

Adolescent Risk Behaviors: The Need for an Evolutionary Analysis

Proposal for an Evolution Institute Workshop

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High-risk behaviors in adolescence do not occur in isolation. Indeed, different kinds of adolescent risk behavior not only cluster together but also concentrate in high-risk environments. For example, father-absence during early childhood co-occurs with stressful home circumstances such as dysfunctional parental relationships and low socioeconomic status. These stressful family conditions also co-occur with subsequent offspring behaviors like sexual precociousness, poor parenting behavior, poor academic performance, suicide attempts, and violent offending. Likewise, either causing or experiencing teen pregnancy relates to sexually transmitted diseases, mood and anxiety disorders, young motherhood or fatherhood, high school drop out, chronic unemployment or underemployment, low socioeconomic status, welfare dependence, and the intergenerational transmission of poverty. In total, clusters of adolescent risk behaviors are deeply interwoven with the environmental circumstances that putatively produce them.

The dominant paradigm in the literature for explaining these patterns of high-risk behavior in adolescence is what could be referred to as the *mental-health model*. Central to this model is the implicit if not explicit assumption that high-risk environments *adversely* affect children's well being, promoting *disturbances* in development, even if not clinical disorders per se. This has led researchers to focus on the deleterious effects of familial and ecological stressors on mental health outcomes (i.e., adolescent onset of psychopathology). Dysfunctional behavior in adolescence is seen as the natural consequence of exposure to harsh, unpredictable, or uncontrollable socio-ecological contexts. As such, the mental health model places undue emphasis on expected *costs* and largely ignores expected *benefits* of risk-taking, making it difficult to explain adolescent motives for risky behavior. This leads to the view of adolescent risk behavior as pathological – needing preventive-interventions.

By contrast, an evolutionary perspective suggests that developmental responses to high-risk environments may reflect adaptations in the evolutionary (not just psychological) sense of the term, rather than simply disturbances in, or deviations from, “optimal” development. Central to this perspective is the concept of conditional adaptations: evolved brain mechanisms that were shaped by natural selection to detect and respond to specific features of childhood environments—features that proved reliable over evolutionary time in predicting the nature of the social and physical world into which children will mature—and entrain patterns of development that reliably matched those features during a species' evolutionary history.

Conditional adaptations underpin development of contingent survival and reproductive strategies and thus enable individuals to function competently in a variety of different environments.

For example, children's brains and bodies tend to respond to dangerous or unpredictable environments by growing up fast and living for the here and now. This "get it while you can" strategy often translates into such risky behaviors in adolescence as violent competition for status and respect, breaking rules and laws, consuming and selling drugs, gang membership, early and unprotected sex, and teen pregnancy. Although such risky behaviors are not healthy or desirable from a public-policy perspective, they are reliable developmental responses to dangerous or unpredictable rearing environments. In the world in which humans evolved, such environments meant a shorter lifespan and uncertain future. In this context, high-risk adolescent behaviors that increased status among peers and access to mates increased chances of reproducing and passing on your genes.

Accordingly, what is routinely regarded as "negative" consequences of exposures to high-risk environments may represent, in part, the output of naturally selected adaptations that once promoted survival and reproduction in those environments—and may even still to this day. Indeed, contingent high-risk strategies may produce *short-term gains* (e.g., controlling neighborhood turf, acceptance into bad-boy cliques, lots of girlfriends) but *long-term losses* (e.g., premature disability and death). Although some regard long-term thinking and planning as desirable and short-term thinking and planning as undesirable, behavioral ecologists and economists regard discounting future losses in favor of immediate gains as adaptive under certain circumstances.

In total, the mental health model is limited in its ability to explain patterns of adolescent risk behavior because it does not explicitly model evolutionary constraints—how the adolescent brain was shaped by natural selection to respond to risky environments. An evolutionary analysis is needed, therefore, to more fully understand the contexts and contingencies of adolescent risk behavior. The goal of the proposed Evolution Institute workshop is to increase and promote this understanding, which would have great relevance to the long-term goal of informing prevention-intervention strategies for high-risk youth.

- First and foremost, this understanding would permit us to distinguish adaptive from non-adaptive risk-taking (i.e., risky behaviors that increase adolescents' access to mates and resources versus those that simply cause harm) before any intervention or prevention strategy is even considered.
- Second, this increased understanding would locate many of the causes of risk-taking behavior in the social ecologies that individuals inhabit rather than somewhere within the individuals themselves. For example, growing up in environments where people live fast and die young (i.e., short life expectancies), where there are high levels of illness and premature aging (e.g., 30 year-olds look like 50 year-olds), and/or where home environments frequently change (e.g., repeated parental divorce and repartnering) reliably provokes risk-taking behavior in adolescence. Evolutionary theory affords a powerful tool for analyzing developmental responses to such high-risk environments.
- Third, this understanding would enable us to better determine the person-environment mismatches that sometimes cause otherwise adaptive strategies to malfunction. Resolving such mismatches could help bring such displaced individuals into closer

alignment with their contexts, as by either altering the inappropriate behavior or selecting more congruent niches. For example, many girls complete puberty by age 12 and attract attention from older males. Because their self-regulatory capacities do not fully mature until early adulthood, these young girls are generally not socially or cognitively equipped to deal with this attention. The result is elevated levels of risky sexual behavior and substance abuse among early bloomers—but only when girls attend mixed-sex schools. All-girls schools provide a more congruent niche that is protective against the effects of early sexual maturation. Stable home environments and good neighborhoods also buffer girls against the effects of early sexual maturation. In total, many adolescent behavioral problems may arise from a mismatch between the brains and bodies of developing adolescents and the risks and opportunities afforded them by their social environments.

Because evolutionary theory provides a powerful tool for distinguishing adaptive from non-adaptive forms of risk-taking behavior, for predicting developmental responses to high-risk environments, and for analyzing mismatches between features of persons and their environments, it has myriad implications for shaping prevention-intervention strategies for high-risk youth.