

# Evolutionary Forensic Psychology: Perspectives on Child Abductions and Child Homicides

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## Abstract

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*In North America, recent cases of alleged child abductions/alleged homicides garner intense media attention and consume law enforcement resources. Daly and Wilson (1988) outlined a compelling argument that evolutionary psychology is the paradigm from which to examine homicide. Recent work in evolutionary forensic psychology (cf. Duntley & Shackelford, 2008a) has elaborated on this, suggesting that an evolutionary perspective is important for examining all criminal behavior. Given that child homicide is best considered as a successional, life course process of victimization, Lord et al. (2002) proposed that evolutionary psychology can explain patterns of child abductions and homicides, addressing not only human data but also comparative species. The current paper outlines specific hypotheses derived from evolutionary frameworks that will facilitate the criminal investigations of child abductions and child homicides. Policy implications of this perspective for child abduction and homicide reduction are discussed along with social cognitive methods of hypothesis testing.*

*Keywords: child victimization, child abduction, child homicide, evolutionary forensic psychology, victim adaptations*

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In North America, cases of alleged child abduction/child homicide have generated widespread public interest, intense media coverage, and consumed investigative and judicial resources (e.g., Caylee Anthony, Lisa Irwin). To fully understand the behaviors inherent in these events and develop strategies for prevention and timely resolution, researchers have examined child abduction/child homicide from a variety of social and psychological perspectives. Daly and Wilson (1988) outlined a compelling argument that evolutionary psychology is a paradigm from which to examine homicide. Recent work in evolutionary forensic psychology (cf. Duntley & Shackelford, 2008a) has elaborated on this, suggesting that an evolutionary perspective is important for examining all criminal behavior. Lord, Boudreaux, Jarvis, Waldvogel, and Weeks (2002) proposed that evolutionary psychology explains patterns of child abduction and homicide by addressing juvenile mortality as a successional, life course process of victimization. The current paper outlines specific hypotheses derived from evolutionary frameworks that facilitate the understanding of the proximate and ultimate behaviors underlying these crimes. Policy implications of this perspective for child abduction and homicide reduction are discussed along with testable social cognitive predictions.

### **The Evolution of Homicide**

Daly and Wilson (1988) argued that evolutionary psychology is a theoretical template from which to examine homicide. Evolved psychological mechanisms solved particular adaptive problems of survival or

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reproduction. For example, sexual jealousy is a specific emotion evolved in males to ensure paternity. However, homicide as a drastic behavioral response to sexual jealousy does not necessarily increase individual fitness. While homicide may indirectly increase one's chances of reproducing with a desired mate by removing competition, one could argue that this individual's chance of reproducing may even be threatened should the act be avenged or the offender held accountable. Thus, the psychological state that led to the homicide might be adaptive, but the homicide itself is not directly or necessarily adaptive. The influence of selection on the behavioral control mechanism led to individual competition for reproductive resources and the favoring of kin. As such, reproductive competition and nepotism should be large factors in motivating homicides.

Recent work in evolutionary forensic psychology (cf. Duntley & Shackelford, 2008a) has elaborated on this, suggesting that an evolutionary perspective is important for examining all criminal behavior. Homicide adaptation theory (Duntley & Buss, 2008) suggests that selection favored psychological adaptations that contributed to the solution of different problems, including solutions that consistently resulted in killing a rival. Thus, different psychological adaptations are thought to contribute to different types of homicides. For example, the psychology of infanticide is very different from the psychology of violent warfare. Humans have developed "an arsenal of context-contingent strategies" (p. 45) to defeat rivals and homicide has proven itself to be an effective strategy in the arsenal as it has withstood the test of time and is cross-culturally evident. Additionally, Daly and Wilson (1997) identified factors that cross-culturally and universally explain motivations for competitive violence. These factors include "face" (identity or reputation) differences, "status" (one's position in a hierarchical group) differences, gender differences (with unrelated males killing each other at much higher rates than unrelated females), age differences (with homicide rates increasing after puberty, peaking in young adulthood, then declining with age), and homicide affected by marital status for males (with marriage reducing one's risk of killing, and divorce or widowhood resuming one's risk back to single status). Daly and Wilson (1997) attribute much of this to "risk acceptance," considering lifespan developmental changes in the adaptation of risk acceptance.

### **Prevalence of Child Abduction/Homicide**

During the 1980's, the national concern for child abduction and homicide occurrences increased drastically due to the publication of exaggerated missing children statistics and national media coverage of child slayings and sexual abuse (Best, 1990). In response to heightened public anxiety, child advocacy groups and government organizations were formed to conceptually investigate child abduction and homicide (Finkelhor, Hotaling & Sedlak, 1992). Arguably the most comprehensive initial analysis of missing children statistics was published in 1990 by the National Incident Studies of Missing, Abducted, Runaway, and Thrownaway Children (NISMART), commissioned by the United States Department of Justice, Office of Juvenile Justice and Delinquency Prevention (OJJDP). Most cases of child abduction were perpetrated by family members, 163,200 – 354,100 incidents (2.6 – 5.6 per 1,000 children), followed by nonfamily abductions, 3,200 – 4,600 incidents (0.05 – 0.07 per 1,000 children) (Finkelhor & Dziuba-Leatherman, 1994). Of nonfamily abductions, only 200 – 300 were committed by strangers (Finkelhor et al., 1992). In 1999, NISMART reported a decrease in prevalence of family abductions, 56,500 (0.81 per 1,000 children), and an increase in nonfamily abductions, 12,100 (0.17 per 1,000 children). Most child abduction cases reported are familial abductions, many of which are custody disputes resulting in kidnappings by the noncustodial parent (Finkelhor et al., 1990).

Child homicide, with various forms attracting great societal attention and academic study (e.g. filicide, false child abduction allegation), is a rare form of child victimization. Despite the recent decline in many forms of child victimization during the time period from 1993-2004 (e.g., a 50% drop in juvenile homicide), U.S. child homicide rates remain high compared to other countries (Finkelhor & Jones, 2006; Finkelhor & Ormrod, 2001). In 1999, about 1,800 children (2.6 per 100,000 children) were reported as homicide victims, a rate substantially higher than any other developed country (Finkelhor & Ormrod, 2001). In fact, homicide had been reported as the only major cause of the death of children that continued to increase and ranked second or third as the leading cause of childhood death, depending on the age group (Finkelhor & Ormrod, 2001). More recently, reported child homicides decreased with 1,363 victims in 2008 (U.S. Census Bureau, 2012). While data related to child abduction and homicide tend to become available each decade, the Federal Bureau of Investigation (FBI) does not report abduction as a homicide circumstance (Finkelhor & Ormrod, 2001). Methodological issues such as crime categorization by law enforcement make clear documentation of abduction rates difficult. However, FBI data have been used to estimate that there are 40 – 150 children abducted and subsequently killed by strangers annually (Finkelhor et al., 1990; Hanfland, Keppel, & Weis, 1997).

### **Developmental Victimology of Child Abduction/Homicide**

Child homicide is a complex and troubling social problem that can be viewed from a variety of theoretical viewpoints. In recent years, criminologists have studied child abduction/homicide from a geo-temporal, case solvability perspective (Brown & Keppel, 2012; Keppel & Weis, 1993), while sociologists have addressed statistical

patterns and societal influences (Finkelhor, 2008; Finkelhor & Jones, 2006; Finkelhor & Ormrod, 2000). Evolutionary psychologists, behavioral ecologists, and anthropologists have examined child homicide within the larger ecological context of vertebrate juvenile mortality and lethal aggression (Boudreaux, Lord, & Jarvis, 2001; de Waal, 2000; 2001; Pennisi, 2001). When viewed within the constructs of the behavioral changes inherent in juvenile growth and development, evolutionary paradigms have provided valuable insights into the proximate and ultimate causes of child homicide and suggest evolutionarily-based strategies of investigation and prevention (Boudreaux & Lord, 2005).

Given that evolutionary psychology can provide insights into behavioral patterns underlying juvenile mortality, Lord et al. (2002) proposed that child homicide be viewed as a life course process of successional victimization. Patterns of victimization reflect changes in behavior and guardianship that evolve with age. Extremely young juveniles benefit from the protections afforded by vigilant parental guardianship. Such vigilance restricts independence, mobility, and access by potential adversaries. Thus, mortality early in life is frequently centered in intra-familial violence, domestic discord, and failures in vigilant guardianship systems. With maturation, offspring develop increasingly independent behaviors, become physically mature, and decrease their dependence on familial protections and support. Increased independence renders maturing juveniles more vulnerable to and accessible by non-familial adversaries and rivals. Maximized freedom and mobility of sexually mature adolescents dramatically increase their risk of premature death. This is particularly true for young males as they are more likely to aggressively encounter one another.

Boudreaux et al. (2001) suggested that child age, accessibility, and vulnerability are all critical factors affecting childhood abduction and homicide risk. Routine childhood activities and behaviors cause juvenile victims to encounter potential rivals, adversaries and motivated offenders. When coupled with social immaturity, inexperience, and failures in guardianship systems, lethal interactions can result. Recently, Finkelhor (2008) addressed this concept, recognizing children's developmental immaturity affects youth behavioral risk. Whether a child is a fussy toddler or a teenager making poor choices, both create behavioral risk, with the caregiver responsible for recognizing and altering the child's behaviors, thus enhancing maturity. Under safe guardianship, teaching emotional and behavioral self-control reduces risk while away from supervisory control and care. Similar behavioral patterns have been observed in a broad spectrum of non-human vertebrates, particularly those whose life histories are characterized by protracted physical and social development, lengthy parental dependence, delayed reproductive maturation, and longevity (Krebs, 1999; Wilson, 1985).

Thus, when young offspring are under the constant care, protection, and scrutiny of parents and kin, mortality often results from intra-familial (domestic) violence and lapses in vigilant guardianship (Boudreaux & Lord, 2005). Risk of death at the hands of non-family members increases as offspring mature and venture to the periphery of the colony, herd, or family. Finkelhor (1997) termed such age-based changes in childhood victimization "developmental victimology."

### **Ecological Categories of Child Abduction/Homicide**

Lord et al. (2002) recognized two major ecological categories of lethal aggression that characterize child abduction/homicide victim populations: competition (wherein victims are viewed as rivals for a desired resource or resources) and predation (wherein victims are the desired resource). The mortality of young children and adolescent males is often due to competition-based lethal aggression. The predation of school-aged children, particularly females, is frequently sexually motivated. Competition and predation are fundamental ecologic processes by which natural selection molds organismal behaviors and fitness (Alcock, 2009; Krebs, 1999; McFarland, 1999). Child homicide patterns of infants being more likely to be killed by parents or relatives, and adolescents by strangers and acquaintances, are linked to competition and predation and are comparable to the lethal aggression patterns of other species (Boudreaux et al., 2001). A strong correlation exists between victim age and the form of lethal aggression experienced (developmental victimology) with younger and older children (ages 0-4 years and teens) more often being identified as victims of competition-based aggression and school-aged children (ages 5-12 years) largely victims of sexual predation.

As young offspring seek to increase their survival and fitness, they engage in avid competition for parental attention and available resources (Mock, 2011). These behaviors usually maximize health, survival, and reproductive success. However, fervent competitive behaviors can result in heavy parental burdens, resource limitations, and in subsequent aggression, rivalry, violence, and mortality. Young offspring often place burdensome physiological and psychological encumbrances on those charged with their care while concurrently embodying a physically vulnerable, defenseless population. Thus, from an evolutionary perspective, infanticide (the killing of infants by conspecifics), filicide (the killing of one's biologic offspring), and siblicide (the killing of one's siblings) can be viewed as manifestations of competition-based aggression.

The developmental immaturity of younger children requires stable caregiver capabilities with the ability to recognize and aptly handle “high-risk” behaviors of younger children, teaching them appropriate behavioral and emotional control, which, if learned early, may lessen risk taking and aggressive behavior throughout the life cycle (Finkelhor, 2008). Daly and Wilson (1988) reported cross-cultural evidence that infanticides primarily occur due to adulterous conception, poor infant quality, and unfavorable child-rearing circumstances. Mock (2011) also demonstrated evidence, across species, that filicide and sibicide are related to competition for resources. Research findings consistently demonstrate that young children, who are dependent on parents and caregivers for their survival and well-being, are at greater risk of mortality from familial neglect and maltreatment, domestic discord, and competitive rivalry (Boudreaux & Lord, 2005; Snyder & Sickmund, 1999). Numerous studies document the younger child’s risk of homicide by a parent (Daly & Wilson, 1988; Harris, Hilton, Rice, & Eke, 1997). Harris et al. (1997) found that when victim age was considered, younger children were at higher risk of death by their genetic mothers and as age increased, paternal and non-familial perpetrators were more likely offenders. Additionally, stepparents were more likely offenders than genetic parents, with different methodologies evident in the cause of death. Genetic parents were more likely to use a weapon or method resulting in rapid, perhaps, intentional, death (Harris et al., 1997). Children killed by stepparents were victims of long-term abuse and neglect, and more likely to be beaten to death. Risk of death by a stepparent was higher if the stepparents’ biological children were in residence. Data trends, such as these, can provide protective and investigative support for those working in child protection and law enforcement.

Consistent with social control and routine activities theories, school-aged children are typically less demanding of care givers than their younger counterparts, reducing the incidence of intra-familial, competition-based mortality (Boudreaux, Lord, & Dutra, 1999; Finkelhor, 1997; Hanfland et al., 1997). Additionally, they have not yet achieved the independence and mobility of teenagers, have higher rates of adult supervision than teenagers, and generally do not engage in the potentially risky interpersonal relationships and behaviors that characterize early adulthood. While still being subjected to mortality based in domestic discord and intra-familial competition, as well as sexual predation, school-aged children have historically displayed the lowest rate of child homicide of any juvenile age group (Finkelhor & Ormrod 2001; Snyder & Sickmund, 1999).

Daly and Wilson (1994) provide further explanation for the sharp decline in filicide as children age, specifically that their fitness value to their parents increases with age. Older children are less reliant on resources from their parents and eventually are able to reproduce themselves. As children age, the competition between parent and child for resources decreases while their investment value, measured by grandchildren, increases (Daly and Wilson, 1994).

### **The Role of Competition**

Whenever individuals compete for limited, desired resources (e.g., food, territory, mates), conditions are ripe for violent and potentially lethal aggression (Lord et al., 2002). Aggressive competition between adolescent males entering the reproductive arena, and rival peers and established adults is an almost universal ecological phenomenon. Competitive aggression is often a consequence of the daily struggle for individual survival, social status, mate acquisition, and ultimately reproductive success (Lord et al., 2002). A seeming outlier to the developmental pattern, yet completely understandable within the role of competition, is abductions of newborns by women of childbearing age. These female offenders are highly motivated to locate newborns to claim as their own offspring, often to retain their mates, some having previously miscarried (Burgess & Lanning, 2003; D’Orbán, 1972). They will resort to this high-risk strategy, sometimes killing the biological mothers or other adults to abduct children. Many have falsified their own pregnancies and now must acquire a child of the appropriate ethnic background to retain the bond with their mate (Ankrom & Lent, 1995; Burgess & Lanning, 2003; Strohmman, 2005). Considering parental investment theory and competition for resources (e.g., mates), abduction of a newborn provides them with “assurance” of their maternal role. The desire for this “assurance” may increase if previous reproductive failure has prohibited them from successful mate retention and is, perhaps, an illustration of their genetic fitness.

Juveniles reaching the age of sexual maturity must compete with conspecific peers and established adults for social standing, resources, and potential mates. In human and other social vertebrates, natural selection has mediated these competitive interactions by vocalizations, threat displays, and other non-violent behaviors. Conspecific adolescent male rivalry is frequently manifested in potentially injurious, though rarely fatal, behaviors (Alcock, 2001). However, pubertal competition and the resulting aggression can be fatal. Homicide rates for teenagers, particularly teenaged males, far exceed those for all other child age groups (Finkelhor & Ormrod, 2000).

Copious factors undoubtedly contribute to the elevated risk of lethal violence in teenagers. Participation in risk-enhancing, behavior-altering practices, such as substance abuse and trafficking, unemployment and economic deprivation, and the use of firearms, have been shown to significantly increase both offending and victimization

(Finkelhor, 2008). Additionally, cognitive and emotional developmental immaturity associated with adolescence increases the probability of engaging in high-risk behaviors, particularly when environmental controls are lacking. In the absence of adequate social controls, teenaged males aggressively compete with rival peers for social status, and access to and control of limited, socially-valued resources. Ownership of limited, valued resources, serves to insure survival, and elevate within-group standing.

While most teenaged adversarial encounters are resolved by vocalization, posturing, and other comparatively subtle, nonlethal behaviors, the availability and employment of potentially lethal weaponry, when coupled with the behavior-altering effects of alcohol and other illicit drugs can dramatically increase the lethal nature of these competitive interactions. Finkelhor and Jones (2006) identified potential explanations for the reduction in child victimization/homicide during 1993-2004. While juvenile homicide rates declined 50% during this time period, the decline was larger for older juveniles (62% for 14-17 year olds) than younger children (36%). Two of the many factors examined were believed to be particularly relevant to the reduction in juvenile homicide. The first, a decline in the 1990's of the 1980's crack cocaine market generated by youth gangs competing with weapons and violence. Second, stricter gun control laws and penalties enacted in the 1990s reduced the ability of juveniles to access weapons. These two cultural changes could explain the larger decline of homicides in older juveniles.

Teenaged female victims are often on the receiving end of male perpetrated aggression and are more likely to be victimized by acquaintances, strangers, and paramours in domestic violence scenarios and during sexual assaults. Homicide patterns in teenaged women are similar to those seen in adult women, and reflect a combination of domestic aggression and sexual predation (Boudreaux, Lord, & Etter, 2000; Finkelhor, 1997; Hanfland et al., 1997). Disgruntled paramours are frequently the offenders in domestic violence cases, while acquaintances and strangers often perpetrate sexually motivated homicides and abduction homicides. In both scenarios, males are overwhelmingly the offenders (Boudreaux et al., 2001). Occasionally, teenaged females meet their demise at the hands of rival female peers. Such cases are comparatively rare.

### **Evolutionary Psychology of the Child Abduction/Homicide Predator**

Although school-aged children are at a relatively reduced homicide risk, these children account for many sexually-motivated child abduction and child abduction-homicide victims. School-age girls are at significant risk for sexual abduction and exploitation (Boudreaux et al., 1999; Boudreaux et al., 2001). This more autonomous child population is characterized by physical maturity (desirability), emotional immaturity (vulnerability), and lapses in adult supervision (access), which are exploited by sexually motivated offenders. Ease of access and control, susceptibility to coercion, and physical maturity, all likely contribute to the disproportionate representation of these children in sexually motivated child abductions and child abduction-homicides. While offspring engage in behaviors targeted at maximizing their survival and fitness, so do those who would exploit them. Thus, similarities have been observed in the hunting behaviors employed by sexual offenders and predatory vertebrates (Boudreaux et al., 2001; Rossmo, 1996). In children, as in other vertebrate animal populations, predators seek, identify, and exploit the weak, naive, and unsupervised (Finkelhor, 2008; Lord et al., 2002). Most vertebrate predators seek prey in specific geographic domains where they blend in, have familiarity, suspect suitable prey are obtainable, and have escape options. Child sexual predators frequently utilize similar criteria when deciding where to commit their offenses (Lord et al., 2002). Factors in child abduction include geographic familiarity, previous success, victim availability, and security. Recognition of these behavioral and ecological similarities has contributed to the field of geographic profiling (Holmes & Rossmo, 2002; Rossmo, 1997, 2000).

Parallels have been noted in how child victims and prey are selected. Vertebrate predators and sexually motivated offenders rarely select their victims at random. Both select victims for particular reasons, based on sets of pre-existing criteria. While some employ very specific victim/prey selection criteria (preferential offenders), others are more generalist and place more emphasis on spatial and temporal factors (situational offenders). Lanning (2010) suggests that offender behavior resides on a continuum between preferential and situational extremes, and is continually modified by the state of an offender's needs and perceptions. The more dire and immediate the need, either real or perceived, the more flexible the selection criteria become and the higher the risks both predator and offender are willing to take.

Predators and offenders usually do not attempt to engage those who appear strongest, most adversarial, or well-defended. In fact, both predators and sexual offenders classically seek those who appear weak, isolated, and socially naïve (Finkelhor, 2008). Natural selection favors the development of predatory strategies that maximize the probability of success, insure the greatest return for efforts, and minimizes the risk of injury or apprehension. Socially isolated, vulnerable individuals who venture to the periphery of the colony, herd, or family are typically chosen victims.

## Implications for Practice, Prevention, and Prosecution

For those tasked with child protection, knowledge derived from an evolutionary perspective could provide useful application, reducing risk of child homicide and improving investigative methodologies. Duntley and Shackelford (2008b) provided evidence that due to the principle of inclusive fitness, the costs of being a victim extend from the victim to all genetic relatives. Thus, the need to protect potential victims is maximized with the need to protect relatives of a potential victim. Recurring conflicts over status, material, and mating resources lead to contexts subject to selection pressures. Duntley and Shackelford (2008b) defined three temporal contexts of victim defenses: adaptations to prevent or avoid victimization, adaptations to minimize costs during victimization, and post-victimization adaptations. Given that victims of homicide are not afforded opportunities to minimize costs during victimization or develop post-victimization adaptations, a discussion of victim defenses necessarily focuses on prevention strategies.

The behavioral dynamics of child homicide clearly change with victim age (developmental victimology). Understanding the evolutionary influences underlying homicide patterns inherent in different childhood age groups is essential to the development of more effective and efficient age-specific prevention and intervention strategies. Innovative educational curricula and social service programs which provide increased public and parental awareness of the potential ills of parent-child competition and parental isolation; and which provide viable substitutes for lacking familial supports may serve to reduce homicide incidence in young children. While it is beyond the scope of this article to articulate the design of these programs, current programs exist that may be directed at these efforts. For example, programs targeted at reducing competition and parental isolation allow for increased vigilance against potentially infanticidal males and sexual predators. New initiatives such as post-natal, in-home pediatric visiting nurse services, adoptive grandparenting and mentoring programs, interactive day care and preschool, and innumerable other creative and insightful efforts show promise in child homicide prevention. Improved social intervention and control in the 1990's (e.g., police, child protective services, social workers, child safety activities, school resource officers, mental health programs) and the physical presence of such in the media and community have been considered factors correlated to the decrease in child homicide during that period (Finkelhor & Jones, 2006).

As previously mentioned, school-aged children are typically less demanding of care givers than their younger counterparts, reducing the incidence of intra-familial, competition-based mortality (Boudreaux et al., 1999; Hanfland et al., 1997; Finkelhor, 1997). Additionally, they have not yet achieved the independence and mobility of teenagers, and generally do not engage in the potentially risky interpersonal relationships and behaviors that characterize early adulthood. While still being subjected to mortality based in domestic discord and intra-familial competition, school-aged children are disproportionately represented in sexually-motivated child homicides. Central to development of preventive schemes and paradigms is an understanding of the predator-prey behaviors and dynamics inherent in these incidents. Evolutionary psychology research affords potentially valuable insights into the proximate and ultimate mechanisms and stratagems of sexual predation and consequential victimization.

Inner social circles are major proximate factors contributing to the perpetration and mediation of violent interactions and lethal attacks. Natural selection has favored social organisms that employ a variety of societal systems and hierarchical behaviors targeted at maximizing vigilant guardianship, optimizing resource utilization, and minimizing individual parental stressors and burdens. Adults within familial groups of genetically related, cooperating individuals often share parenting and defense responsibilities. Through such systems of social cooperation, young offspring learn effective parenting skills and individual adults are insulated from the rigors and consequences of single parent isolation.

Economic deprivation (resource limitation) and the fast-paced, highly mobile, transient nature of modern societies (temporal and spatial instability) may serve to inhibit cooperative familial parenting and exacerbate individual parental burdens and isolation. For individuals with inadequate parenting skills, poor coping abilities, limited resources and impulsive or violence-prone personality traits, filial competition and parental isolation (real or perceived) may be prodigious (Finkelhor, 2008).

Only through scientifically sound, predictive research will substantive progress be made in understanding, preventing, and adjudicating homicide deaths in children. Lethal aggression comprises a complex interaction of genes, experience, environmental conditions, and simple circumstance. Applying evolutionary-based psychological principles, theories, and testable hypotheses in child homicide research can provide unique perspectives on victim and offender behavior, and the proximate and ultimate factors underlying occurrence and causation. Investigating the dynamics of social aggression and juvenile mortality in human and non-human populations from an evolutionary psychology perspective can, perhaps, provide insights into the origins of these behaviors and proffer innovative approaches to long and short-term problem resolution.

## The Role of Social Cognition in Evolutionary Forensic Psychology Research

Social cognitive research can aid in the evolutionary forensic psychological examination of child abduction and homicide. The most powerful social cognitive research tool applicable to potential queries is true scientific experimentation. Though correlational studies provide important external validity, there is scientific merit of a complete research program that also emphasizes internal validity in laboratory experiments designed to test predictions derived from evolutionary theory.

Conceptually, one key to testing social cognitive predictions derived from evolutionary theory is to induce a motivational state (i.e., relative deprivation, physiological arousal, etc.) and test predictable changes in behavior. Psychophysiological measures such as electroencephalography (EEG), facial electromyography (EMG), and cardiovascular reactivity are all promising avenues with which to examine social cognition of child abduction and homicide. These methods are regularly used in attitude and emotion research. Since psychology is physiologically embodied (Sarter, Bernston, & Cacioppo, 1986), these measures can provide information on cognitive appraisals of stimuli in real time, with the high temporal resolution lacking from current neuroimaging techniques. Additionally, implicit measures of attitude and cognitive accessibility (such as reaction times, the Implicit Association Test, and priming) can also provide insight into the cognitive world of a participant.

Testing convicted child-sex offenders vs. non-offenders on basic attitudes toward a variety of situation-relevant stimuli would allow comparisons to be made as to which associations are more likely to be found in the cognitive network of an offender and how strongly the associations are held (Snowden, Craig, & Gray, 2011). Two keys to this would be to: 1) identify the cognitive triggers that predict offender behavior and 2) identify the situational cues that inhibit the employment of victim adaptations. Such a perspective would examine the cognitive associations of the predator towards the prey.

Experimental methodologies, such as using the Implicit Association Test (IAT), utilizing these triggers would need to be grounded in evolutionary theory to yield the most useful predictions. Experimentally testing proximal social cognitive associations between “child” and “sex” among child-sex offenders and non-offenders provides clarity through the ultimate lens of evolutionary theory. Ultimately, such research could result in the development of screening measures for employment in schools, youth activities, and other child-related occupations. The specifics of the application would depend on varying legal issues of the country in which the screening measures are used. For example, in the United States, such a screening measure would need to be reliably linked to a scientifically conducted job analysis to achieve legal defensibility. Cognitive measures and personality measures regularly meet the standards of legal defensibility in the United States when tied to a job analysis. Other countries have different legal specifications.

Emerging areas of child homicide research needing attention from evolutionary psychologists are the role of developmental disabilities, particularly autism spectrum disorders, in competition-based and predatory child victimization, and psychopathy as an exploitative evolutionary strategy. Recognition of these psychological phenomena as potentially important factors in child exploitation and victimization (Cuevas, Finkelhor, Ormrod, & Turner, 2009; Petersilia, 2001; Skeem & Cooke, 2010), and increased societal concern over frequency of occurrence render scrutiny from both ecological and evolutionary perspectives imperative.

Child homicide is a chronic problem that has plagued humankind since antiquity (Schwartz & Isser, 2000). Culturally sanctioned child homicide practices and criminally motivated acts of child murder result in thousands of juvenile deaths each year (Lord et al., 2002). Understanding how and why children become homicide victims is central to the development and implementation of effective investigative, prosecutive, and, most importantly, preventive programs and policies (Boudreaux & Lord, 2005; Finkelhor, 2008).

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