analyses to assess the associations between the study variables. The results of these tests are located in Table 2. Gross Domestic Product per capita, estimated average IQ, life expectancy, rate of households headed by a single mother or parent were not significantly related to state rape rates. Two of the population LHS indicators, number of households headed by a single-father per 100 households with children  $r(48) = .31, p < .05$ , and teen birth rates,  $r(48) = .38, p < .01$ , were positively associated with state rape rates.

**Table 1.** Descriptive statistics for population level variables

	Mean	SD	Min	Max
Rape Rate	39.89	14.76	14.30	104.70
GDP per capita	\$48,272	\$9,057	\$31,633	\$67,705
Estimated Avg. IQ	93.80	13.11	62.70	110.30
Teen Birth Rate	22.65	7.40	9.40	38.00
Life Expectancy	78.66	1.66	75.00	81.30
Single Mother HH	.25	.05	.13	.37
Single Father HH	.08	.01	.05	.11
Single Parent HH	.33	.05	.18	.45

*Note.* Rape rates are per 100,000 people. Teen Birth rates are per 1,000 women aged 15-19. Life expectancy is reported in years. Single Mother HH = rate of households headed by single mothers per 100 households with children. Single Father HH = rate of households headed by single fathers per 100 households with children. Single Parent HH = rate of households headed by single parents per 100 households with children.

Next, I conducted a regression analysis to further evaluate the unique contributions of each variable in predicting state rape rates. The results of the regression analysis are displayed in Table 3. These results indicated that the predictors accounted for 31% of the variance in state rape rates ( $R^2 = .31$ ,  $F(6, 43) = 3.206$ ,  $p = .011$ ). At the multivariate level, single-father headed households was not a significant predictor ( $\beta = .21$ ,  $p = .141$ ), but teen birth rate retained significance,  $t(49) = 2.512$ ,  $p = .016$ , and was a strong predictor ( $\beta = .625$ ) of state rape rates. None of the other predictors were significantly related to variation in state rape rates at the multivariate level.

**Table 2.** Correlations between population level variables

	State Rape Rates
GDP per capita	-.00
Estimated Avg. IQ	-.25
Teen Birth Rate	.38**
Life Expectancy	-.12
Single Mother HH	-.14
Single Father HH	.31*
Single Parent HH	-.06

*Note.* Rape rates are per 100,000 people. Teen Birth rates are per 1,000 women aged 15-19. Life expectancy is reported in years. Single Mother HH = rate of households headed by single mothers per 100 households. Single Father HH = rate of households headed by single fathers per 100 households. Single Parent HH = rate of households headed by single parents per 100 households. \* =  $p < .05$ ; \*\* =  $p < .01$ .

**Table 3.** Regression Analysis with state rape rates regressed onto population variables.

	$\beta$	$p$
GDP per capita	.17	.286
Estimated avg. IQ	-.06	.723
Teen Birth Rate	<b>.63</b>	<b>.016</b>
Life Expectancy	.24	.385
Single Mother HH	-.15	.355
Single Father HH	.21	.141

Note. GDP per capita = Gross Domestic Product per capita in dollars. Teen Birth Rate = Rate of births to mothers age 15-19 per 1,000 women age 15-19. Life expectancy is listed in years. Single Mother HH = Rate of households headed by a single mother per 100 households. Single Father HH = Rate of households headed by a single father per 100 households.

## Part 2: Individual Differences in LH Speed and Sexually Coercive Behavior

Descriptive statistics for individual level study variables are located in Table 4. It is noted that there were low rates of endorsement of all types of sexually coercive behavior in this sample. First, bivariate analyses were conducted to ascertain the associations between the predictor and outcome variables. The results of these analyses are located in Table 5. Total scores on the Arizona Life History Battery were significantly and inversely related to reported arousal,  $r(160) = -.30, p < .01$ , and willingness to engage in the same behavior,  $r(160) = -.15, p < .05$ , on the Rape Proclivity Measure. ALHB total scores were not significantly related with any of the 5 categories of self-reported sexually coercive behavior on the Sexual Experiences Survey.

**Table 4.** Descriptive statistics for individual level variables.

	N (%)	Possible Range	Mean	SD	Min	Max
Age			35.86	10.63	19	67
Sex (Male)	94(58)					
Race (Caucasian)	127(78.4)					
Income						
< \$20,000	26(16)					
\$20,00-40,000	55(34)					
\$40,000-70,000	48(29.6)					
\$70,000-100,000	24(14.8)					
>\$100,000	9(5.6)					
Vocab Score		0-10	7.45	1.67	2	10
SES Non-Contact		20-80	22.32	6.68	18	75
SES Contact		22-88	23.15	5.78	20	70
SES Coercion		24-96	25.30	5.89	24	62
SES Attempt Rape		66-264	68.90	15.78	66	171
SES Rape		66-264	69.37	17.10	66	175
RPM Action		5-35	7.01	4.51	5	27
RPM Arousal		10-70	17.66	11.94	10	55
ALHB Total		-	0	0.64	-1.74	1.77
Mini-K		-3-3	.94	.94	-1.50	2.95
Insight		-3-3	1.36	.99	-2.85	3.00
Parent		0-3	1.64	.60	.00	3.00
Family Social		0-3	1.38	.76	.00	3.00
Friends Social		0-3	1.33	.75	.00	3.00
Close Relationships		-3-3	1.52	1.21	-1.72	3.00
Altruism		-3-3	.38	.93	-2.07	2.66
Religiosity		-3-3	-1.44	1.65	-3.00	2.59

Note. SES = Sexual Experiences Survey. RPM = Rape Proclivity Measure. ALHB = Arizona Life History Battery. Insight = ALHB Insight, Planning, and Control. Parent = ALHB Mother/Father Relationship Quality. Family Social = Family Social Contact and Support. Friends Social = Friends Social Contact and Support. Close Relationships = ALHB Experiences in Close Relationships.

**Table 5.** Correlations between individual level variables

	SES Non- Contact	SES Contact	SES Coercion	SES Attempt	SES Rape	RPM Action	RPM Arousal
Income	.03	.02	.06	.02	.03	.04	-.02
Vocab	-.15*	-.22**	-.23**	-.23**	-.22**	-.24**	-.10
ALHB Total	-.13	-.08	-.11	-.10	-.12	-.15*	-.30**
Mini-K	-.23**	-.16*	-.20**	-.18*	-.20**	-.21**	-.31***
Insight	-.22**	-.18*	-.21**	-.19*	-.21**	-.28***	-.27**
Parent	-.07	-.05	-.07	-.08	-.07	-.09	-.17*
Family	.04	.05	.06	.05	.05	-.02	-.19*
Friends	.03	.03	.02	.02	.01	-.03	-.13
Close Rel	-.29***	-.21**	-.24**	-.21**	-.22**	-.32***	-.35***
Altruism	-.07	-.04	-.05	-.04	-.06	-.08	-.25**
Religiosity	.14	.13	.14	.10	.11	.24**	.14

*Note.* ALHB Tot = Arizona Life History Battery total score. Insight = ALHB Insight, Planning, and Control. Parent = ALHB Mother/Father Relationship Quality. Family = ALHB Family Social Support. Friends = ALHB Friends Social Support. Close Rel = ALHB Experiences in Close Relationships. \* =  $p < .05$ ; \*\* =  $p < .01$ ; \*\*\* =  $p < .001$

In regards to the ALHB subscales, scores on the *Mini-K scale*, which is a short version of the total measure, were negatively associated with self-reported sexually coercive behavior on all 5 scales of the Sexual Experiences Survey ( $r(160) = -.16, p < .05$  [SES Contact] -  $r(160) = -.23, p < .01$  [SES Non-Contact]), as well as self-reported arousal,  $r(160) = -.31, p < .001$ , and willingness to engage in the same behavior,  $r(160) = -.21, p < .01$ , on the RPM. The *Insight, Planning, and Control* scale was also significantly and inversely linked to all of the scales on the SES ( $r(160) = -.18, p < .05$  [SES Contact] -  $r(160) = -.22, p < .01$  [SES Non-Contact]) and RPM ( $r(160) = -.27, p < .01$  [RPM Arousal] -  $r(160) = -.28, p < .001$  [RPM Action]), such that lower scores on this scale predicted higher levels of past sexually coercive behavior and higher self-reported proclivity for similar behavior in the future. Similar associations were also found with the *Experiences in Close Relationships* scale, suggesting that those who report less secure romantic attachments are more likely to report engaging in sexual coercion ( $r(160) = -.21, p < .01$  [SES Contact; SES Attempted Rape] -  $r(160) = -.29, p < .001$  [SES Non-Contact]), and showing a higher proclivity for sexual coercion ( $r(160) = -.32, p < .001$  [RPM Action] -  $r(160) = -.35, p < .001$  [RPM Arousal]).

The remaining subscales were less consistently related to the SES and RPM. The *Family Social Contact and Support* ( $r(160) = -.19, p < .05$ ) and *Altruism* ( $r(48) = -.25, p < .01$ ) scales were only negatively associated with reported arousal. The *Religiosity* scale was positively related to reported willingness to engage in the same behavior on the RPM,  $r(160) = .24, p < .01$ . The remaining ALHB scales were not significantly related to any scale on either the SES or RPM.

The significant associations were further explored at the multivariate level, and the results of the hierarchical linear regression models are shown in Tables 6 and 7. Demographic variables (age, sex, and race dichotomized with 0 = white and 1 = non-white) were entered in Step 1, and the potential criminogenic risk factors (annual income and vocab scores) were entered along with the significantly correlated ALHB scale scores in Step 2 for each model.

As the only significantly related scales at the bivariate level, the *Insight, Planning and Control* and *Experiences in Close Relationships* scales of the ALHB were entered along with the other covariates as predictors of SES Non-contact offending. The total model accounted for 11% of the variance in self-reported non-contact sexual offending ( $R^2 = .11$ ,  $F(7, 154) = 2.683$ ,  $p = .012$ ). *Experiences in Close Relationships* was the only variable found to be a significant predictor ( $\beta = -.21$ ,  $p = .016$ ) of non-contact sexually coercive behavior (e.g., flashing, sending unwanted explicit pictures, etc.). In the remaining models, no variables were significantly predictive of SES Contact offending, Coercion, Attempted Rape, or Rape.

With regards to the RPM, biological sex ( $\beta = -.18$ ,  $p = .017$ ) and ALHB *Insight, Planning and Control* ( $\beta = -.21$ ,  $p = .013$ ), *Experiences in Close Relationships* ( $\beta = -.18$ ,  $p = .036$ ), and *Religiosity* ( $\beta = .32$ ,  $p < .001$ ) were all significant predictors of reported willingness to perform actions on the RPM, such that being male, being lower on insight, planning, and control, having less secure romantic attachments, and being higher on religiosity predicted a higher self-reported proclivity toward rape. Finally, *Experiences in Close Relationships* ( $\beta = -.29$ ,  $p = .001$ ) was the only significant predictor of reported arousal on the RPM.

**Table 6.** Hierarchical regression analyses with ALHB scales and covariates regressed onto SES scales.

	$R^2/\Delta R^2$	$\beta$	$p$
<b>SES Non-Contact</b>			
<u>Step One</u>	.03		
Age		-.04	.598
Sex		<b>-.16</b>	<b>.045</b>
Race		-.12	.152
<u>Step Two</u>	.08		
Age		-.01	.907
Sex		-.12	.124
Race		-.12	.134
Income		.06	.482
Vocab		-.05	.528
Insight		-.09	.313
Close Relationships		<b>-.21</b>	<b>.016</b>
<b>SES Contact</b>			
<u>Step One</u>	.02		
Age		-.06	.482
Sex		-.11	.162
Race		-.10	.248
<u>Step Two</u>	.05		
Age		-.03	.696
Sex		-.08	.330
Race		-.11	.154
Income		.06	.490
Vocab		-.12	.154
Insight		-.07	.444
Close Relationships		-.13	.150
<b>SES Coercion</b>			
<u>Step One</u>	.05		
Age		-.10	.200
Sex		<b>-.19</b>	<b>.018</b>
Race		-.10	.226
<u>Step Two</u>	.06		
Age		-.08	.315
Sex		-.14	.065

(continued)



	$R^2/\Delta R^2$	$\beta$	$p$
Race		-.10	.208
Income		.11	.156
Vocab		-.12	.119
Insight		-.08	.353
Close Relationships		-.16	.079
<b>SES Attempt Rape</b>			
<u>Step One</u>	.04		
Age		-.13	.111
Sex		-.15	.060
Race		-.10	.209
<u>Step Two</u>	.05		
Age		-.11	.192
Sex		-.11	.153
Race		-.11	.170
Income		.07	.377
Vocab		-.13	.100
Insight		-.08	.386
Close Relationships		-.12	.197
<b>SES Rape</b>			
<u>Step One</u>	.04		
Age		-.12	.148
Sex		-.15	.053
Race		-.11	.195
<u>Step Two</u>	.06		
Age		-.09	.254
Sex		-.11	.149
Race		-.11	.161
Income		.08	.343
Vocab		-.12	.147
Insight		-.10	.261
Close Relationships		-.13	.153

Note. Significant values are bolded. Income = Current annual income. Vocab = Vocabulary test scores. Insight = ALHB Insight, Planning, and Control. Close Relationships = ALHB Experiences in Close Relationships.

**Table 7.** Hierarchical regression analyses with correlated ALHB scales and covariates regressed onto RPM scales.

	$R^2/\Delta R^2$	$\beta$	$p$
<b>RPM Action</b>			
<u>Step One</u>	.04		
Age		-.07	.384
Sex		<b>-.18</b>	<b>.028</b>
Race		.00	.999
<u>Step Two</u>	.20		
Age		-.11	.154
Sex		<b>-.18</b>	<b>.017</b>
Race		-.06	.429
Income		.09	.220
Vocab		-.06	.416
Insight		<b>-.21</b>	<b>.013</b>
Close Relationships		<b>-.18</b>	<b>.036</b>
Religiosity		<b>.32</b>	<b>&lt;.001</b>
<b>RPM Arousal</b>			
<u>Step One</u>	.03		
Age		.00	.995
Sex		<b>-.18</b>	<b>.028</b>
Race		-.03	.699
<u>Step Two</u>	.15		
Age		.04	.586
Sex		-.13	.107
Race		-.02	.829
Income		-.03	.733
Vocab		-.01	.862
Insight		-.03	.747
Close Relationships		<b>-.29</b>	<b>.001</b>
Parent Relationships		-.00	.962
Family Social Support		-.08	.384
Altruism		-.13	.193

Note. Significant values are bolded. Income = Current annual income. Vocab = Vocabulary test scores. Insight = ALHB Insight, Planning, and Control. Close Relationships = ALHB Experiences in Close Relationships. Parent Relationships = ALHB Mother/Father Relationship Quality.

## CHAPTER IV

### Discussion

The current study sought to add to the existing literature on the etiology and risk factors for sexually coercive behavior. Although many of the social factors related to such behavior have been extensively studied through decades of feminist scholarship, possible biological influences and evolutionary explanations have seen less exploration. I attempted to help close this gap in the literature by examining how Life History Speed variables were related to sexually coercive behavior at the population (between states) and individual differences level. It was predicted that indicators of a faster LHS would be robust predictors of sexually coercive behavior at both the population and individual differences level, even to the extent of out-performing other demographic and criminogenic variables (i.e., low SES and low intelligence).

#### *Population Level*

Indicators of each of the 50 U.S. states' average life history speed (e.g., life expectancy, teen birth rate, parental absenteeism) were compared with more traditional criminogenic variables (GDP per capita and estimated IQ) as predictors of state level variation in rape rates. Multivariate analyses indicated that a state's teen birth rate was the best predictor of its rape rate. This finding, along with other research demonstrating that adolescent fertility is a better predictor than IQ and SES variables of cross-nation differences in violent crime (Minkov & Beaver, 2016), suggests that teen pregnancy is a robust predictor of a population's level of violent and sexual offending. This is an important finding in support of LHT as it suggests that higher levels of early reproduction, which according to LH Theory would be expected of a faster LH strategy

or pace of life (Stearns, 1992), are associated with higher levels of aggression and mating effort (proximal causes of violence and sexual coercion).

The finding that estimated IQ and SES variables are also inversely related to population differences in rape rates (Rushton & Timpler, 2009) was not replicated. Thus, the population level hypotheses were partially supported, in that a LHS indicator (teen birth rate) was the best predictor of variation in sexually coercive behavior, but the remaining LHS variables were not significantly related after controlling for other factors. One possible explanation for the lack of significant findings, is that data were aggregated at the state level, which may be too broad. That is, the 50 U.S. states vary greatly in their geographic size, population density, population homogeneity, among other factors. It is possible that socioeconomic factors are less related to antisocial behavior in rural settings compared to urban settings (Connolly, Lewis, and Boisvert, 2017), and thus the variation between states in the proportion of the population living in rural and urban environments may be a confounding factor. Similarly, states vary greatly in their levels of traditional or conservative values regarding sexual activity and the topics covered in public school sexual education, and thus potentially variation in condom usage, which may all suppress the relationship between these variables and offending. It is plausible that examining these variables at the county, city, or neighborhood level, especially if able to control for factors like urban vs rural settings and population density, could result in stronger associations between these variables.

#### *Individual Differences Level*

Psychometrically measured Life History Speed was assessed using the ALHB and compared to demographic variables as well as income and verbal intelligence (assessed

through scores on a vocabulary test). Modest inverse associations were found between scores on the ALHB and both self-reported perpetration and proclivity to perpetrate sexually coercive behavior. This supports previous research, which has found psychometrically measured LHS (Gladden, Sisco, and Figueredo, 2008), short term mating strategies (Dunkle & Mathes, 2011) and experimentally manipulated hypothetical life expectancy (Dunkel & Mathes, 2011) all predicted higher levels of self-reported perpetration of, or proclivity for, sexually coercive behavior.

Upon further testing at the multivariate level, the associations between psychometric LHS and sexual coercion were more mixed. Lower scores on the *Insight, Planning, and Control* scale of the ALHB predicted non-contact sexual offending, but otherwise no aspect of psychometric LHS predicted self-reported sexually coercive behavior after controlling for other factors. One possible reason for the lack of significant relationships at the multivariate level is that the regression analyses all include age, sex, and race as covariates. Many of the scales on the ALHB measure traits that could be expected to vary by age. For example, *Insight, Planning and Control* seems to measure traits like self-control which have been found to increase with age, both from childhood to adulthood (Moffitt et al., 2011) and throughout adulthood (Helson & Wink, 1992). Similarly, the *Experiences in Close Relationships* scale is a measure of how secure one is in his or her romantic attachments, and it is reasonable to expect that older participants may be more likely to be married and more securely attached than younger participants.

Biological sex may also be an important variable in evaluating the relationships between the study variables. Although some research has found inconsistent or negligible sex differences in LHS (Sherman, Figueredo, & Funder, 2013), other research has found

both that females exhibited a slower LHS and that LHS mediated the relationship between sex and sexually coercive behavior (Gladden, et al., 2008). The current study is underpowered to examine potential sex differences, but it remains a possibility that there may be some variation in LHS across sex. Future research should continue to examine this relationship.

Finally, there is the possibility that race differences in average LHS could exist. This possibility has been tested at the population level (i.e., comparing across nations) and has found some support (e.g., Rushton & Timpler, 2009); however, the posited explanation (that those of African descent have a faster LHS due to less stable ancestral environments compared to those of European descent) remains controversial due to concerns that it could be used to argue an innate racial disposition toward some of the less desirable fast LH traits (higher aggression and risk taking, less parental investment, etc.). From a strictly modern environmental perspective, however, it could also be assumed that within the United States (from which the current sample was drawn) there could be racial differences in average LHS due to the higher rates of poverty, disadvantage, and discrimination faced by racial minorities.

With regards to the RPM, lower scores on ALHB *Insight, Planning and Control* and *Experiences in Close Relationships* scales significantly predicted a higher self-reported proclivity to rape. The inverse relationship between rape proclivity and ALHB *Insight, Planning and Control* and *Experiences in Close Relationships* makes theoretical sense given that these scales seem to measure self-control/executive functioning (EF) and romantic attachment, respectively, and low EF and romantic detachment or disinterest are related to other risk factors such as psychopathy and antisocial behavior (Morgan &

Lilienfeld, 2000). Surprisingly, higher scores on the religiosity scale also predicted a higher self-reported rape proclivity, although some research has reported a positive relationship between religiosity and rape myth acceptance (Barnett, Sligar, & Wang, 2016).

### *General Discussion*

Although the predictions for the current study were only partially supported, there is evidence that indicators of a faster LHS can be viewed as modest risk factors for a propensity toward sexually coercive behavior. This lends additional support to past research, which has found that various fast LHS traits, such as a higher mating effort (Lalumiere, Harris, Quinsey, & Rice, 2005; Lalumiere & Quinsey, 1996) and an earlier sexual debut (Capozza, 1997; Rubenstein et al., 1993), predict sexual coercion. Taken together, these findings suggest that a faster LH strategy can elevate one's risk for sexual offending due to increased mating effort, decreased romantic attachment, and decreased self-control. This has implications for prevention strategies in that it offers additional areas to target and highlights populations that may benefit most from such interventions. For example, interventions to increase self-control could complement existing efforts to teach consent, combat rape myths, and promote gender egalitarian values, and could be most effective in disadvantaged communities where resource stability is lowest. Relatedly, system level policies, which act to increase environmental stability (reducing poverty, school lunch programs, and after school programs to promote positive social contact and support) are equally important to complement the more focused interventions.

Furthermore, there are some limitations of the current study that may help explain why more significant relationships were not found at both the population and individual differences levels. As previously discussed, there is a large degree of variation between states with regards to factors like population density and homogeneity that could not be controlled for. Regarding individual differences, rape has a relatively low base rate in the population, which makes very large samples important in order to have enough power to detect an effect. Although the current study included a modest sample ( $N = 162$ ), a larger sample would be much more likely to detect an effect if one exists. Indeed, few individuals in the current sample endorsed a history of sexually coercive behavior, especially rape or attempted rape. Relatedly, sexually coercive behavior is disproportionately committed by males, so a much larger sample of males is also needed. Grant funding in this area of research will be important moving forward to enable recruitment of larger samples. Forensic samples, as well as very diverse (with regards to SES and childhood background) community samples are also needed.

A second possible factor hindering the investigation of a LHS-sexual coercion link, was the use of only a psychometric measure of LHS for the individual level analyses. Although previous research has found a link between psychometric LHS and self-reported sexually coercive behavior (Gladden, Sisco, & Figueredo, 2008), that study utilized a latent variable comprised of a very brief (20 item) measure of LHS along with other scales, which measured traits such as aggression and psychopathy. Although these traits are theoretically related to LHS, and the factor loadings for the scales were moderately strong (.45 - .71), other research has suggested that some of these traits, especially psychopathy, may only be orthogonally related to LHS (Gladden, Figueredo,



& Jacobs, 2009; Sefcek, 2007). Thus, it is unclear whether the predictive validity of the latent K factor they created was driven by true LHS traits or by other less related traits (e.g., psychopathy). If driven by orthogonally related traits, this would mean that there is relatively little support for a relationship between psychometric LHS and actual perpetration of sexually coercive behavior. Furthermore, some in the field of LH research have questioned the validity of psychometric measures of LHS, arguing that they do not correlate well with biometric measures of LHS such as age at sexual debut (Copping, Campbell, & Muncer, 2014). Although proponents of these measures have argued that novel, human specific factors (e.g., the welfare state, legally enforced monogamy and child support, contraceptives) may obfuscate the relationships between biometric and psychometric LHS indicators and that it is, therefore, acceptable that these two types of measures do not converge, it remains a possibility that current psychometric measures do not fully capture an individual's LHS. Future research, particularly longitudinal, genetically sensitive studies, will be important to evaluate the effects of environmental factors on biometric and psychometric variables and to assess how biometric and psychometric measures converge (or not) in larger samples over time.

Despite these limitations, the current study also has some strengths and makes a significant contribution to the literature. First, the sample utilized at the subject level was a community sample representing greater diversity in age and background than the undergraduate samples used in previous research (e.g., Gladden, et al., 2008). Future research should further evaluate the relationship between LHS and sexually coercive behavior utilizing larger samples, especially of males, and alternative measures including both psychometric and biometric methods to compare how the different approaches

capture LHS. Second, it offers additional support of the link between LHS and sexually coercive behavior from multiple levels of analysis (population and individual differences). This extends our understanding of the etiology of sexually coercive behavior beyond the typical criminological and feminist explanations of poverty and a sexist society by adding an evolutionary explanation. In other words, being more sexually aggressive itself, or traits that increase the likelihood of engaging in such behavior (aggression, low risk aversion, impulsivity), may have served an adaptive function in certain risky and less stable ancestral environments and thus been passed down genetically. At the same time, these traits may arise, or be exacerbated, and perform a defensive, adaptive function in individuals born into dangerous and deprived environments today.

Although the current study offered some support for LHT as a supplemental explanatory hypothesis of sexual offending in combination with existing theories (broad criminological theory and feminist theories of rape), more work is still needed. Specifically, genetically sensitive (e.g., twin samples) and longitudinal samples will be needed to further unpack the contributions of genetic, shared environmental, and nonshared environmental factors on the development of LHS, as well as to further examine what specific environmental factors and LHS traits are most important for understanding sexually coercive behavior. The clearer the etiology of these behaviors becomes, the more effective we will be in developing intervention and prevention policies.

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## VITA

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### EDUCATION

2018 **M.A. Psychology (expected)**

Sam Houston State University

2016 **B.A. Psychology (Summa Cum Laude)**

Saint Louis University

Majors: Psychology and Criminal Justice

### HONORS, AWARDS, AND SCHOLARSHIPS

2017 College of Humanities and Social Sciences Scholarship (Spring semester)

2016 Psi Chi Research Award

2015 Criminal Justice Department Research Travel Award (\$1,200)

2015 Knoedler Undergraduate Research Fund Award (\$500)

2015 Criminal Justice Department Merit Scholarship

2012-2016 Presidential Scholarship Finalist

2012-2016 Dean's List, College of Arts & Sciences

### PUBLISHED MANUSCRIPTS

Kavish, N., Vaughn, M., Cho, E., Barth, A., Boutwell, B., Vaughn, S., Capin, P.,

Stillman, S., and Martinez, L. (2017). Physiological arousal and juvenile

psychopathy: Is low resting heart rate associated with affective dimensions?

*Psychiatric Quarterly*, 88(1), 103-114.

Kavish, N., Bailey, C., Sharp, C., & Venta, A. (In Press). On the relation between general

intelligence and psychopathic traits: An examination of inpatient

adolescents. *Child Psychiatry and Human Development*.

## MANUSCRIPTS UNDER REVIEW

Kavish, N., Connolly, E. J., Boutwell, B. B., (Under Review). Additive genetic and environmental contributions to the longitudinal association between violent victimization and depression. *Development and Psychopathology*.

## BOOK CHAPTERS

**Kavish, N.**, Fowler-Finn, K., & Boutwell, B. (2017) Criminology's Modern Synthesis: Remaking the Science of Crime with Darwinian Insight. In T. Shackelford & V. Zeigler-Hill (Eds.) *The evolution of psychopathology* (p. 171-183).

## CONFERENCE PRESENTATIONS

**Kavish, N.**, Boisvert, D., & Armstrong, T. (2012, November). *Further Evaluating the Role of Sensation Seeking in the Relationship between Resting Heart Rate and Antisocial Phenotypes in Males and Females*. Paper accepted for presentation at the annual convention of the American Society of Criminology, Philadelphia, PA.

Hart, J. R., **Kavish, N.**, & Boccaccini, M. T. (2017, March). *Feigning in a correctional sample: Associations of SIMS scores with elevations on other measures*. Poster accepted for presentation at the annual convention of the American Psychology-Law Society, Seattle, WA.

Mattos, L. A., Bernhard, P. A., Varela, J. G., Yenne, E. M., **Kavish, N.**, Long, T., Holdren, S. M., Manyose, M., (2017, March). *The effects of telepsychology on interview disclosure*. Poster accepted for presentation at the annual convention of the American Psychology- Law Society, Seattle, WA.

**Kavish, N.** (2016, March) *Cognitive Performance and Psychopathy: Exploring the Intersection of Juvenile Psychopathic Features, ADHD Symptomology, and General*

*Intelligence*. Paper presented at the Academy of Criminal Justice Science conference in Denver, CO

Perry, J., Mohr, E., **Kavish, N.**, and Ross, M. (2015, October) *Comparison of athletic body ideals held by individual sport coaches and their preferred communication strategies*. Poster presented at the Association for the Advancement of Sports Psychology Conference in Indianapolis, IN

Milad, E., Burnette, K., **Kavish, N.**, Daly, N., and Herman, A. (2015, May) *Conscientious Personality and Perceptions of Democratic and Autocratic Leadership Style*. Poster presented at Saint Louis University Psychology Capstone Symposium, Sigma Xi conference, and the Webster University Taking the Lead Conference in St. Louis, MO

## **TEACHING EXPERIENCE**

*Sam Houston State University, Huntsville, Texas*

Department of Psychology, 2017 - Present

Title: Graduate Teaching Assistant (Instructor of Record)

Undergraduate Courses Taught: Introduction to Psychology (Fall 2017; Spring 2018)