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Expanding our Lens: Female Pathways to Antisocial Behavior in Adolescence and Adulthood

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Abstract

Women and girls' engagement in antisocial behavior represents a psychological issue of great concern given the radiating impact that women's antisociality can have on individuals, families, and communities. Despite its importance and relevance for psychological science, this topic has received limited attention to date and no systematic review of risk factors exists. The present paper aims to systematically review the empirical literature informing risk factors relevant to women's antisocial behavior, with a focus on adolescence and adulthood. Primary aims are to 1) review empirical literatures on risk factors for female antisocial behavior across multiple levels of influence (e.g., person-level characteristics, risky family factors, and gender-salient contexts) and fields of study (e.g., psychology, sociology); 2) evaluate the relevance of each factor for female antisocial behavior; and 3) incorporate an analysis of how gender at both the individual and ecological level shapes pathways to antisocial behavior in women and girls. We conclude that women's antisocial behavior is best-understood as being influenced by person-level or individual vulnerabilities, risky family factors, and exposure to gender-salient interpersonal contexts, and underscore the importance of examining women's antisocial behavior through an expanded lens that views gender as an individual level attribute as well as a social category that organizes the social context in ways that may promote engagement in antisocial behavior. Based on the present systematic review, an integrative pathway model is proposed toward the goal of synthesizing current knowledge and generating testable hypotheses for future research.

Keywords

Female; Gender; Antisocial Behavior; Externalizing; Crime; Pathways; Etiology

Introduction, Conceptual Framework, and Goals

The study of antisocial behavior has traditionally focused on men, as males are overrepresented in the criminal justice system and are significantly more likely to engage in antisocial behavior (Hartung & Widiger, 1998; Rutherford, Alterman, Cacciola, & Snider, 1995). Although arrest rates for men have decreased or remained stable in the last few decades, female arrests have increased (FBI, 2008; Snyder & Sickmund, 2006). The reasons for this pattern are not yet clear, but the trend is concerning and has broad societal

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[3]Specifically, the family conflict model conceptualizes interpersonal violence as bi-directional and labels it expressive violence (Strauss & Gelles, 1986), whereas socio-structural models assert that violence is male-directed (even if perpetration is equally prevalent across the genders), instrumental, and reflects institutionalized social norms privileging male control (e.g., Dobash & Dobash, 1998; Schechter, 1982). Further, these two models generally draw from different samples with the family conflict model driven by community-based national probability surveys and the socio-structural models driven by national crime victimization surveys informing violence defined as a crime (and potentially tapping more severe forms of violence).

implications, because women are often the sole caretakers of offspring (Girshick, 1999; Owen, 1999) and are increasingly central to the economic viability of their communities (e.g., Travis, 2007). Although interest in female antisocial behavior and crime is increasing, the majority of work to date has focused on characterizing women only in reference to whether they differ from men.

A primary goal of the present review is to advance current conceptualizations of female antisocial behavior by providing a critical and integrative analysis of the research on risk factors for antisocial behavior from a gendered perspective. At present, there is a relative dearth of knowledge regarding the role of gender in the manifestation of female antisocial behavior, and no prominent competing models of women and girls' pathways to antisocial behavior exist. An integrative review of risk factors for antisocial behavior in women and girls has the potential to advance the extant literature by energizing further research and generating novel lines of study aimed at understanding risk for female antisociality. Furthermore, a critical synthesis of the state of the literature is needed to evaluate the strength of the evidence for different risk factors and to advance etiological models with sufficient explanatory power to honor the complexity of antisocial behavior for women and girls. As a means of identifying putative risk factors that have not been emphasized in the psychology literature, but have the potential to yield novel hypotheses about the causes of female antisocial behavior, this review draws on and integrates the expertise of diverse research disciplines. Although it is not common for psychological reviews to incorporate research across disciplines (e.g., sociology, criminology, anthropology, women's studies) and epistemological perspectives (e.g., based on qualitative and quantitative research) into a unified discourse on etiological factors, we view this approach as not only beneficial, but necessary to develop rich theories about the understudied pathways to female antisocial behavior. To date, no other literature reviews on female antisocial behavior provide this type of extensive, integrative analysis of risk factors from a critical and gendered perspective.

Conceptual Framework

The backbone of this review is a conceptual framework that focuses on multiple levels of influence (e.g., Bronfenbrenner, 1979; Cicchetti & Dawson, 2002) on the development and maintenance of female antisocial behavior. Figure 1 depicts three central levels of analysis, which we have termed person-level characteristics, risky family factors, and gender-salient contexts. While these levels are not necessarily mutually exclusive, they are depicted separately to provide an organizing framework for the ensuing review.

Person-level characteristics—Individual differences on a host of risk factors will determine, at least in part, the extent to which people behave antisocially. Not surprisingly, most conceptualizations of antisocial behavior, especially in the field of psychology, include characteristics that describe individual differences, such as biological and genetic risk, temperament, and personality. These models follow in the tradition of psychopathology research more broadly in that they focus on individual-level tendencies toward antisocial behavior and have gained popularity most recently in the fields of behavioral and molecular genetics (e.g., Caspi et al., 2002). Though these models have largely been examined in relation to men, research indicates that women's antisocial behavior is also affected by person-level characteristics (e.g., Moffitt, Caspi, Rutter, & Silva, 2001; Pajer, 1998). The consistency of these relationships in women, however, has not been systematically examined to date. One purpose of the present review is to fill this gap in the literature by systematically analyzing the relevance of key person-level characteristics for female antisocial behavior, particularly those risk factors emphasized in existing research, which has focused on men and boys. Our primary research question in this section is: *to what*

extent do person-level characteristics discussed in this review contribute to the antisocial behaviors of women and girls?

Risky family factors—The earliest proximal environment to which individuals are consistently exposed is that of their biological or primary families. Many cross-disciplinary understandings of antisocial behavior incorporate family factors, ranging from parenting styles to abuse experiences (e.g., Rothbaum & Weisz, 1994), with the overarching notion being that families are salient contexts for socialization, teaching and reinforcement of early behaviors, and exposure to critical experiences (e.g., Keenan & Shaw, 1997; Repetti, Taylor, & Seeman, 2002). In the development of our conceptual model, we borrow from Repetti and colleagues' (2002) risky families framework, which emphasizes the role of families in reinforcing emotional self-regulation, altering physiological/neuroendocrine responses to stress, and increasing the propensity for an angry and hostile interpersonal style. Indeed, Repetti and colleagues' (2002) model, although not focused on antisocial behavior specifically, is relevant to the current review in that it emphasizes the role of conflict and aggression in families on children's mental health outcomes. Though risk factors studied in relation to antisocial behavior have traditionally been more specific than the risky families model, it points to the importance of the family context for women and girls' mental health outcomes. As with person-level characteristics, no systematic review of key family factors for women's antisocial behavior has been conducted to date. Our primary research question in this section is: *to what extent do risky family factors contribute to the antisocial behaviors of women and girls?*

Gender-salient contexts—Gender-salient contexts represent environments in which oppressive and gendered social forces are instantiated in ways that have qualitatively different implications for women and girls, and are therefore conceptualized as being "crucial" to the development of antisocial behavior in women. Examining gender-salient contexts represents the most novel contribution of this review and distinguishes our conceptual framework from existing psychological models. Indeed, it is the inclusion of this level of analysis that undergirds the challenge to "expand our lens" in thinking about women's antisocial pathways. Gender-salient contexts are conceptualized as contexts in which gender norms are highly instantiated, particularly norms related to patriarchal forces and power dynamics. Specifically, gender norms are thought to structure these contexts in ways that systematically marginalize women due to their lower position of power in society and in turn confer differential risk for further antisocial behavior in women relative to men (e.g., Lorber, 1994; Renzetti, Edelson, & Bergen, 2001). These contexts can include interpersonal relationships, experiences of victimization, and engagement in highly gendered activities, such as sex work. To date, research has demonstrated that women who behave antisocially report high levels of exposure to such contexts. However, these contexts have not been conceptualized as risk factors that may initiate or exacerbate women and girls' antisocial pathways. Though gender norms, by definition, operate in almost all contexts and provide a powerful social push for individuals across gender groups, we characterize gender-salient contexts as risky environments outside of the family that invoke gendered power dynamics and can, in turn, have a salient impact on women and girls' antisocial pathways. Our primary research question in this section is: *what characterizes gender-salient contexts and how might they accord risk for women and girls' antisocial behaviors?* We aim to examine the evidence for this question in the context of a gender-relevant interpretative framework that locates risk in an oppressive and demanding social structure and not solely within the individual and her family. Central to this conceptualization of gender-salient context, as well as an understanding of the model advanced by this review, is that gender operates at multiple levels of analysis.

Conceptualization of Gender and Its Multi-Level Influence

We conceptualize gender as a multi-level category, as described by feminist scholars (e.g., Anderson, 2005; Lorber, 1994; Stacey & Thorne, 1985), that characterizes individuals and structures social norms. Gender as an individual difference variable refers to the typical use of gender as a grouping variable in psychological studies, similar to how one would classify individuals into other biological or social groupings (e.g., blood type AB vs. O). This individualist approach defines gender as a characteristic of the person and attributes gender differences in risk for antisocial behavior to features of the individual, such as a woman's genetic makeup, aggressive tendencies, or susceptibility to socialization practices1. In contrast, gender as an ecological (or socio-structural) variable conceptualizes gender as part of the social structure and centralizes the social implications attached to biological sex (also called "structuralist" approach; see Anderson, 2005). More specifically, it contends that, "gender is a system of stratification that places women and men into unequal categories, roles, and occupations" (Anderson, 2005; p. 858) and results in the equal treatment of members in the same group (and possibly unequal treatment across groups). Gender as an ecological variable manifests in the form of gender-related norms and power dynamics, which are inextricably embedded in the societal context and operate partly independently of individual motivations.

Our multi-level conceptualization of gender is consistent with the biosocial theory of Wood and Eagly (2002), which integrates biological and socio-structural explanations for sex differences in behavior. Their theory posits that gender roles grew out of biological differences in physical attributes and reproductive abilities between the sexes. These initially influenced the activities that were delegated to each sex in nonindustrial societies. Depending on the social and ecological conditions in those societies, each sex took on the tasks they could more efficiently accomplish (e.g., men's upper body strength made them more successful at hunting large game). The authors contend that as societies became more industrialized, thus making some aspects of sex specialization unnecessary, these gender roles persisted as "cultural constructions" (p. 709), as they became embedded in the meanings ascribed to the category of gender. Wood and Eagly's theory highlights the transactional influence of individual-level and social-level factors on men and women's differential outcomes. Further, Wood and Eagly (2002) speculate that gender socialization pressures (e.g., reinforcing nurturing and aggressive behaviors in girls vs. boys, respectively; Keenan & Shaw, 1997) inform the preferences of girls and boys, and these preferences are instantiated and mutually reinforced by cultural traditions as gender norms.

Thus, gender norms are theorized to represent a set of perceived behavioral and social expectations that are systematically associated with sex-based groups. Even if women differ in the extent to which they are exposed to traditional socialization forces and/or adhere to gender norms and roles, these norms are embedded in social and institutional structures that affect all women and girls. Sexism and patriarchy also represent social-level influences of gender that are rooted in discriminatory practices to the detriment of women. Patriarchy refers to the oppression of women resulting from social structures that accord less power, resources, and control of matters of daily life to women relative to men (e.g., Lorber, 1994). These power dynamics are observed in contemporary societies, including family organization, income disparities, and political representation (Lorber, 1994), and are likely relevant for antisocial behavior. Taken together, the perspective taken in this review is that gender is multifaceted and conceptualizations of female risk should consider the influence of gender as an ecological or socio-structural variable (Anderson, 2005; Lorber, 1994; Stacey &Thorne, 1985; Wasco & Bond, 2010).

[1]In this review, we do not focus on gender differences (i.e., mean level differences) in antisocial behavior.

Definitions, Distinctions, and Review Methodology

The focus of this paper is on the construct of antisocial behavior, defined as a pattern of norm-violating behaviors marked by a diversity of outcomes, including conduct problems, criminality, and violence/aggression (see Krueger et al., 2002). As a consequence, we review papers that operationalize "antisocial" behavior in different ways, including number of conduct disorder symptoms (e.g., Pajer et al., 2006), diagnosis of Antisocial Personality Disorder (e.g., Goldstein et al., 1996), legal history or arrests (e.g., Snyder & Sickmund, 2006), and scores on relevant inventories (e.g., parent-reported checklists, aggression questionnaires; Arseneault et al., 2003). Although substance use and dependence highly co-occur with, and have effects on, antisocial behavior (e.g., Krueger et al., 2002), a review of the large literature on risk factors for substance use is beyond the scope of the current analysis. In addition, we focus on pathways to antisocial behavior, which we define as interrelationships between different etiological factors that may lead to the development or exacerbation of antisocial behavior. We distinguish this term from the use of the word trajectories, which relates to the patterns in emergence of and desistance from antisocial behavior over the course of development.

This review includes a systematic evaluation of the risk factors impacting women and girls' pathways to antisocial behavior. Specifically, we conducted a systematic review of the literature on a host of key risk factors informing our three conceptual levels of analysis in relation to women and girls' antisocial pathways, with a focus on adolescence and adulthood. We focused on studies that evaluate the effects of these risk factors on women and girls in particular. Studies included in this review were selected by searching *PsycINFO* and *Sociological Abstracts* for any study in a peer reviewed source that included a common variant of key terms describing gender (e.g., sex, gender, female, women, or girls) and key terms relevant to any of our risk factors (e.g., heritability, parenting, intimate partner violence). All abstracts of relevant articles were reviewed, and all articles that provided empirical data on the topic are included in this paper, yielding a total of 118 papers. Papers were excluded from our review if results did not inform women and girls' antisocial behavior in particular (e.g., findings were not reported separately for male and female participants). We have included quantitative, qualitative, and mixed methodologies in this review in order to be inclusive and as a way of promoting complementarity (see Greene, 2007) in our analysis. Importantly, the strength of the evidence for each risk factor will be evaluated to determine whether it is justified to incorporate it into etiological models of female antisocial behavior. These conclusions will be based on a critical evaluation of the state of the literature regarding evidence for risk factors that either increase female antisocial behavior or affect women and girls in qualitatively different ways than men and boys1. As a means of synthesizing the risk factors identified across literatures, this review culminates in a proposed model of pathways to female antisocial behavior that is based in the following empirical review and which emphasizes the influence of person-level characteristics, risky family factors, and gender-salient contexts on women and girl's antisociality.

There are important sampling characteristics to bear in mind in this review. For instance, research with forensic or high-risk samples provides valuable information about individuals who eventually come in contact with the justice system, although it neglects individuals who engage in antisocial behavior but evade detection, arrest, and/or legal sanctions. Nonetheless, we review studies of individuals with an identified criminal history, because criminal involvement embodies a socially sanctioned and empirically validated definition of antisocial behavior. Also, these studies best represent individuals with extreme manifestations of antisocial behavior. Population-based and longitudinal studies (e.g., Lahey et al., 2006; Moffitt & Caspi, 2001), in contrast, significantly reduce sample bias and inform dynamic processes. However, they are rare, because they require very large sample sizes to capture the relatively low base rates of antisocial behavior in girls and women. Further, they

may inadvertently exclude those with highest risk (e.g., street-identified individuals and run-away youth are unlikely to be contacted or participate). To balance the limitations of each approach, the present review examines an array of research with the aim of identifying common patterns across studies with different sampling, design, and methodological approaches as well as processes that may be relatively specific to understanding risk for antisocial behavior in subpopulations of girls and women.

Risk Factors for Female Antisocial Behavior

Female antisocial behavior is a relatively understudied – though growing – area of inquiry. Indeed, one of the most cited findings in the literature on gender and aggression is that men and women diverge in the types of aggression each typically display, with studies suggesting that boys tend to favor overt forms of aggression (e.g., kicking, hitting, punching), whereas girls utilize verbal or even more covert forms of aggression (Bjorkqvist, Lagerspetz, & Kaukianen, 1992; Lagerspetz, Bjorkqvist, & Peitonen, 1988), which involve aggressing within social networks. These latter forms of aggression, referred to by some as relational aggression (e.g., gossiping, refusing friendships, ostracizing; Crick & Grotpeter, 1995), have garnered attention and attuned researchers to the particular ways in which girls may exhibit aggression and hostility (e.g., Werner & Crick, 1999). This review builds on this foundation of examining gender specificity, but focuses specifically on the risk factors that promote overt behaviors considered antisocial, such as other-directed violence.

This section provides a systematic review of the most extensively studied contributors to antisocial behavior, many of which are also pertinent to the development of male antisocial behavior. The purpose of this review is not to conclusively determine whether a given risk factor is more relevant for women relative to men. Rather, examination of the research literature using an integrative perspective is meant to facilitate the generation of etiological pathways to female antisocial behavior that consider multiple levels of risk. A summary of the studies on contributors to antisocial behavior that we evaluated are presented in Table 1, which can be used as a guide to our conclusions on the relevance of each risk factor identified in the literature for female antisocial behavior. Studies that either did not analyze gender or included only males may be cited in the text but not included in the table.

Developmental Trajectories of Antisocial Behavior

Before discussing specific risk factors, we first provide an overview of the research on developmental trajectories of antisocial behavior that have been identified in the literature in order to summarize the typical patterns of development, maintenance, and desistance of antisocial behavior for girls and women. An extensive body of research by Moffitt and colleagues has identified antisocial trajectories that differentiate individuals who exhibit antisocial behavior consistently over the lifespan (the life-course-persistent trajectory), those who start acting antisocially during their teenage years (the adolescent-onset trajectory), and those who only engage in antisocial behavior in childhood (the childhood-limited trajectory) (Moffitt, 1993; Moffitt & Caspi, 2001; Moffitt, Caspi, Dickman, Silva, & Stanton, 1996; Moffitt, Caspi, Harrington, & Milne, 2002; Odgers et al., 2008; Wiesner & Capaldi, 2003). Although these trajectories were validated on samples composed mostly of boys, continued investigation of these and related trajectories suggest that girls and women exhibit similar patterns of engagement and desistance in antisocial behavior (Bongers, Koot, van derEnde, & Verhulst, 2004; Fergusson & Horwood, 2002; Kratzer & Hodgins, 1999; Moffitt, 1993; Moffitt & Caspi, 2001; Odgers et al., 2008). Indeed, multiple large-scale studies have identified subsets of girls who engage in antisocial behavior in childhood and continue into adulthood (Broidy et al., 2003; Cote, Ziccolillo, Tremblay, Nagin, & Vitaro, 2001; Kratzer & Hodgins, 1999; Lahey et al., 2006; Moffitt, 1993; Schaeffer et al., 2006), as well as those who begin to act antisocially in adolescence (Kratzer & Hodgins, 1999; Lahey et al., 2006;

Odgers et al., 2008). Longitudinal research on these patterns of engagement in and desistance from antisocial behavior indicate they have similar predictive validity for psychopathology and violence outcomes in girls and boys (Odgers et al., 2008). These studies have provided valuable information in the prevalence rates of antisocial behavior in girls and generally suggest that fewer girls demonstrate child-onset trajectories (7.5% reported in Odgers et al., 2008), while a greater proportion engage in adolescent-onset trajectories (17% as reported in Odgers et al., 2008). These rates are comparable to those reported in other epidemiological studies and also inform gender differences in prevalence rates. Specifically, girls report fewer antisocial behaviors in early childhood as compared to boys, although this gender gap narrows around age 15 (see Odgers et al., 2008).

Despite this research, some theorists argue that the onset of antisocial behavior is absent in childhood and delayed in girls until they reach adolescence (Silverthorn & Frick, 1999). This theory contradicts the findings of large-scale epidemiological studies as well as research with more targeted, high-risk samples. For instance, longitudinal research conducted with individuals raised in urban and low-socioeconomic environments produced antisocial trajectories consistent with those identified by Moffitt and colleagues (e.g., Aguilar, Sroufe, Egeland, & Carlson, 2000; White & Piquero, 2004). One difference between the trajectories identified using epidemiological versus the smaller, high-risk samples is that girls recruited from disadvantaged contexts were more likely to display childhood-onset antisocial behavior than epidemiological studies would suggest. The higher childhood prevalence rates in high-risk girls is likely explained by the heightened risk associated with disadvantaged environments. Consistent with the theory that antisocial behavior is delayed for girls (Silverthorn & Frick, 1999), however, research indicates that adolescence is a particularly salient developmental period for the onset of female antisocial behavior, because a number of social-level risk factors begin to influence all girls during this period (e.g., Haynie, 2003). As discussed in sections to follow, these social-level processes may exacerbate preexisting childhood risk factors (e.g., poverty/ social disadvantage) or trigger the manifestation of previously unexpressed vulnerabilities (e.g., susceptibility to drug addiction) (e.g., Dick et al., 2000). Research has yet to examine the potential effect of gendered social-level forces on emergence in and desistance from antisocial behavior during different developmental periods.

Person-level Characteristics: The Usual Suspects

The following section examines whether person-level risk factors that have been studied extensively in boys and men may also be relevant for understanding female antisocial behavior. More specifically, the purpose is to review and critically evaluate whether individual difference characteristics traditionally incorporated into theories of male antisocial behavior are common to both genders.

Heritability—A large body of work has focused on the extent to which antisocial behavior is heritable, and research has confirmed that antisocial behavior is indeed partly explained by genetic variation (e.g., Rhee & Waldman, 2002). As reported in Table 1, our literature review identified nine behavioral genetics studies and one meta-analysis of 17 additional behavioral genetics studies that investigated the heritability of female antisocial behavior. All of these investigations indicated that additive genetic effects were associated with antisocial behavior in girls and women, which is notable given their range of methodological approaches (i.e., retrospective, cross-sectional, and longitudinal designs) and sample compositions (i.e., community and high-risk children, adolescents, and adults). Further, several of these studies (e.g., Arseneault et al., 2003, Maes et al., 2007, McGue, Iacono, & Krueger, 2006), including the meta-analysis (Rhee & Waldman, 2002), found that the magnitude of genetic and environmental influences on the development of antisocial

behavior did not differ by gender, which indicates that the magnitude of genetic liability in girls and women is comparable to that found in boys and men.

Emerging research looking at how the contribution of additive genetic effects relative to shared and unique environments change across developmental periods are starting to add complexity to the issue of the heritability of female antisocial behavior (Dick et al., 2009; Hicks et al., 2007; Jacobson, Prescott, & Kendler, 2002). For instance, a recent longitudinal investigation of twins found that male externalizing problems were increasingly attributable to genetic variation and heritability from adolescence to adulthood, whereas the trend was toward decreasing effects of genes and increasing effects of environment for women (Hicks et al., 2007). The authors interpreted the finding as signifying greater environmental influence for females than males as they leave the home and are increasingly influenced by partners and peers. This shift in the contribution of heritability to antisocial behavior corresponds to data from a large-scale retrospective study that suggests genetic variation played a greater role in antisocial behavior before age 15 for girls than boys (Jacobson et al., 2002). Given that only a few studies have examined the dynamic effects of heritability across time, the finding that gender moderates the contribution of genetic variation to antisocial behavior in particular developmental periods should be considered preliminary. However, it adds interesting complexity to the contribution of heritability for the development of antisocial behavior across the lifespan and underscores the importance of examining transactional models of risk for female antisocial behavior. In particular, it suggests that environmental influences become increasingly important for understanding female antisocial behavior as girls transition into adolescence and adulthood.

Specific genotypes—Biological sex differences have the potential to influence specific forms of gene expression and transcription throughout the lifespan at multiple levels. For instance, sex hormones impact development as early as prenatal brain growth and continue to affect the anatomy of the brain as it develops (Sjoberg et al., 2008). Adolescence is another potentially critical developmental period in which gender differences in gene regulation may emerge, given the influence of gonadal hormones on the regulation of gene transcription during puberty (Sjoberg et al., 2007). Despite the crucial role gender differences may play in the risk conferred by particular genes, molecular genetic studies with female samples are only recently emerging. Only research on the MAO-A genotype is reviewed in this section, given that it is the only genotype to be rigorously investigated in relation to female antisocial behavior.

Several research groups have found that a combination of childhood maltreatment and the MAO-A short allele predict antisocial behavior in boys (Caspi et al., 2002; Foley et al., 2004; Kim-Cohen et al., 2006; Nilsson et al., 2007; Taylor & Kim-Cohen, 2007; Widom & Brzustowicz, 2006), though some investigations have not replicated this finding (e.g., Prichard, Mackinnon, Jorm, & Easteal, 2008; Young et al., 2006). Until recently, the relationship between childhood maltreatment and the MAO-A gene has been restricted to male samples, making it unclear whether this gene-environment interaction generalizes to girls and women. Our literature search resulted in ten published studies that have examined the effects of MAO-A genotype on antisocial behavior in female samples (see Table 1). Of these studies, four support the generalization of the finding with the MAO-A low activity allele to female antisocial behavior (Caspi et al., 2002 – see Note 30; Ducci et al., 2008; Prom-Wormley et al., 2008; Widom & Brzustowicz, 2006), five conclude that the MAO-A high activity (rather than low) variant is important for understanding antisocial behavior and/or substance use in girls and women (Gokturk et al., 2008; Kinnally et al., 2009; Nilsson et al., 2007; Sjoberg et al., 2007; Wakschlag et al., 2009), and one found no moderating effect of MAO-A genotype for women (Frazzetto et al., 2007). What can be concluded from these studies is that the MAO-A genotype influences antisocial behavior in women.

However, conclusions about the specific allelic variant that accords risk (i.e., low versus high activity) are less clear given that about half of the current studies find evidence for low-activity MAO-A while the other half support the high-activity MAO-A as a risk factor in females. Moreover, these studies are fairly matched in their design characteristics, including sample size, use of high risk versus normative (or unselected) samples, and the age groups examined. One distinguishing characteristic among them is that studies supporting the low-activity MAO-A are predominately longitudinal, while those supporting the high-activity MAO-A are cross-sectional. Thus, the different findings may be suggestive of different forms of risk (e.g., current symptoms vs. longitudinal risk). This is an empirical question in need of further validation and studies that can clarify inconsistencies, such as those examining both concurrent and future antisocial behavior in relation to both variants of MAO-A, are greatly needed.

Another possibility is that the inconsistent findings in the literature are the result of skewed data driven by a few outliers (e.g., Risch et al., 2009). For example, Prom-Wormley et al. (2008) found that the MAO-A (long allele) by childhood adversity interaction predicting female antisocial behavior disappeared when the environmental indicator was transformed to reduce skewness. Since similar transforms have not been undertaken in the other genetics studies, it is difficult to know whether outliers are accounting for the observed sex differences in genotype. Inconsistent findings in this literature make the evidence for gender differences in genotype effects at best preliminary and in need of replication before they can be reliably interpreted. Also, gender differences in allelic risk factors from molecular genetics research on antisocial behavior contradict a recent behavioral genetics investigation that examined whether qualitatively different genes influence the expression of antisocial behavior in boys and girls (Van Hulle et al., 2007). Biometric analyses where genetic and environmental variance was modeled in samples of full and half siblings found no support for qualitative differences in the genes contributing to antisocial behavior in girls and boys.

One complication inherent in examining gender differences arises with sex-linked genes like MAO-A. Unlike men, who fall into two MAO-A genotypes (high-high vs. low-low), women have two copies of the X chromosomes and, are thus characterized by three genotypes (high-high, high-low, low-low). The two MAO-A genes in women makes it unclear which allele is inactivated (low or high) in the heterozygous genotype for a particular person and thus how the gene functions (Caspi, personal communication, 2/23/09). Another factor limiting comparative studies on sex differences in genotype effects within population-based studies is the small number of girls and women who engage in antisocial behavior, which restricts sample sizes in population studies from reaching the necessary magnitude for examining gene and geneenvironment effects (e.g., Risch et al., 2009). Consequently, few studies have directly compared gender differences in genotype effects and how environmental factors may mediate genetic effects in gender-specific ways. In sum, the genetics literature is beginning to implicate female-specific genotype effects and gene-environment interactions as contributors to antisocial behavior, though much more research is needed before these findings will be conclusive.

Personality and temperament—Research has examined temperament, or early patterns of behavior thought to reflect biological predispositions to antisocial behavior (Caspi, 2000; Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006; Nigg, 2006). Certain features of infant and early-childhood temperament, such as low levels of inhibitory control and fearlessness predict engagement in antisocial behavior and the development of conduct problems (Caspi, 2000; Nigg, 2006). A recent meta-analysis of young children found girls scored higher on effortful control (i.e., were better able to inhibit inappropriate behavioral responses) than boys, whereas boys scored higher on measures of surgency (i.e., were more active and gained more pleasure from high-intensity experiences; Else-Quest et al., 2006). These

findings help explain gender differences in the prevalence of externalizing behaviors. However, research also suggests that, despite these mean-level gender differences in temperament, similar personality characteristics accord risk for female antisocial behavior. For instance, a longitudinal study found that lack of control (i.e., emotional lability, restlessness, short attention span, and negativism) at ages 3 and 5 predicted antisocial behaviors similarly at ages 9 and 11 for both boys and girls (Caspi, Henry, McGee, Moffitt, & Silva, 1995). Similarly, difficult temperament (i.e., fussy, difficult, demanding) at age 3.25 showed positive associations with aggressive and externalizing behaviors through age 12 in both boys and girls (Guerin, Gottfried, & Thomas, 1997).

Research on the correlates of adolescent and adult antisocial behavior also implicates personality in the manifestation of female antisocial behavior. A meta-analysis of 59 cross-sectional studies on personality predictors of antisocial behavior in adolescence and adulthood found that psychoticism, disagreeableness, negative emotionality, novelty seeking, and low conscientiousness best predicted female antisocial behavior (Miller & Lynam, 2001). Across several models and measures of personality, gender only moderated the relation of Eysenck's Neuroticism dimension to antisocial behavior (more predictive for males than females), indicating that the majority of personality traits are similarly predictive of antisocial behavior in men and women (Miller & Lynam, 2001). Subsequent research has produced similar findings to this meta-analysis, with broad measures of negative emotionality/ low agreeableness and low constraint/low conscientiousness relating strongly to male and female antisocial behavior during adolescence and adulthood (e.g., Krueger et al., 2001; Moffitt et al., 2001). Longitudinal research has confirmed that these personality dimensions predict a portion (approximately 23%) of the stability in antisocial behavior from adolescence to young adulthood in both men and women (Lynam, Leukefeld, & Clayton, 2003). Thus, although gender differences exist in personality traits (e.g., men are lower on constraint and higher on aggression than women; Roberts et al., 2001), making the combination of antisocial-related traits less prevalent in girls relative to boys, girls and women with at-risk personality traits, particularly low agreeableness and low conscientiousness, are more likely than other females to engage in antisocial behavior.

Conclusions of person-level characteristics—Literature on heritability, genotype, and personality/ temperament largely advances evidence that the risk conferred by these person-level characteristics contribute to female antisocial behavior (cf. Moffitt et al., 2001). Because gender norms dictate against antisocial behavior among females, it has been suggested that risk may need to be particularly strong in order to produce antisocial behavior in women and girls (i.e., polygenic multiple threshold model; Cloninger et al., 1978). However, the above review of the literature does not substantiate this conclusion, because we find little evidence that antisocial females are characterized by extreme person-level or biological risk. Instead, female antisocial behavior seems to be affected by similar person-level characteristics as those that affect male antisocial behavior.

However, behavioral genetics research reveals that the relative effects of heritability and environment are dynamic and change across development (e.g., Kendler, Gardner, Annas, & Lichtenstein, 2008) and context (e.g., prosocial versus adverse; Turkheimer, Haley, Waldron, D'Onofrio, & Gottesman, 2003; Tuvblad, Grann, & Lichtenstein, 2005). Evidence is emerging to indicate that gender may moderate these shifting effects, particularly the influence of environmental stressors during adolescence and young adulthood, such that environmental contributors become increasingly important for girls over time (e.g., Dick et al., 2009; Hicks et al., 2007). Thus, adolescence in particular may be a critical period in which gender specificity in environmental risk begins to emerge; a pattern consistent with late-onset developmental trajectories (e.g., Moffitt, 1993). As reviewed in subsequent sections, pubertal development and exposure to gender-salient contexts may mark an

important point in girls' pathways to antisocial behavior, such that person-level vulnerabilities intersect with strong environmental and social influences to accord particular risk for antisocial behavior.

Risky Family Factors

Research and theory has long-maintained that parenting and family-level factors are important for the development of antisocial behavior (e.g., Rothbaum & Weiz, 1994). However, the association between family factors and antisocial pathways for girls in particular has not been the subject of recent systematic review. This section provides a systematic review of some of the most oft-studied family factors in relation to girls' antisocial behavior, namely parenting styles and parental monitoring. Further, we interpret the effects of family factors within the Risky Families model advanced by Repetti and colleagues (2002), which emphasizes how cold and unsupportive family environments are associated with a host of mental and physical health outcomes. Most relevant for the present review, risky families transact with genetic vulnerabilities, tax the stress response, and promote emotionally and socially maladaptive responses, including conflict and aggression.

Parenting styles—Numerous studies demonstrate that parenting style predicts antisocial behavior among girls, with compelling evidence demonstrated across study type (i.e., two meta-analyses, longitudinal and cross-sectional designs) and sample compositions (e.g., childhood, early, late, and mid-adolescence, high risk and normative), These studies often examine Baumrind's classic and extended (1972; 1991) parenting taxonomies, sometimes termed under different categories (e.g., authoritarian, authoritative, permissive; positive versus negative parenting). Findings in general suggest that authoritative parenting characteristics are competence-enhancing and are protective of children's later development of antisocial behavior, whereas authoritarian and, to a lesser extent, permissive parenting, confer risk for the development of antisocial behaviors (Brody & Flor, 1998; Hart, O'Toole, Price-Sharps, & Shaffer, 2007; Jones et al., 2008; Scaramella, Conger, & Simons, 1999).

Importantly, the findings of these studies suggest that parenting style, for the most part, is a gender-common risk factor (Brody & Flor, 1998; Jones et al., 2008). The most recent meta-analysis on this topic concluded that parenting patterns associated with the absence of coercive control and inclusion of guidance and support are negatively associated with boys' and girls' externalizing behaviors (Rothbaum & Weisz, 1994). However, this meta-analysis also concluded that maternal parenting in particular has a stronger effect on antisocial behavior among younger boys than girls. This pattern is similar to those advanced in other reviews, which find stronger links for boys between corporal punishment and aggression (Gershoff, 2002), experience of mother-child aggression in violent homes and later externalizing (McDonald, Jouriles, Tart, & Minze, 2009), and maternal parenting challenges (e.g., as a result of maternal psychopathology) and negative outcomes (Connell & Goodman, 2002). Cross-sectional and longitudinal studies conducted since Rothbaum & Weisz's (1994) meta-analysis find a similar pattern: that parenting confers risk for future antisocial behavior in both girls and boys (Avry et al., 1999; Eisenberg et al., 2005; Reitz, Dekovic, & Meiger, 2006; Thornberry, Freeman-Gallant, Lizotte, Krohwn & Smith, 2003; Zhou et al., 2002), with any gender differences relating to stronger effects of parenting for boys (Miner & Clarke-Stewart, 2008, Thornberry et al., 2003). These stronger effects for boys may be due to mean-level differences, in that boys are more externalizing on average (e.g., Keenan & Shaw, 1997), and girls as a group (in non-forensic samples) experience higher levels of authoritative parenting throughout childhood (Chipman et al., 2000; Russell, Hart, Robinson & Olsen, 2003).

One emerging hypothesis based on our review is that the effects of parenting on boys' antisocial behavior arises earlier in their development and is more likely to be captured by studies with younger samples, while the effects of parenting on girls' antisocial behavior may be more delayed. Though evidence for this theory is not conclusive, it is supported by 1) a number of studies that find that the effects of parenting are stronger on boys' than girls' antisocial behavior during childhood (e.g., Rothbaum & Weiz, 1994) and 2) three recent studies suggesting that the influence of parenting practices are stronger for girls as they reach adolescence. First, a recent study reported an association between parenting factors and externalizing behavior for older girls and younger boys, suggesting the importance of examining parenting effects for girls later in their development (Blatt-Eisengart et al., 2009). Two other studies found that parental psychological control and supportive parenting were positively and negatively associated, respectively, with externalizing problems moreso in older adolescent girls than boys (Manongdo & Ramirez-Garcia, 2007; Pettit, Laird, Dodge, Bates, & Criss, 2001). Given research reviewed above showing that environmental influences on female antisocial behavior increase with age (Hicks et al., 2007), it seems that parenting affects girls' antisocial behaviors less immediately, manifesting effects beginning in later adolescence, during which time girls' are most likely to engage in antisocial behaviors (Odgers et al., 2008). However, few studies have been conducted in this area and more are needed that directly examine gender differences according to developmental period.

Parental monitoring—Parental monitoring, or the degree to which parents are aware of and supervise their children's activities, has been extensively studied as a risk factor for delinquent behavior in adolescence, with research consistently showing a link between decreased monitoring and increased engagement in antisocial activities (e.g., Stattin & Kerr, 2000). Although a main effect of gender often emerges, with less monitoring of boys than girls (e.g., Barnes, Reifman, Farrell, & Dintcheff, 2000; Knutson, DeGarmo, & Reid, 2004), research has consistently established that a lack of parental monitoring is a risk factor for delinquent behavior among both girls and boys (Bowman, Prelow, & Weaver, 2007; Donenberg, Wilson, Emerson, & Bryant, 2002; Formoso, Gonzales, & Aiken, 2000; Fulkerson, Pasch, Perry, & Komro, 2008; Kim, Hetherington, & Reiss, 1999; Laird, Criss, Pettit, Dodge, & Bates, 2008; Stattin & Kerr, 2000; Vieno, Nation, Pastore, & Santinello, 2009; Windle et al., 2010). As summarized in Table 1, our literature review produced eight cross-sectional and two longitudinal studies informed by a diverse composition of participants, all of which suggested parental supervision decreases antisocial behavior.

A few studies do suggest that the effects of monitoring may be particularly protective for girls, with girls' greater likelihood to engage in self-disclosure with parents perhaps accounting for this result (Soenens et al., 2006; see Bowman et al., 2007; Formoso et al., 2000; Kim, Hetherington, & Reiss, 1999; Vieno et al., 2010). Thus, there is some evidence to suggest that caregiver involvement in daughters' lives and closeness in their parent-daughter relationship may be an important protective factor against antisocial behavior in adolescence that enhances the effects of parental monitoring.

Conclusions of risky family factors—Overall, we find that risky family factors are important for understanding female antisocial behavior, as they are in boys. All of the family level factors reviewed in this section inform the extent to which a climate characterized as "risky" increases antisocial behavior, with levels of risk ranging in severity from families with low monitoring and neutral to ineffective parenting styles to families in which members are neglected and harshly disciplined. Our review also suggests that girls' antisocial pathways may actually be less strongly affected by harsh parenting than that of boys', especially earlier in development. This emerging hypothesis is based on cross-sectional and longitudinal studies conducted with younger participants that find a stronger effect of

parenting style on boys' antisocial behavior. This pattern may be the result of mean-level differences in antisocial behavior, with boys engaging in more of these behaviors earlier in childhood. Importantly, parenting practices are considered a primary context through which gender norms are learned early in development through socialization processes, such that girls are more likely deterred from antisocial behavior than boys (e.g., Rothbaum & Weisz, 1994). Indeed, the few studies that find stronger effects of parenting on antisocial behavior in girls' were informed by older samples, suggesting that parenting is a risk factor for girls during developmental periods in which girls are more likely to engage in antisocial behaviors (Odgers et al., 2008). Thus, it may be premature to conclude, based mostly on studies with younger samples, that parenting style matters less for girls.

Taken together, family factors are important in girls' pathways to antisocial behavior because, first, they are indicators of a cold and unsupportive family climate advanced by the Risky Families Model (Repetti et al., 2002). This family climate reinforces negative coping behaviors, including anger and hostility, which can alter hormonal and stress-linked response systems and contribute to the development of externalizing psychopathology. Moreover, these risky family factors might themselves be highly associated with, and/or interact with, person-level vulnerabilities to promote antisocial behaviors, especially given emerging evidence in support of the influence of gene-environment correlations and interactions on antisocial behavior (e.g., see Caspi & Moffitt, 2006; Jaffee & Price, 2007). In the next section, we focus on other risk factors that function to promote girls' exposure to risky contexts *outside* of the family.

Expanding Our Lens: Gender-Salient Contexts

The goal of this subsection is to examine experiences and contexts outside of the immediate family environment to which girls' and women are exposed. We conceptualize these contexts as "crucial", because they represent gendered environments in which competing social demands can work to promote girls' antisociality and aggression. The indicators discussed in this section were selected on the basis of evidence that girls and women are affected by these risk factors in qualitatively different ways (e.g., Cheseny-Lind & Shelden, 2004), and these contexts have been underscored as important by a recent federally sanctioned task force on female antisocial behavior (e.g., see Zahn et al., 2010). Importantly, we argue that these contexts may be salient factors in women's antisocial pathways because of their high potential to instantiate gender norms, particularly with respect to power and patriarchy. That is, the social push accorded by these gender-salient contexts implicates gendered power dynamics and exemplifies how gender operates outside the individual to shape their antisocial pathways. We note that research in this area is emergent but nevertheless provides rich data on potentially unique contributors to female antisocial pathways that can advance existing psychological theories.

Sexual Abuse and Early Pubertal Development: A Bridge from Person-Level Characteristics & Risky Family Factors to Gender-Salient Contexts

Sexual abuse and early pubertal development are two risk factors that have gained considerable attention in research on female antisocial behavior (e.g., see Zahn et al., 2010). Why might they carry a particularly important function for girls? We propose that their importance lies in the mechanisms through which they accord risk for the promotion of antisocial behavior. That is, they may function as a bridge between earlier risk factors (including person level and risky family factors) and exposure to gender-salient contexts in which gendered processes increasingly affect and promote antisocial behavior.

Childhood sexual abuse—Overwhelmingly, evidence reviewed across studies suggests that sexual abuse experiences confer risk for women and girls' engagement in antisocial

behavior (Arata, Langhinrichsen-Rohling, Bowers & O'Brien, 2007; Cernkovich, Lanctot, & Giordano, 2008; Gault-Sherman, Silver, & Sigfusdottir, 2009; Gunnison & McCartan, 2005; Hahm, Lee, Ozonoff, & Wert, 2010; Herrera & McCloskey, 2003; Hubbard & Pratt, 2002; Leeb, Barker & Strine, 2007; Phan & Kingree, 2001; MacMilan et al., 2001; Mason, Zimmerman & Evans, 1998; McCabe, Lansing, garland & Hough, 2002; Siegel & Williams, 2003; Verona & Sachs-Ericsson, 2005; Wright, Friedrich, Cinq-Mars, Cyr, & McDuff, 2004)2. These studies have used a variety of samples and methods to assess sexual abuse and antisocial behavior, including self, other, and official reports. Further, studies that directly compare the genders are consistent with the idea that abuse history is a female-specific risk factor for antisocial behavior, either because they find a stronger effect for girls or a non-significant effect for boys (see Table 1; see Bergen, Martin, Richardson, Allison, & Roger, 2004; Garnefski & Arends, 1998 for exceptions). Among the most compelling studies are those that prospectively link victimization history with antisocial behavior in girls but not boys (e.g., Widom, 1989), those that examine outcomes over long periods of time (e.g., 20 years; Siegel & Williams, 2003), and those that use appropriate controls to insure internal and external validity (e.g., age and race matched controls; Hahm et al., 2010). This evidence largely corroborates claims made across disciplines espousing the importance of sexual abuse for girls' antisocial outcomes (e.g., Acoca, 1998; Chesney-Lind & Sheldon, 2004) and lends credit to descriptive studies that find higher rates of sexual abuse and stronger associations to antisocial behavior in female versus male participants (e.g., McClellan et al., 1997). Future work would benefit from further exploring whether the link to sexual abuse for girls is driven by the greater severity and frequency of sexual abuse in girls, especially in normative samples (McClellan et al., 1997), though multi-sample studies with relatively high and low severity and frequency rates continue to evidence the strong link between sexual abuse and antisocial behavior in girls (Wright et al., 2004).

Importantly, sexual abuse can be conceptualized as a risky family factor, falling on the more severe spectrum of risk as compared to unsupportive parenting styles and low parental monitoring. Particularly if sexual abuse occurs within the home (or is related to the overall family dynamic), girls with a history of sexual abuse would likely be characterized by similar developmental outcomes, including poor emotional and behavioral controls, angry interactional styles, and poor mental health outcomes. Undoubtedly, sexual abuse represents an extreme end of the continuum of "risky" families but is nonetheless indicative of numerous factors characterizing risky families, including low levels of monitoring and nurturing, and high levels of neglect.

Besides being part of a risky family pattern, however, sexual abuse may function as a context of risk that promotes exposure to other risky environments and further victimization for women in particular. Evidence for this comes from sociological models of delinquency, which view sexual abuse as a context of risk that can promote exposure to future risky contexts, particularly through running away, and thus become an important bridge to an antisocial lifestyle (i.e., promote the onset of antisocial behavior). A prominent theory by Chesney-Lind indicates that sexual abuse increases the likelihood that a girl will engage in antisocial behavior as an indirect consequence of running away from home, because escaping abuse via running away can lead to engaging in illegal behaviors to survive on the streets (Chesney-Lind &Shelden, 2004). At a descriptive level, girls and women consistently report running away from home to escape victimization and do so across high and normative risk samples, assessed using quantitative and qualitative methods (Acoca, 1999; Dixon, Howie & Starling, 2005; Katz, 2000; Siegel & Williams, 2003). Adding more compelling

[2]Finally, a meta-analysis of 59 studies on the effects of childhood sexual abuse in college samples found that the negative effects of sexual abuse on psychological adjustment, although mostly small in size, were stronger in female than male samples (Rind et al., 1998).

etiological evidence, prospective links between girls' sexual abuse and running away has been established in several studies, including longitudinal ones (Kaufman & Widom, 1999; McCormak, Janus, & Burgess, 1986; Tyler, Johnson, & Brownridge, 2008; Widom & Ames, 1994). While runaway boys are also characterized by antisocial behavior, girls' antisocial behavior has been shown to emerge after running away from home, whereas boys' delinquency emerged before their first time running away (Chapple, Johnson, & Whitbeck, 2004). Indeed, this evidence suggests that running away from home is a qualitatively different risk factor for girls because it contributes to the onset of their antisocial behavior. Empirical work evidences this pattern by linking girls' running away from home to exposure to subsequent street victimization (Thrane, Hoyt, Whitbeck, & Yoder, 2006), sex work experiences (e.g., Simons & Whitbeck, 1991), drug distribution (Morgan & Joe, 1996; Steffensmeier & Allan, 1996), and engagement in violence with deviant male partners (e.g., Chesney-Lind & Shelden, 2004; Seffrin et al., 2009). Thus, the cumulative risk conferred by sexual abuse, namely reduction in social competence, skill building, and emotional processing combined with the urge to escape through running away, appears to be a key contributor to later exposure to contexts of risk and the promotion of antisocial behavior.

Early pubertal development—Pubertal development is a key marker not only of girls' bio-sexual maturation, but also of their *social* maturation, including through heightened gender role expectations. As with sexual abuse, early menarche may also function as an important bridge to antisocial behavior. That is, early puberty can be influenced by individual and family vulnerabilities and, in turn, can facilitate gravitation toward, and exposure to, gender-salient contexts that work to promote antisocial behavior.

There is clear evidence that the timing of puberty is important to women and girls' antisocial pathways, A number of studies, including prospective studies using both high-risk and normative samples, have evidenced that girls who develop early (before age 10 or 11) are more likely than their average-onset counterparts to begin and maintain engagement in antisocial behavior (Flannery et al., 1993; Ge, Brody, Conger, Simons, & McBride-Murray, 2006; Haynie, 2003; Kaltiala-Heino et al., 2003; Lynne et al., 2007; Najman et al., 2009; Negriff & Trickett, 2009; Negriff, Fung, & Trickett, 2008; Susman et al., 2007; Susman et al., 2010). Thus, existing studies reveal a consistent pattern, which evidences that early-developing girls are at increased risk for antisocial behavior.

Early pubertal development is itself affected by person-level and risky family factors. Indeed, several biological and environmental factors, including genes, neuroendocrine levels, family conflict and childhood adversity, may contribute to the early onset of menarche in girls (see Susman & Dorn, 2009). For instance, one study found a prospective link between family conflict and paternal absence during childhood and early pubertal development among girls (Moffitt, Caspi, Blesky, & Silva, 1992). The authors noted that genetic transmission also likely played a significant role in determining the onset of menarche in girls, given that daughters often displayed similar developmental patterns as their mothers (Cambell & Udry, 1995). More recently, the relationship between the X-linked androgen receptor (AR) gene, father absence, and menarche onset has been examined (Comings, Muhleman, Johnson, & MacMurray, 2002), with results supporting the importance of both genetic transmission and environmental influences on pubertal development. Specifically, the short allele of the AR gene polymorphism was associated with father absence and age of menarche in girls. These findings suggest that fathers who carry this gene may indirectly transmit risk for antisocial tendencies to their daughters *indirectly* via their absence and the effects of genes on early menarche in girls (Comings et al., 2002). Consistent with this latter study showing the importance of the father-daughter relationship, another study found a significant association between childhood sexual abuse and early menarche in an ethnically diverse sample of women but only when the perpetrator

was the father and not a stranger or acquaintance (Zabin, Emerson, & Rowland, 2005). Further supporting the importance of family level factors on pubertal timing, Ellis (2004) has theorized that pubertal timing is determined by the composition and quality of family environments. According to Ellis, childhood will be shortened and puberty accelerated in environments that are developmentally adverse or stressful. Thus, risky genes and family factors seem to confer risk for early menarche, which itself is a risk factor for female antisocial behavior.

Importantly, emerging research suggests that early pubertal development can promote the onset of antisocial behavior through exposing girls to other risky contexts subsequent to puberty. Indeed, girls with early menarche are thought to experience pressure to engage in more mature social roles than they are emotionally and cognitively prepared for once they undergo the physical changes associated with puberty (Eichorn, 1975). Research also suggests that parents, like peers and strangers, have different expectations for daughters who develop early, and give physically developed daughters more responsibility and autonomy than their later-developing counterparts (Silbereisen & Kracke, 1997). The inappropriate social expectations of others are thought to increase the access girls have to contexts in which they can engage in delinquent and risky behaviors (Haynie, 2003). This suggests early puberty also influences girls' *contexts* in important ways. In support of this, a longitudinal behavioral genetics study found that shared environmental factors promote antisocial tendencies for early-developing girls, whereas genetic factors promote antisocial tendencies for average-developing girls (Burt, McGue, DeMarte, Krueger, & Iacono, 2006). This suggests that environmental factors may exacerbate antisocial behavior for girls who experience early menarche. Other studies lend support to this notion, finding that the risk for girls' antisocial behaviors are strongest for those with a combination of early pubertal development and residence in an urban context (Carter, Jaccard, Silverman, & Pina, 2009; Dick, Rose, Viken, & Kaprio, 2000; Obeidallah et al., 2004) engagement with delinquent peers (Lynne et al., 2007) or attendance at mixed-sex schools (Caspi, Lynam, Moffitt, & Lynam, 1993). Further, early pubertal development is related to having older sexual partners and higher rates of teenage pregnancy (Magnusson, Stattin, & Allen, 1986; Manlove, 1997; Moffitt et al., 2001). Though research in this area is relatively new, the existing evidence comes from both prospective and cross-sectional studies including high risk and normative samples. Together, it suggests that age of pubertal onset predicts rates of antisocial behavior (including violence) more strongly for girls from disadvantaged contexts, such as high rates of poverty, public assistance, and unemployment (e.g., a threefold increase in risk; Obeidallah et al., 2004).

In sum, evidence for the importance of pubertal onset on girls' antisocial pathways is limited, but consistent, suggesting a process in which biological development interacts with contextual factors to influence antisocial behavior. The research shows that stressful and opportunistic environments, such as neighborhood disadvantage and mixed-sex schools, exacerbate the effects of early pubertal development on the engagement in antisocial behavior for girls. In our perspective, "gender" may become more apparent following puberty, as it ultimately changes the social meaning ascribed to being a female and amplifies the salience of gender roles and norms (Wood & Eagly, 2002).

Gender-Salient Contexts Characterized by Power and Patriarchy

This subsection describes environments that have the potential to confer female-specific risk for antisocial behavior to the extent that the opportunities and resources afforded to women and girls who are embedded in these contexts are heavily dictated by gendered social forces related to power and patriarchy. In particular, these contexts illustrate how gendered power dynamics that operate outside the individual can shape the development and maintenance of female antisocial behavior.

Opposite-sex peers and romantic partners in adolescence—Research has identified affiliations with deviant peers in childhood and adolescence as an important predictor in the manifestation of antisocial behavior (Dishion, Patterson, & Griesler, 1994; Fergusson & Horwood, 1996; Giordano, Cernkovich, & Pugh, 1986; Haynie, 2001; Sampson & Laub, 1993). Although most studies have focused on the effects of deviant peers on boys, our review identified seven empirical investigations and one meta-analysis that examined the influence of deviant peers on female antisocial behavior (see Table 1). Seven of these studies, including four longitudinal and three cross-sectional studies that sampled across high-risk and community youth, found that affiliation with deviant peers increase delinquent behavior among girls (Ardelt & Day, 2002; Erickson, Crosnoe, & Dornbusch, 2000; Heinze, Toro, & Urberg, 2004; Jennings, Maldonado-Molina, & Komro, 2010; Liu & Kaplan, 1999; Mears, Ploeger, & Warr, 1998; Werner & Silbereisen, 2003). One exception to this pattern of findings is a longitudinal study of 1600 unselected youth that found a significant effect of deviant peers on engagement in antisocial behavior for adolescent boys but not adolescent girls (Piquero, Gover, MacDonald, & Piquero, 2005). However, this study limited their investigation of antisocial behavior to vandalism and petty thefts, which restricts the generalizability of these findings to the influence of deviant peers on minor delinquent acts among unselected girls. Aside from this finding, the preponderance of evidence suggests that affiliation with delinquent peers is one of the strongest predictors of antisocial behavior for girls, as demonstrated by a meta-analysis of 97 effect sizes gathered from studies on female antisocial behavior (mean effect size .53; Hubbard & Pratt, 2002).

Deviant peers in general, however, may not be as important to female antisocial pathways across time as are opposite-sex peers and partners in particular. Adding to the specificity of the literature on peers, evidence cited in Table 1 suggests that adolescent girls who associate with opposite-sex peers are at a heightened risk for antisocial behavior relative to adolescent boys. One of the most compelling sources of evidence comes from a recent large-scale, longitudinal study with over 14,000 adolescents, which found that affiliation with opposite-sex peers increased serious violent offending in girls but decreased serious violence in boys (Haynie, Steffensmeier, & Bell, 2007). Other longitudinal work supports this finding (Moffitt et al., 2001; Rebellon & Manasse, 2004; Seffrin, Giordano, Manning & Longmore, 2009; Simons, Stewart, Gordon, Conger, & Elder, 2002), which is also echoed by recent theorizing in this area (Ehrensaft, 2005). Indeed, despite the fact that this is a relatively new area of investigation, the evidence to date is compelling and informed by primarily prospective, large-scale, comparative studies. The consistent implication from these studies has been that association with opposite-sex romantic partners and peers, especially if they are characterized as delinquent, increase girls' risk for engagement in antisocial behaviors by promoting both the onset and maintenance of antisociality.

One theory advanced by this review is that engagement with opposite-sex partners is an important point in girls' antisocial pathways, because it creates a context in which antisocial behaviors may be directly encouraged or promoted. In support of this, evidence from longitudinal work reveals that the effect of having an antisocial partner on criminal behavior was twice as large in women as men (Simons et al., 2002). Further, research shows that the stability of antisocial behavior from adolescence to adulthood is moderated by the presence of an antisocial romantic partner in women (Moffitt et al., 2001). The effect of a deviant romantic partner, in particular, appears to emerge in adolescence and to be greater for girls and women than boys and men, highlighting the importance of the interpersonal context for women and girls (Haynie, Giordano, Manning, & Longmore, 2005; Leverentz, 2006). This relationship seems further exacerbated in girls who are not monitored by their parents (Svensson, 2003), and girls who experience early, compared to later, menarche, as discussed above, given that they are influenced by older boyfriends at an earlier age (Stattin & Magnusson, 1990; Westling, Andrews, Hampson, & Peterson, 2008). Association with

opposite-sex romantic partners may also expose girls to intimate partner violence and promote dynamics that place girls and women at further risk for antisocial behavior. These dynamics are further explored and elaborated below.

Intimate partner violence and sex work—Women's engagement in intimate partner violence (IPV) and sex work is directly reflected in national arrest profiles underscoring their importance as female-relevant antisocial behaviors (FBI, 2008), and research with high-risk participants suggest that these are among the only contexts in which women's antisocial behavior frequency parallels that of men (e.g., Archer, 2000; Katz, 2000). These contexts are different from the risk factors described thus far, because they often represent contexts within which women are *both* antisocial and victimized. Though IPV and sex work are often not studied as risk factors for women's antisocial behavior, these experiences are common among antisocial women (Snell & Morton, 1994). Of particular importance is research that suggests that when women and girls engage in antisocial behaviors, particularly violence, they do so against their intimates (e.g., Archer, 2000; Miller & Meloy, 2006; Pajer, 1998; Snell & Morton, 1994). In support of this pattern, males who engaged in intimate partner violence are more likely to demonstrate patterns of general violence across contexts, whereas females show a more discriminate pattern of violence contained within relationships (Bouffard et al., 2008; Cogan & Fennel, 2007; Feder & Henning, 2005). Arrest data provide further corroboration, demonstrating that a significant proportion of women's violent offending is perpetrated against male partners (e.g., see dual arrest data by Henning & Feder, 2004).

Important to the goals of this review, other evidence is emerging to demonstrate that violent interpersonal contexts give rise to other forms of antisocial behavior among women and serve to exacerbate female antisocial pathways (Capaldi & Owen, 2001; Kruttschnitt & Carbon-Lopez, 2006). In-depth qualitative work has highlighted a prospective pathway, demonstrating that experiences of IPV precedes and exacerbates women's involvement in future antisocial behavior, including sex work, drug use, and fraud (DeKeseredy, Saunders, Schwartz, & Alvi, 1997; Pettiway, 1997; Muftic & Bouffard, 2007; Simpson et al., 2008). For example, Simpson and colleagues (2008) found that, for women without prior offense histories, experiences of violent victimization were associated with entrance into the criminal justice system. Similarly, intimate partner violence was a robust predictor of women's future aggression and violence perpetration against their partners in both longitudinal quantitative (Katz, 2000) and qualitative research (Miller, 2008).

Importantly, the aforementioned studies demonstrate a link between IPV and women's engagement in, and exacerbation of, antisocial behavior. Other research suggests that IPV experiences have more severe negative consequences for women than men (including physical injury and negative psychological outcomes; Renzetti, Edelson, & Bergen, 2001), which may serve as traumatic experiences that confer risk for subsequent antisocial behavior (e.g., drug addiction; Pettiway, 1997). Indeed, the same meta-analysis that found evidence for bi-directionality of violence also revealed that, though women are slightly *more* likely to use an act of physical aggression, they are also more likely to sustain an injury or require medical attention (Archer, 2000). This finding has been further corroborated by more recent large-scale investigations of epidemiological samples (Carbone-Lopez et al., 2006; Ehrensaft, Moffitt, & Caspi, 2004; Saunders, 2002). Further, IPV and related legal trouble weaken women's informal support networks by physically removing them from these networks (Trotter & Allen, 2009). The effects of traumatization, physical injury, and loss of social support are argued to be particularly relevant for maintaining or exacerbating female pathways into antisociality (e.g., Acoca, 1998).

A similar pattern emerges in relation to sex work, though in contrast to IPV, women engage in sex work more frequently than men (e.g., Burnette et al, 2008). In addition to constituting antisocial (and usually illegal) activity in and of itself, research primarily informed by cross-sectional studies has demonstrated that engagement in sex work is associated with engagement in other antisocial behaviors, including street violence, property crime, robbery, larceny (Dalla, 2000; Geiger, 2006; Willis & Rushforth, 2003), and drug crimes (Graham & Wish, 1994; Johnson, 2006; Spice, 2007; Kuhns et al., 1992; Sharpe, 1998; Yacoubian et al., 2001). Often stemming from previous engagement in status offenses, such as running away from home (e.g., Dalla, 2000, Spice, 2007), sex work has been shown to lead to further illegal activity, including drug use, failing to register with the police, and theft (Pheterson, 1993). A recent qualitative review underscores the link between youth prostitution and other antisocial behaviors, including status offenses, criminal acts such as property crime, and substance use (Cusick, 2002). Subjective accounts of adult female offenders also highlight at least three relevant sex work pathways for women, including sex work to support substance use for women engaging in early-onset pathways, sex work as a profession that places women at risk for later antisociality (including engaging in violence, theft), and episodic and temporary engagement in sex work without as much consequence for chronic antisocial behavior (Bertrand & Nadeau, 2006). Though more longitudinal evidence is needed to specify these temporal relations between the initiation of sex work and engagement in other forms of antisocial behavior, the aforementioned studies suggest that sex work plays an important role in the maintenance of women's antisocial pathways.

There are multiple ways in which IPV and sex work illustrate the effects of gender at a contextual level in the development of female antisocial behavior. In many ways, interpersonal relationships and sex work can be conceptualized as manifestations of the objectification of women and instantiation of a patriarchal system. For some female runaways, once on the street, sex work is clearly connected to relationships with men and interpersonal violence. Cusick (2002) uncovered that the most common routes to female prostitution for youth are through introduction by a friend and being groomed and later pimped by a romantic partner. The system of prostitution is particularly characterized by male dominance, according to most accounts, including control by predominately male pimps, police, and customers (Steffensmeier & Allan, 1996). Within the context of prostitution, this hierarchy is more pronounced than what is observed in even traditional male-female relationships (i.e., male pimps directly control female prostitutes), and acts of male violence are a commonplace strategy characterizing this control (Stark & Hodgson, 2003). It has been documented that batterers and pimps use similar techniques of control as classic coercive control batterers (Dutton & Goodman, 2005), such as social isolation, economic exploitation, intimidation, threats, blackmail, and use of physical/sexual violence (Stark & Hodgson, 2003). These relationship dynamics work to maintain the woman as a conforming actor in the relationship over time and to isolate her socially from other support or resource networks (Lebloch & King, 2006), which increases the likelihood of further engagement in antisocial behavior. In addition, women under the control of a pimp are at greater risk of violence (Norton-Hawk, 2004), and women engaging in sex work in general also experience violence from the men who hire them, further reinforcing their isolation and the consequences of victimization. In one study, almost all female prostitutes reported constantly being threatened with male violence, and the majority had experienced multiple forms of such violence (Barnard, 1993). This furthers and reinforces a cycle of victimization and antisocial behavior salient for women's pathways.

Implications of gender-salient contexts for the effects of gender as an ecological variable—It is important to recognize that few studies (reviewed above) have directly examined, particularly within quantitative paradigms, the effect of gender-salient contexts on women's antisocial behaviors. However, in depth qualitative work (through both

interview, observation, and ethnographic methods) has served to illuminate that these experiences are salient in women's narratives regarding the emergence of their antisocial behaviors. In addition, by focusing on these contexts of risk, namely IPV and sex work, we do not mean to imply that women's violence is explicitly interpersonal or sexual in nature. Rather, our aim is to use these as illustrations of the effects of gender norms and patriarchy on women's pathways and advance emerging theory by proposing possibilities for *why* and *how* gender-salient contexts can serve to promote women's antisocial behavior. We argue that gender-salient contexts accord risk in that they are inherently oppressive for women, characterized by gender norms, patriarchal forces and impossible demands that can systematically place women in social binds that work to promote antisocial behavior, making the experience and impact of these contexts essentially gendered (Lorber, 1994). Importantly, this interpretative analysis begs the question: *how might gender structure women's social worlds and work to promote women's antisocial behaviors?* We propose that gender is relevant as a socio-structural variable for antisocial behavior, because it (a) organizes interpersonal context more specifically and, (b) organizes opportunity structures and social demands more broadly.

Interpersonal contexts and women's social power—Women's antisocial behaviors, especially violence, can be examined by virtue of how women's subjugated roles within interpersonal contexts can create a set of circumstances that promotes antisocial pathways. These subjugated roles reflect the "cultural constructions" of sex typed roles described by Wood and Eagly (2002) and are an essential aspect of an analysis of how gender structures interpersonal contexts (Anderson, 2005). They are further corroborated by continuing evidence of gender inequality in interpersonal relationships, including women's lower power, greater risk of physical harm, and economic dependence on male partners (Bornstein, 2006; Campbell et al., 2003; Tjaden & Thoennes, 2000).

Research documenting the particular link between women's marginalized roles and antisocial behavior is very limited to date, but is an important emerging area that can begin to inform future research and theory (see Brown, 2003; Brown, Chesney-Lind, & Stein, 2007; Jones, 2008; Miller, 2001; Miller, 2008). Miller's (2008) in-depth ethnographic study of young men and women describes such dynamics well. Her study examines the context of dating relationships in urban neighborhoods and, through studying young men and women's social interactions, Miller identifies socio-structural patterns that influence girls' violent acts as they emerge within their relationships. Specifically, Miller identifies a pattern whereby girls use violence against their partners in response to their partner's actual or potential infidelity. She calls this dynamic part of the "playa (player) ethos", which involves the sexual objectification and conquest of women and grants males social status by virtue of the number and nature of sexual partnerships they acquire. At the same time that boys gain status for multiple relationships, however, girls lose status as their behavior is subject to a sexual double standard that sanctions unconstrained sexuality. In Miller's analysis, the boys' gain (in status) is girls' loss (of her partners' fidelity) and reminds girls that they do not have the same social freedom with which to navigate and negotiate their relationships.

Miller identifies a second gender norm that is also an important aspect of the social fabric that promotes girls' violence. Termed the "cool pose", this norm devalues committed relationships in boys and promotes a mask of emotional detachment and aloofness by boys toward their dating partners. A gendered dynamic emerges as girls confront partners about their commitment or potential infidelity (fueled by the playa ethos), often with a motivation to seek reassurance about boys' attachment to them, and are met with a "cool pose" that provides them the opposite of what girls are often seeking (i.e., conveys detachment when girls' report that they are seeking attachment). Thus, girls' violence toward their partners and rival women in response to the playa ethos and cool pose serves a particular social

purpose and conveys particular social meanings for girls and their partners. Though a single exemplar, this ethnography is rigorous in its design, partly due to the credibility of relationships established between the researcher and participants, and uses a variety of qualitative methods, including interviews and observations (Guba & Lincoln, 2000). In addition, though participants were women of color residing in an urban context, a similar gendered pattern revolving around the salience of interpersonal contexts for women's outcomes has been documented in ethnographic work with other populations (e.g., middle and upper class suburban white women; see Chase, 2008), underscoring the impact of gender norms across distinct social locations.

This treatment of gender as a contextual reality is distinct from its treatment as an individual level attribute. First, gender is seen as a characteristic of the context and is viewed as powerful regardless of the extent to which a given individual identifies as 'gendered' (e.g., masculine, feminine). Second, women's antisocial behavior is thought to emerge not only because, for instance, male infidelity is a 'risk factor' for young women's use of violence; rather, male infidelity is viewed as a product of a social structure that is characterized by the marginalization of women and girls (and their expressed desires and needs). Thus, girls' use of violence in this context has less to do with characteristics of the girls and much to with the social power they inherit within the interpersonal space, the purposes their violent acts serve, and the antecedents that give their violence social meaning.

Opportunity structures and social binds—Beyond the interpersonal context, women's antisocial behaviors can be situated by virtue of how they emerge in response to the demands and opportunities embedded in the social contexts they navigate. Some recent research has demonstrated how aspects of the social context can produce particular social pressures, limit girls' viable opportunities, and give rise to antisocial behavior such as violence. Drawing from classic feminist (e.g., de Beauvoir, 1949; Friedan, 1963; also see Lorber, 1994) and recent psychological conceptualizations (Hinshaw & Kranz, 2010), women's social opportunities have been classified as being "bound" by competing and unrealistic social demands that can work to give rise to negative psychological outcomes, including antisocial behavior (e.g., Hinshaw & Kranz, 2010). Collectively termed "double" or "triple" binds, these social forces denote the competing gendered demands on women by society to take on competing roles – such as simultaneously being nurturing, competitive, and feminine. In essence, these binds represent unrealistic social demands, which structure women's opportunities as they navigate their social worlds, and can result in the use of antisocial behaviors (Brown et al., 2007; Hinshaw & Kranz, 2010). In this analysis, women's antisocial acts are conceptualized as a social response to these unrealistic demands, albeit one with high psychological costs.

A recent qualitative analysis illustrates this pattern well. Based on 400 interviews with young women, Brown (2003) examines girls' aggression against other girls. Her analysis suggests that girls' violence arises in response to competing demands in their opportunity structures. The social message essentially suggests that girls must work towards attaining success in every domain (e.g., appearance, academics, athletics, popularity, homemaking skills), even though they will likely not amount to "as much" as their male counterparts (Brown, 2003). In response to these unrealistic expectations, girls' may take their frustrations out on other girls (i.e., through "girlfights") instead of challenging stereotypes, because, as Brown argues, aggressing against other girls is less of a social risk. Interestingly, in this and other (e.g., Miller 2008, Miller, 2001) ethnographic accounts, girls are often fighting – even with other girls – for the preservation of relationships with romantic partners. The phenomenon girlfights may thus be another gender-salient context to examine in future work, but nonetheless demonstrates how young women's violent acts emerge in the

context of social binds that ask girls to accomplish the impossible, discourage development of genuine identity (e.g., Hinshaw & Kranz, 2010) and can result in aggression and violence.

Taken together, examining gender as an organizer of women's interpersonal contexts and opportunity structures illuminates an important paradox: antisocial women and girls are both breaking (through acting antisocially and sometimes violently) and conforming (by attempting to fulfill competing demands and/or working to maintain interpersonal relationships) to gender role expectations. For instance, girls who engage in antisociality to preserve opposite-sex relationships are likely playing gender-congruent roles by fulfilling social expectations about the prioritization of intimate relationships, enactment of their sexuality, and development of caretaking roles (Miller, 2001; 2008). In this context, it is not girls' behavior per se, but the social meaning behind their behavior – for instance, to preserve and maintain relationships with males – that is particularly gender-salient in their pathways to antisocial behavior. Below, we espouse an emerging model that examines the potential interplay of these gender-salient contexts with the person-level and risky family factors that also promote women's antisocial pathways.

Multi-level Theory of Pathways to Female Antisocial Behavior

Based on the reviewed literatures, we propose an integrative and gendered model of female antisocial behavior that expands the conceptual model presented in Figure 1 and incorporates all of the risk factors we reviewed across levels of analysis. Though the complexity of women's antisociality and the overlapping and interactive nature of the risk factors identified makes it challenging to present a single pathway, we emphasize that our goal is to present an empirically-supported model with generative potential to promote fresh insights into the causes and correlates of female antisocial behavior, particularly with respect to conceptualizations of gender (Figure 2).

Our working model integrates the person-level characteristics and risky families factors that are often examined in relation to boys' antisociality (i.e., the "usual suspects"; dotted boxes in Figure 2) with those that suggest relatively more female-specificity (solid boxes in Figure 2). Further, the gendered social context characterized by gender norms, power, and patriarchy is depicted by the purple triangle in Figure 2, which becomes increasingly larger as women and girls' gender identity becomes more personally and socially salient (e.g., particularly following puberty). Thus, risk factors become increasingly female-specific and relevant for understanding antisocial behavior in this model as girls and women enter into adolescence and emerging adulthood, at which point we theorize they are increasingly affected by gender at the socio-structural level.

Importantly, this evidence does not draw conclusions about female specific *motivations* for engaging in antisocial behavior. Indeed, the literature reviewed does not necessarily suggest that, in engaging in antisocial behavior, women and girls are directly and/or consciously fighting against an oppressive social context; nor does it suggest that there is one dominant motivation that promotes antisocial behavior. Rather, studies suggest motivations for antisocial behavior as diverse as seeking safety (e.g., Chesney-Lind & Pasko, 2004), protecting long-term romantic relationships (Miller, 2008), and attaining/maintaining social status (Brown, 2003). Indeed, as highlighted by in-depth studies (e.g., Miller, 2008), there is likely a confluence of oppressive forces, in tandem with person-level and risky family factors, that dynamically and interactively combine to create a multi-level context of risk ripe for the development of female specific antisocial behavior. Though such forces of oppression can become internalized (e.g., Prilleltensky & Gonick, 1996) and contribute to antisocial pathways, more research is needed to elaborate the role of women's motivations per se. Though the model generated through this review may pertain to a variety of

motivations, its primary focus is around advancing testable hypotheses about the interplay between risk factors in female pathways to antisocial behavior.

Generative and Testable Pathways toward Antisocial Behavior

To exemplify the explanatory power of this theoretical model, we illustrate below two overlapping but distinct pathways to female antisocial behavior that are among the many hypothetical pathways that can be generated from our model. The first hypothetical pathway is initiated by the "usual suspects" with respect to antisocial behavior and would be most relevant for girls who inherit a high genetic and person-level liability for antisocial behavior and encounter risky environments in childhood, such as uncaring or neglectful parenting styles or deviant peers. These girls may also be more likely to experience early pubertal development, given evidence for the effects of genes and adverse environments on early maturation in girls. We argue that this point in the pathway is pivotal, because girls' physical maturation is associated with the increasing salience of gender roles and norms, represented by the expansion of the triangle in Figure 2. In the context of peer groups and male partnerships, girls will likely become more aware of and influenced by how their gender serves to organize and determine their place and power in a broader socio-structural context. Competing social demands within girls' opportunity structures, including impossible social "binds", can encourage girls' engagement in antisocial behaviors in the quest to navigate their social world. Indeed, the pathway continues for girls who have intimate relationships that promote use of antisocial behavior in an effort to preserve and maintain these relationships; a social expectation in keeping with girls' gender roles. In sum, this pathway exemplifies how predispositions that affect both genders similarly (e.g., heritability, parenting) can be associated with female-specific risk factors (early menarche, gender-salient contexts) that further exacerbate these gender-common risk factors, especially following puberty where the effects of gender at the individual and broader ecological level combine. Thus, it is not only the impact of these environments as potential stressors or traumas that increase risk for antisocial behavior in predisposed women but also the fact that these gendered contexts accord women fewer resources and power, thereby limiting their options for alternatives to antisocial engagement.

The second hypothetical pathway would characterize girls who inherit relatively low genetic liability for antisocial behavior but experience many of the female-specific risk factors identified by this review. For instance, repeated victimizations in the home may cause girls who would not otherwise act antisocially to seek refuge by running away, thereby increasing their exposure to gender-salient contexts that confer risk for continued antisocial behavior. In less extreme cases, girls may not run away but simply disengage with their home context and search for interpersonal connections through peers and romantic partners. Similar to the first pathway described above, girls' physical development and exposure to peer and partner contexts in adolescence can facilitate and reinforce the increasing salience of gender norms and roles. Emerging adulthood may expose women to unrealistic expectations and competing demands, and increase the salience of their subjugated identities within interpersonal relationships with men, creating a set of circumstances that ultimately promotes antisocial behavior. Finally, women and girls with histories of victimization may be further exposed to risk if they become involved in relationships marked by violence by male partners or even more extreme forms of control, drug use, and violence through engagement in sex work. Moreover, these experiences of victimization may invite monitoring from formal systems (e.g., child protection, criminal justice) that work to punish the use of victims' available coping strategies, including running away.

Likely, most paths to female antisocial behavior involve a hybrid of those just discussed, regardless of the etiological factors that initiate the antisocial pathway. We argue that this

convergence occurs at the point in which social forces related to gender become more salient for women and serve to legitimate patriarchal norms. The influence of gender as an organizer of social structure has been the subject of psychological interest, as exemplified by meaningful and gender-relevant catchphrases popularized by psychological studies of women or gender differences, such as women's tendencies to "tend and befriend" and "women and people, men and things", both of which suggest women's gravitation toward maintaining interpersonal relationships (Taylor, 2006; Su, Rounds, & Armstrong, 2009). We apply this framework to the study of antisocial behavior in particular and draw attention to the role of women's social power as they navigate opportunity structures and interpersonal spaces.

Conclusions and Implications

In addition to generating testable hypotheses about pathways to female antisocial behavior, several conclusions are evident from our review.

1. Multi-level and gendered conceptualizations of antisocial behavior are warranted

The present review suggests that female antisocial behavior is promoted by risk factors from multiple levels of analysis, including person-level, risky family factors, and gender-salient contexts. Some of these, like childhood sexual abuse, seem to be more strongly implicated in female than male antisocial pathways, underscoring the need for gender-specific models. Importantly, the emerging area of gender-salient contexts in female antisocial behavior highlights the importance of gender as an ecological variable in antisocial pathways. Indeed, particular contexts involving relationships with males during emerging adulthood (i.e., deviant male partners, intimate partner violence, and sex work) have been conceptualized as being "crucial" to the development and maintenance of women and girls' antisocial behavior in this review precisely because they workto codify patriarchal norms.

2. Interpersonal and home contexts are particularly predictive of antisocial behavior for women and girls

Childhood victimization primarily occurring in the home has been linked to girls' early conduct problems in numerous studies reviewed above and can work to exacerbate antisocial pathways by conferring risk through exposure to deviant male peers and drug use, for example. In adulthood, the interpersonal contexts in which intimate partner violence and sex work occur are also important contributors for women's antisocial pathways. As reviewed, these patriarchal contexts serve to victimize women but are also the contexts in which women's own antisocial behavior manifests.

3. Developmental considerations are important for understanding female antisocial pathways

As depicted in Figure 2, we argue that the factors thought to confer risk for antisocial behavior in boys – what we have termed the "usual suspects" – are theoretically more likely to accord influence at earlier stages in development, whereas female-specific risk factors are more likely to accord influence at later stages in development. This pattern underscores the importance of the developmental window that likely begins as a girl transitions out of childhood and into adulthood, and her gender identity becomes more salient. Importantly, our model argues that girls are indeed at risk for antisocial behavior at early stages in development, but that this risk is more driven by person-level and risky family factors than gendered social forces, which become increasingly influential as girls' gendered identities develop and are negotiated in the context of competing binds. This implication is in keeping with late-onset trajectories of antisocial behavior but also extends these conceptualizations by suggesting that the emerging salience of gender as an organizer of girls' social worlds

may instigate risk later in development – particularly in the form of demanding opportunity structures and the subjugation of power in the interpersonal context. This pattern of greater environmental push at later stages of development is also supported by research suggesting the greater influence of environments (e.g., versus heritability) later in development for girls and women, but not boys and men (e.g., Burt et al., 2009; Dick et al., 2009; Hicks et al., 2007; Jacobsen et al., 2002).

Limitations and Future Directions

As with any review, there are limitations to the work presented here. For instance, space limitations did not allow for a comprehensive review of other potentially important risk factors (e.g., women's friendship networks, forms of non-sexual maltreatment, hormonal effects, neighborhood factors). In addition, we did not conduct a quantitative analysis of the literature and thus are unable to make claims about significant differences in risk conferred by a particular factor for female versus male antisocial behavior. In many ways, however, a non-quantitative review is in keeping with the generative (and not conclusive) goals of the review and lends itself well to the inclusion of important qualitative work guiding our interpretations. We also limited our review to an examination of risk factors, but acknowledge that there is a need to examine protective factors and their interplay with risk factors in future work. In addition, though multiple excellent longitudinal studies have distilled causal relationships among particular factors, we caution readers not to interpret each "arrow" depicted in Figure 2 as suggesting a causal relationship. Further empirical support will be needed to make such causal claims.

It is also important to recognize that one limitation of this review, reflective of the broader literature, is that it is not positioned to make conclusive distinctions between the factors that contribute to the onset, maintenance, and exacerbation of antisocial behavior. In this review, we focus on factors that could contribute to any or multiple points in female antisocial trajectories, which speaks to the transactional nature of these processes. However, studies that are best positioned to delineate answers are those that use a prospective design and focus on trajectories of antisocial behavior (e.g., Moffitt et al., 2011). We encourage future research to attend to the effects of a broader range of factors outlined in this review, including person level, risky family, and gender-salient contexts, on antisocial trajectories.

Furthermore, although not explicitly addressed in this review, previous work demonstrates the centrality of socioeconomic status, race, and ethnicity as powerful sociostructural predictors of criminality (e.g., critical race theory; Delgado, 2000). Though a discussion of racial and ethnic differences in the application of the proposed model is beyond the scope of this paper (and indeed, the research evidence on women and girls to date), there are several key points to bear in mind. First, women and girls engaging in antisocial behavior are likely defined by "multiple marginality" (Chesney-Lind & Shelden, 2004), suggesting that the confluence of oppressive forces stemming from their race, gender, and/or ethnicity can promote unique pathways to antisocial behavior. Second, there are known group differences with respect to early pubertal development, whereby African American girls have significantly earlier menarche compared with matched non African American controls (e.g., Anderson, Dallal, & Must, 2003); a research finding that is relevant for the interpretation of our model. Third, there is evidence to suggest that norms around gender can differ in meaningful ways between racial and ethnic groups (e.g., Miller, 2008), and investigation of similarities and differences in the instantiation of gender norms represents an important area for future research. Finally, we underscore that it is critical to avoid conflating effects of socioeconomic status with racial/ethnic differences in interpreting current research and conducting future studies (e.g., Okazaki & Sue, 1995).

In addition to those mentioned in reference to the review limitations, there are a number of future directions for research advanced by this review. First, while all of the risk factors in Figure 2 evidenced an association with female antisocial behavior, the interrelationships among them have been subject to much less empirical scrutiny. One critical direction for future research is to systematically examine proposed interrelationships toward the goal of further specifying and extending the pathway model presented in this paper. Second, we hope that researchers will adopt an "expanded lens" framework in future studies when conceptualizing the influence of gender on women's antisocial pathways. This includes continuing to examine gender at the individual level as well as finding creative ways to systematically examine how the experience of double and triple binds and subjugated positions of power in interpersonal contexts may promote antisocial behaviors in women. This line of research is greatly needed, especially given the relative dearth of longitudinal and large-scale investigations that currently inform our gender-salient context section.

Indeed, one contribution of this review is to expand and delineate other relevant clinical conditions on which gender salient contexts have an effect. For instance, existing literature on depression (e.g., Jack & Dill, 1992; Nolen-Hoeksema, Larson, & Grayson, 1999) and eating disorders (e.g., Moradi, Dirks, & Matteson, 2005; Stice, Schupak-Neuberg, Shaw, & Stein, 1994) supports these parallels; namely that gender-salient contexts are crucial for understanding whether and how psychopathology may manifest in women and girls over the lifespan. Importantly, women who engage in antisocial behavior are also highly likely to experience comorbid internalizing symptoms such as depression, and to a greater extent as compared with men (e.g., Moffitt et al., 2001). This suggests that gender-salient contexts can contribute to more than one dimension of psychopathology. However, one interesting distinction for antisocial outcomes is that they represent primarily gender incongruent behaviors, such that antisocial women and girls are acting against prescribed social norms (e.g., by externalizing). This is in contrast to outcomes such as depression and eating disorders, where women who internalize emotions and take a "drive for thinness" to an extreme are, in some ways, acting in accordance with social prescriptives (i.e, norms that over value emotionality and low body weight). Thus, one factor that may lead a girl to experience primarily internalizing disorders, such as depression, rather than engage in antisocial behavior is the extent to which she adheres to gendered social norms. Examining the distinctions and parallels between the effects of gender salient contexts on different psychological outcomes also represents an important future research topic, and one that would challenge psychological research to expand existing models to incorporate gender at both the individual and social levels of analysis.

In sum, the present review provides important evidence for the increasing importance of investigating the unique pathways that characterize engagement in antisocial behavior by girls and women. The conceptual model advanced in this review can help to expand our understanding of a phenomenon that has serious psychological and social implications. Indeed, this review represents one response to an important "challenge to psychology, … to link the vision of women's agency with an understanding of the shaping powers of social context" (Riger, 1992, p. 737–738).

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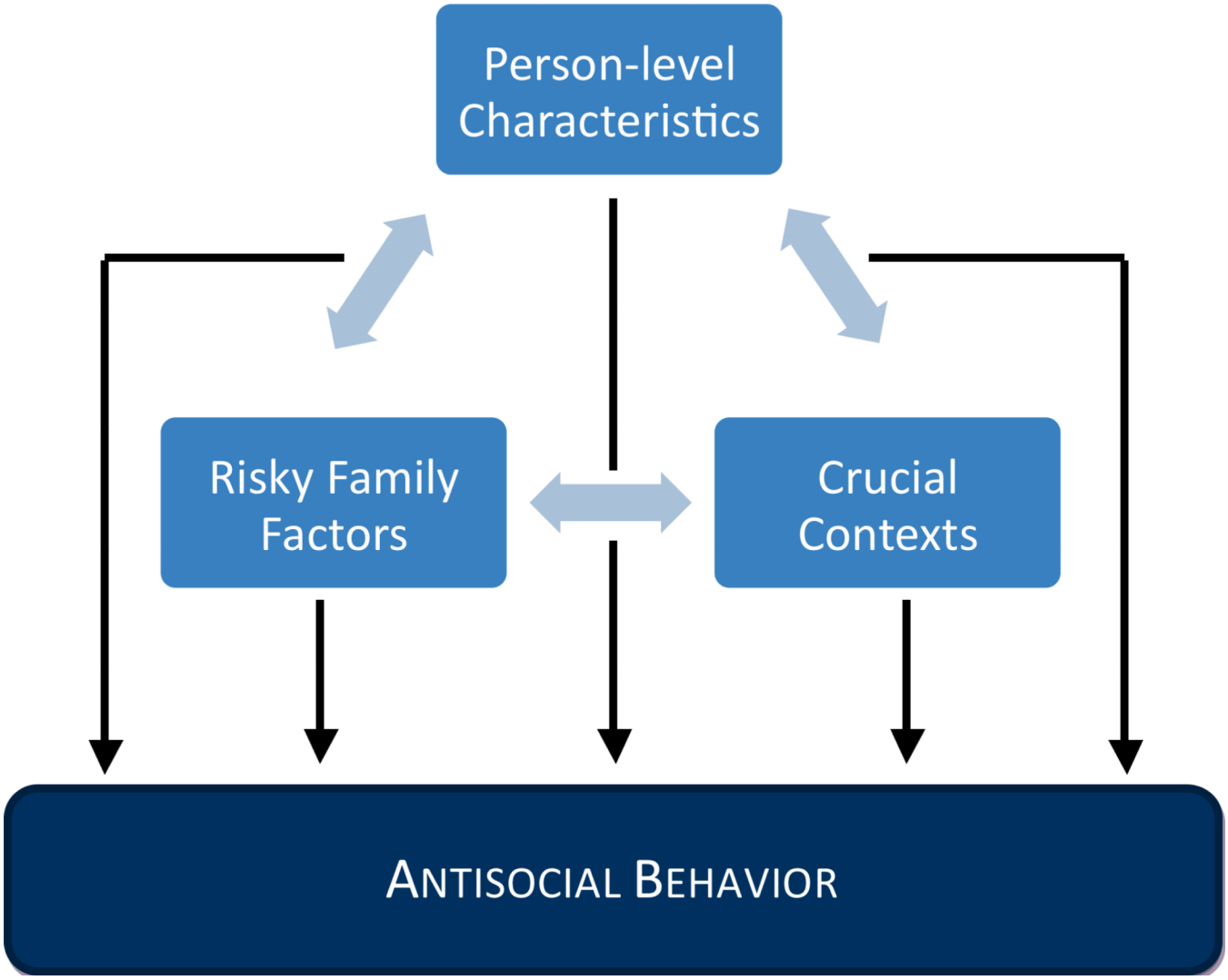

Figure 1.

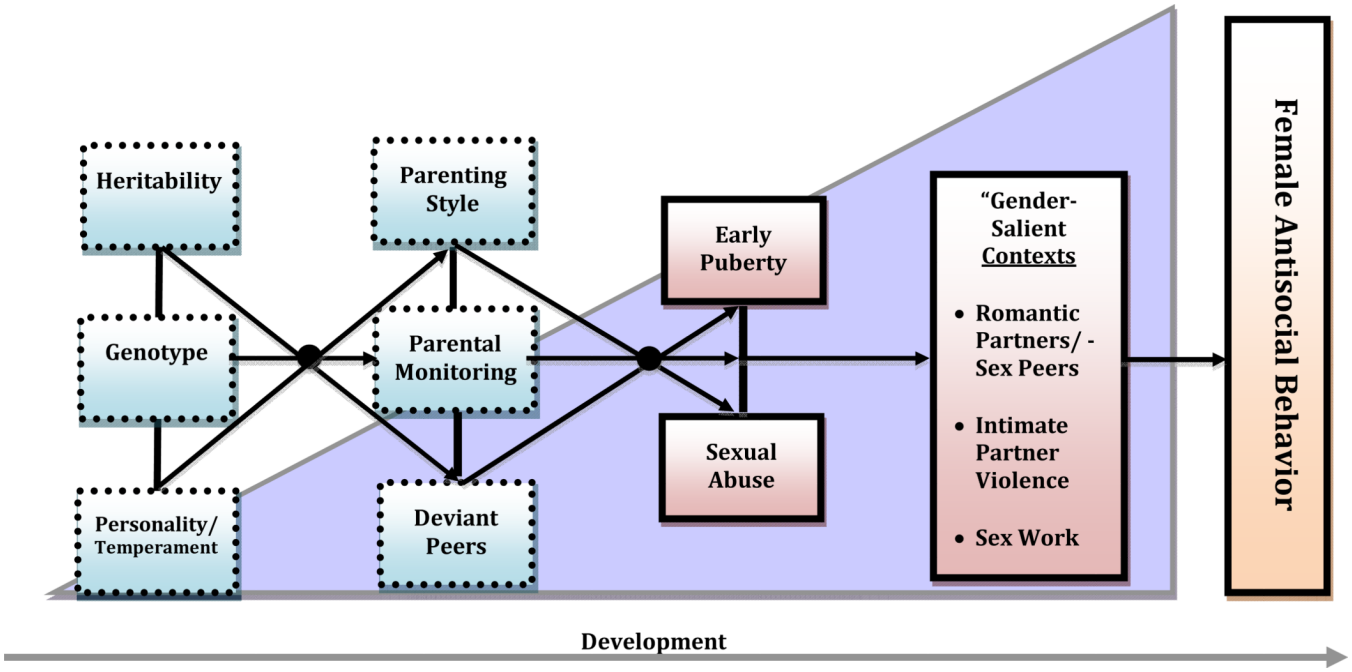

Figure 2.

Note. Dotted squares represent gender-common risk factors. Solid squares represent gendered risk factors. The increasing influence of ecological forces (e.g., gender norms, power, and patriarchy) is represented by the triangle.

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Table 1

Review of Empirical Findings on Predictors of Female Antisocial Behavior.

	Summary of Empirical Studies				
Predictors	**Authors**	**Method**	**Sample**	**Do the findings evidence risk for female antisocial behavior?**	
Heritability	• Jacobson, Prescott, & Kendler (2002)	Retrospective	▪ **Female & Male** ▪ 2580 adult twin pairs & 1622 unmatched adult twins	Additive Genetic Effect	YES
	• Rhee & Waldman (2002)	Meta-analysis of 17 twin studies	▪ **Female & Male** ▪ Children, adolescents, & adults	Additive Genetic Effect	YES
	• Arseneault et al. (2003)	Cross-sectional	▪ **Female & Male** ▪ 1116 high-risk child twin pairs	Additive Genetic Effect	YES
	• Hudziak et al. (2003)	Cross-sectional	▪ **Female & Male** ▪ 14859 child twin pairs	Additive Genetic Effect	YES
	• Gelhorn et al. (2005)	Cross-sectional	▪ **Female & Male** ▪ 1100 child twin pairs	Additive Genetic Effect	YES
	• McGue,Iacono, & Krueger (2006)	Longitudinal	▪ **Female & Male** ▪ 1080 adolescents	Additive Genetic Effect	YES
	• Hicks et al.(2007)	Longitudinal	▪ **Female & Male** ▪ 626 adolescent twin pairs	Additive Genetic Effect	YES
	• Maes, Silberg, Neale, & Eaves (2007)	Longitudinal & Retrospective	▪ **Female & Male** ▪ 4486 adolescent twin pairs	Additive Genetic Effect	YES
	• Van Hulle et al. (2007)	Longitudinal	▪ **Female & Male** ▪ 2403 adolescents	Additive Genetic Effect	YES
	• Goldstien, Prescott, & Kendler (2001)	Retrospective	▪ **Females only** ▪ 971.5 adult twin pairs	Additive Genetic Effect	YES
Genotype	• Widom & Brzustowicz (2006)	Longitudinal	▪ **Female & Male** ▪ 600 (300 high-risk) adults	MAO-A short allele + childhood adversity MAO-A long allele + childhood adversity	YES NO
	• Frazzetto et al (2007)	Cross-sectional	▪ **Female & Male** ▪ 235 (90 high-risk) adults	MAO-A short allele + early traumatic events MAO-A long allele + early traumatic events	NO NO
	• Wakshlag et al. (2009)	Prospective	▪ **Female & Male** ▪ 176 adolescents	MAO-A short allele + prenatal cigarette exposure MAO-A long allele + prenatal cigarette exposure	NO YES
	• Caspi et al.(2002– Note 30)	Longitudinal	▪ **Females only** ▪ 481 adolescents	MAO-A short allele + childhood maltreatment	YES NO

Summary of Empirical Studies

Predictors	Authors	Method	Sample	Do the findings evidence risk for female antisocial behavior?	
				MAO-A long allele + childhood maltreatment	
	• Nilsson et al. 2007)	Cross-sectional	▪ **Females only** ▪ 114 adolescents	MAO-A short allele + childhood adversity MAO-A long allele + childhood adversity	NO YES
	• Sjoberg et al.(2007)	Cross-sectional	▪ **Females only** ▪ 119 adolescents with varying risk	MAO-A short allele + childhood adversity MAO-A long allele + childhood adversity	NO YES
	• Ducci et al. (2008)	Cross-sectional	▪ **Females only** ▪ 291 (half high-risk) adults	MAO-A short allele + childhood adversity MAO-A long allele + childhood adversity	YES NO
	• Gokturk et al. (2008)	Cross-sectional	▪ **Females only** ▪ 741 (110 high-risk) adults	MAO-A short allele MAO-A long allele	NO YES
	• Prom-Wormley et al. (2008)	Longitudinal	▪ **Females only** ▪ 721 children & adolescents	MAO-A short allele MAO-A long allele	YES NO
	• Kinnally et al. (2009)	Cross-sectional	▪ **Females only** ▪ 159 adults	MAO-A short allele + low paternal care MAO-A long allele + low paternal care	NO YES
Personality/Temperament	• Caspi, Henry, McGee, Moffitt, & Silva (1995)	Longitudinal	▪ **Female & Male** ▪ 925 children	Lack of control	YES
	• Guerin, Gottfried, & Thomas (1997)	Longitudinal	▪ **Female & Male** ▪ 130 children	Difficult temperament	YES
	• Krueger, McGue, & Iacono (2001)	Cross-sectional	▪ **Female & Male** ▪ 1180 adults	Dysconstraint	YES
	• Miller & Lynam (2001)	Meta-analysis of 59 studies	▪ **Female & Male** ▪ Adolescents, & adults	Psychoticism, low agreeableness, negative emotionality, novelty seeking, low conscientiousness	YES
	• Lynam, Leukefeld, & Clayton (2003)	Longitudinal	▪ **Female & Male** ▪ 481 adults	Stability in personality from adolescence to adulthood	YES
	• Taylor & Iacono (2007)	Longitudinal	▪ **Female & Male** ▪ 827 adolescents	Dysconstraint, aggression	YES
Parenting Style	• Rothbaum & Weiz (1994)	Meta-analysis of 13 studies	▪ **Female & Male** ▪ Children & adolescents	Parental caregiving	YES
	• Brody & Flor (1998)	Cross-sectional	▪ **Female & Male**	Maternal social +	YES

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Summary of Empirical Studies

Predictors	Authors	Method	Sample	Do the findings evidence risk for female antisocial behavior?	
			▪ 156 high-risk children	financial resources	
	• Avry, Duncan, Duncan, & Hops (1999)	Longitudinal	▪ **Femal & Male** ▪ 204 adolescents	Parent-child involvement and relations	YES
	• Scaramella, Conger, & Simons (1999)	Longitudinal	▪ **Femal & Male** ▪ 319 adolescents	Parental warmth, low hostility, child management skills	YES
	• Pettit, Laird, Dodge, Bates, & Criss (2001)	Longitudinal	▪ **Female & Male** ▪ 440 adolescents	Psychological control	YES
	• Pittman & Chase-Lansdale (2001)	Cross-sectional	▪ **Females only** ▪ 302 high-risk adolescents	Low warmth & supervision	YES
	• Gershoff (2002)	Meta-analyses of 11 studies	▪ **Female & Male** ▪ Children, adolescents, & adults	Corporal punishment: Female < Male	YES
	• Zhou et al. (2002)	Longitudinal	▪ **Female & Male** ▪ 180 children	Parental warmth & positive expressiveness	YES
	• Thornberry, Freeman-Gallant, Lizotte, Krohn, & Smith (2003)	Longitudinal	▪ **Female & Male** ▪ Children, adolescents, & adults	Parental warmth & Consistency	YES
	• Eisenberg et al. (2005)	Longitudinal	▪ **Female & Male** ▪ 186 adolescents	Positive parenting	YES
	• Reitz, Dekovic, & Meiger (2006)	Longitudinal	▪ **Female & Male** ▪ 650 adolescents	Parenting style	YES
	• Hart, O'Toole, Price-Sharps, & Shaffer (2007)	Cross-sectional	▪ **Female & Male** ▪ 124 adolescents	Parental responsiveness & demandingness	YES
	• Manongdo & Garcia (2007)	Cross-sectional	▪ **Female & Male** ▪ 91 adolescents	Maternal supportive parenting	YES
	• Jones et al. (2008)	Cross-sectional	▪ **Female & Male** ▪ 196 high-risk children	Maternal warmth	YES
	• Miner & Clarke-Stewart (2008)	Longitudinal	▪ **Female & Male** ▪ 1,364 children	Mother sensitivity	YES
	• Blatt-Eisengart, Drabick, Monahan, & Steinberg (2009)	Longitudinal	▪ **Female & Male** ▪ 1,364 children	Maternal intrusiveness	YES
	• McDonald, Jouriles, Tart, & Minze (2009)	Cross-sectional	▪ **Female & Male** ▪ 258 high-risk children	Parent-child aggression	YES
Parental Monitoring	• Kim, Hetherington, & Reiss (1999)	Cross-sectional	▪ **Female & Male** ▪ 654 adolescents	Parental monitoring	YES
	• Formoso, Gonzales, & Aiken (2000)	Cross-sectional	▪ **Female & Male** ▪ 284 high-risk adolescents	Parental monitoring	YES
	• Stattin & Kerr (2000)	Cross-sectional	▪ **Female & Male** ▪ 703 adolescents	Parental monitoring	YES

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Summary of Empirical Studies

Predictors	Authors	Method	Sample	Do the findings evidence risk for female antisocial behavior?	
	• Donenberg, Wilson, Emerson, & Bryant (2002)	Cross-sectional	▪ **Female & Male** ▪ 169 high-risk adolescents	Parental monitoring	YES
	• Bowman, Prelow, & Weaver (2007)	Cross-sectional	▪ **Female & Male** ▪ 135 high-risk adolescents	Parental monitoring	YES
	• Fulkerson, Pasch, Perry, & Komro (2008)	Cross-sectional	▪ **Female & Male** ▪ 3,250 adolescents with varying risk	Parental monitoring	YES
	• Laird, Criss, Pettit, Dodge, & Bates (2008)	Longitudinal	▪ **Female & Male** ▪ 504 adolescents	Parental monitoring	YES
	• Vieno, Nation, Pastore, & Santinello (2009)	Cross-sectional	▪ **Female & Male** ▪ 1,147 adolescents	Parental monitoring	YES
	• Windle et al. (2010)	Cross-sectional	▪ **Female & Male** ▪ 598 children	Parental monitoring	YES
	• Cernkovich, Lanctot, & Giordano (2008)	Longitudinal	▪ **Females only** ▪ 109 high- risk adolescents	Parental monitoring	YES
Deviant Peers	• Mears, Ploeger, & Warr (1998)	Cross-sectional	▪ **Female & Male** ▪ 1,626 adolescents	Deviant peers	YES
	• Liu & Kaplan (1999)	Longitudinal	▪ **Female & Male** ▪ 2,753 adolescents	Deviant peers	YES
	• Erickson, Crosnoe, & Dornbusch (2000)	Longitudinal	▪ **Female & Male** ▪ 2,000 adolescents	Deviant peers	YES
	• Ardelt & Day (2002)	Cross-sectional	▪ **Female & Male** ▪ 121 high-risk adolescents	Deviant peers	YES
	• Werner & Silbereisen (2003)	Longitudinal	▪ **Female & Male** ▪ 248 adolescents	Deviant peers	YES
	• Chapple, Johnson, & Whitbeck (2004)	Cross-sectional	▪ **Female & Male** ▪ 309 adolescent runaways	Deviant peers	NO
	• Heinze, Toro, & Urberg (2004)	Cross-sectional	▪ **Female & Male** ▪ 401 (252 high-risk) adolescents	Deviant peers	YES
	• Piquero, Gover, MacDonald, & Piquero (2005)	Longitudinal	▪ **Female & Male** ▪ 1600 adolescents	Deviant peers	NO
	• Jennings, Maldonado-Molina, & Komro (2010)	Longitudinal	▪ **Female & Male** ▪ 3,038 adolescents	Deviant peers	YES
	• Hubbard & Pratt (2002)	Meta-analysis of 97 effect size estimates	▪ **Females only** ▪ Children & adolescents	Deviant peers	YES
Early Menarche	• Flannery et al. (1993)	Cross-sectional	▪ **Female & Male** ▪ 773 adolescents	Early Puberty	YES
	• Beaver & Wright (2005)	Cross-sectional	▪**Female & Male** ▪ 6504 adolescents	Early Puberty	YES

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Summary of Empirical Studies

Predictors	Authors	Method	Sample	Do the findings evidence risk for female antisocial behavior?	
	• Ge, Brody, Conger, Simons, & McBride-Murray (2006)	Cross-sectional	▪**Female & Male** ▪ 867 adolescents	Early Puberty	YES
	• Negriff & Trickett (2009)	Longitudinal	▪ **Female & Male** ▪ 454 high-risk adolescents	Early Puberty	YES
	• Dick, Rose, Viken, & Kaprio (2000)	Cross-sectional	▪ **Females only** ▪ 3065 adolescent twin pairs	Early Puberty + urban context	YES
	• Haynie (2003)	Cross-sectional	▪ **Females only** ▪ 5477 adolescents	Early Puberty	YES
	• Kaltiala-Heino et al. (2003)	Cross-sectional	▪ **Female & male** ▪ 36, 549 adolescents	Early Puberty	YES
	• Obeidallah et al. (2004)	Longitudinal	▪ **Females only** ▪ 501 adolescents	Early Puberty + Neighborhood disadvantage	YES
	• Burt, McGue, DeMarte, Krueger & Iacono (2006)	Longitudinal	▪ **Female only** ▪ 708 mid-adolescent twins	Early Puberty	YES
	• Lynne et al. (2007)	Longitudinal	▪ **Female & Male** ▪ 1366 early adolescents	Early Puberty (mediated by association with delinquent peers)	YES
	• Susman, Dockray, Schiefelbein, Heaton, Dorn, & Herwehe (2007)	Cross-sectional	▪ **Female & Male** ▪ 111 early adolescents	Early puberty	YES
	• Negriff, Fung & Trickett (2008)	Cross-sectional	▪ **Female & Male** ▪ 454 adolescents	Early Puberty	YES
	• Najman, Hayatbakhsh, McGee, Bor, O'Callaghan & Williams (2009)	Longitudinal	▪ **Female & Male** ▪ 2,784 adults followed up for 21 years	Early Puberty	YES
	• Carter, Jaccard, Silverman & Pina (2009)	Cross-sectional	▪ **Female only** ▪ 102 high risk adolescent girls	Early Puberty + urban context	YES
Sexual Abuse	• Garnefski & Arends (1998)	Cross-sectional	▪ **Female & Male** ▪ 1490 adolescents	Sexual abuse	YES
	• Mason, Zimmerman & Evans (1998)	Cross-sectional	▪ **Female & Male** ▪ 396 incarcerated adolescents	Sexual abuse	YES
	• Acoca (1999)	Cross-sectional qualitative	▪**Female only** ▪ 193 interviews and 956 case file reviews, incarcerated adolescent girls	Sexual abuse	YES
	• MacMillan et al. (2001)	Cross-sectional	▪ **Female & Male** ▪ 7016 adults	Sexual abuse	YES
	• Phan & Kingree (2001)	Cross-sectional	▪ **Female & Male** ▪ 272 arrested adolescents	Sexual abuse	YES

Summary of Empirical Studies

Predictors	Authors	Method	Sample	Do the findings evidence risk for female antisocial behavior?	
	• McCabe, Lansing, Garland, & Hough (2002)	Cross-sectional	▪ **Female & Male** ▪ 625 high-risk adolescents	Sexual abuse	YES
	• Gault-Sherman, Silver, & Sigfusdottir (2009)	Cross-sectional	▪ **Female & Male** ▪ 8618 adolescents & young adults	Sexual abuse	YES
	• Verona & Sachs-Ericsson (2005)	Cross-sectional	▪ **Female & Male** ▪ 5424 adults	Child abuse	YES
	• Herrera & McCloskey (2003)	Longitudinal	▪ **Female only** ▪ 141 children followed through adolescence	Sexual abuse	YES
	• Siegel & Williams (2003)	Longitudinal	▪ **Females only** ▪ 411 victims of sexual abuse & 205 matched controls; adults	Sexual abuse	YES
	• Bergen, Martin, Richardson, Allison, & Roger (2004)	Cross-sectional	▪ **Female & Male** ▪ 7,361 adolescents from 27 schools	Sexual abuse	YES
	• Wright, Friedrich, Cinq-Mars, Cyr, & McDuff (2004)	Cross-sectional	▪ **Female only** ▪ 3 samples (Ns = 140, 430, and 94) of varying risk	Sexual abuse	YES
	• Gunnison & McCartan(2005)	Cross-sectional	▪ **Female only** ▪ 131 incarcerated adults	Sexual abuse	YES
	• Arata, Langhinrichsen-Rohling, Bowers, & O'Brien (2007)	Cross-sectional	▪ **Female & Male** ▪ 1,452 adolescents	Sexual abuse	YES
	• Leeb, Barker, & Strine (2007)	Cross-sectional	▪ **Female & Male** ▪ 3,487 high-risk adolescents	Sexual abuse	YES
	• Cernkovich, Lanctot, & Giordano (2008)	Longitudinal	▪ **Females only** ▪ 109 high-risk adults	Sexual abuse	YES
	• Hahm, Lee, Ozonoff, & Wert (2010)	Longitudinal	▪ **Female only** ▪ 7,576 adults	Sexual abuse + other types of maltreatment	YES
Romantic Partners/ -Sex Friends	• Seffrin, Giordano, Manning, & Longmore (2009)	Longitudinal	▪ **Female & Male** ▪ 1,090 adolescents	Antisocial romantic partner	YES
	• Arndorfer & Stormshak (2008)	Longitudinal	▪ **Female &Male** ▪ 955 adolescents	Opposite-sex friends	YES
	• Haynie, Steffensmeier, & Bell (2007)	Longitudinal	▪ **Female & Male** ▪ 14,044 adolescents	Opposite-sex friends	YES
	• Rebellon & Manasse (2004)	Longitudinal	▪ **Female & Male** ▪ 1,725 adolescents	Opposite-sex romantic partner	YES
	• Haynie, Giordano, Manning, & Longmore (2005)	Cross-sectional	▪ **Female & Male** ▪ 2,945 adolescents	Antisocial romantic partner	YES

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Summary of Empirical Studies

Predictors	Authors	Method	Sample	Do the findings evidence risk for female antisocial behavior?	
	• Simons, Stewart, Gordon, Conger, & Elder (2002)	Longitudinal	▪ **Female & Male** ▪ 236 adolescents	Antisocial romantic partner	YES
	• Moffitt et al. (2001)	Longitudinal	▪ **Female & Male** ▪ 211 adults	Antisocial romantic partner	YES
	• Caspi, Lynam, Moffitt, & Silva (1993)	Longitudinal	▪ **Female only** ▪ 479 adolescents	Opposite-sex friends + mixed-sex schools	YES
Intimate Partner Violence	• Katz (2000)	Longitudinal	▪ **Female only** ▪ Waves 1 and 7 of the National Longitudinal Study, adolescents & adults	IPV	YES
	• Carbone-Lopez et al. (2006)	Cross-sectional	▪ **Female & Male** ▪ 16,000 adults	IPV	YES
	• Simpson et al (2008)	Cross-sectional mixed-methods	▪ **Female only** ▪ 351 adults (forensic sample)	IPV	YES
	• Kruttshnitt & Carbon-Lopez (2006)	Cross-sectional qualitative	▪ **Female only** ▪ 205 adults (forensic sample)	IPV	YES
	• Pettiway (1997)	In-depth qualitative	▪ **Female only** ▪ 5 case studies	IPV	YES
Sex Work	• Bertrand & Nadeau (2006)	Qualitative	▪ **Female only** ▪ 21 adult women (in treatment)	Sex work	YES
	• Greiger (2006)	In-depth qualitative	▪ **Female only** ▪ 8 case studies (forensic sample)	Sex work	YES
	• Johnson (2006)	Cross-sectional	▪ **Female only** ▪ 470 adults (forensic sample)	Sex work	YES
	• Norton-Hawk (2004)	Cross-sectional	▪ **Female only** ▪ 50 adults (forensic sample)	Sex work + male pimps	YES
	• Pedersen & Hegna (2003)	Cross-sectional	▪ **Female & Male** ▪ 10,828 adolescents	Sex work	YES
	• Cusick (2002)	Qualitative	▪ **Female & Male** ▪ Youth prostitution	Sex work	YES
	• Yacoubian et al (2001)	Cross-sectional	▪ **Female only** ▪ 3.587 adults (forensic sample)	Sex work	YES
	• Dalla (2000)	In-depth qualitative	▪ **Female only** ▪ 43 adult sex workers	Sex work	YES
	• Graham & Wish (1994)	Cross-sectional mixed-methods	▪ **Female only** ▪ 164 adults (forensic sample)	Sex work	YES
	• Sharpe (1998)	In-depth qualitative	▪ **Female only** ▪ 40 female sex workers	Sex work	YES

Summary of Empirical Studies

Predictors	Authors	Method	Sample	Do the findings evidence risk for female antisocial behavior?	
	• Kuhns et al (1992)	Cross-sectional	▪ **Female only** ▪ 53 sex workers and 47 arrestees	Sex work	YES