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Original Article

Parenting influence on the development of life history strategy

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ABSTRACT

Using a newly developed measure of life history strategy, the influence of maternal and paternal sensitivity in childhood and maternal and paternal authoritative parenting in late adolescence on developing life history strategy was examined. Maternal sensitivity and maternal and paternal authoritative parenting were positively correlated with a slow LH strategy. Maternal sensitivity and maternal authoritative parenting each explained unique variance in life history strategy as measured in late adolescence. The results remained after controlling for ethnicity, sex, childhood SES, intelligence, and childhood temperament. Consistent with previous research and theory the results suggest that maternal sensitivity in early childhood affects the development of life history strategy. However, the results also suggest that significant post-pubertal plasticity in life history strategy development remains and that parental behavior continues to be influential in an individual's developing life history strategy.

1. Introduction

Since the transition of life history (LH) theory from a framework by which to understand adjustments in reproduction given variance in carrying capacity (Pianka, 1970) and species differences along a number of reproductive and life course characteristics (Promislow & Harvey, 1990, 1991), to an approach explaining human individual differences, parental influence in early development has been a key focus. Draper and Harpending (1982) identified the presence or absence of a child's biological father as an important influence on the child's developing reproductive strategies. They proposed that girls whose biological fathers are absent are less discriminant in their sexual behavior and begin sexual relations at an earlier age, while boys respond to father presence or absence through a shift in their cognitive profile; father absence leading to increased verbal and decreased mathematical ability. There has been ample research into and support for Draper and Harpending's proposition in relation to the development of girls (Ellis et al., 2003; Hoier, 2003; Quinlan, 2003), but the hypothesized effect of father absence or presence on boy's cognitive profile has received little attention.

Belsky, Steinberg, and Draper (1991) formalized many of the ideas presented by Draper and Harpending (1982) into a developmental model with two prototypical developmental paths which more clearly reflect LH theory. What Belsky et al. (1991) labeled a Type I developmental path, now most often referred to as a fast LH strategy, includes the following in succession: marital discord/high stress/scarce resources, insensitive parenting, insecure attachment, early maturation, and early sexual activity/emphasis on short-term mating/low parental investment. This developmental sequence illustrates that the fast LH strategy is a quantity approach to reproduction with less restrictive sexuality leading to more offspring, but with decreased parental care. The prototype of a Type II developmental sequence, often referred to as a slow LH strategy, illustrates a quality approach to reproduction with more restrictive sexuality leading to fewer offspring, who receive greater parental investment. The Type II, or slow LH strategy, developmental sequence includes adequate resources and positive relations between parents, sensitive parenting, secure attachment, delayed maturation, and finally, delayed and restricted sexual activity/high parental investment.

In the Belsky et al. (1991) model, parental sensitivity as experienced by children in their first five to seven years of life is the foundational environmental influence on developing LH strategies. Del Giudice (2009) proffered a refinement of this model focusing on both sex differences in developing LH strategies and the idea that the middle childhood years (7–11 years of age) and corresponding adrenarche are a switch point in LH strategy development. This later possibility is important in that it stresses continued plasticity in developing LH strategies past the first five to seven years identified by Belsky et al. (1991). This point is extended with Del Giudice (2009) contrasting his refined developmental model with early approaches:

> Current life history models tend to confine plasticity to the first years of life, without considering how individuals may adjust their strategies later in development. Nevertheless, it is quite reasonable to assume that, given the long reproductive lifespan of humans, there is room for strategic change in adolescence and adulthood as well (p. 18).

Indeed, while not as exacting as Del Giudice's (2009) model, Ellis, Del Giudice, Dishion, and Wilson (2012) speculate that because adolescence is obviously the time of a clear qualitative shift in human development, puberty being the transition to reproductive capacity, it may also act as an 'inflection point' in LH development. Although, there has been research conducted on parental influence of developing LH strategies

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beyond the originally identified target time of the first five to seven years of life, and the results suggest continued parental influence (Belsky et al., 2007), to our knowledge no study has yet to look at parental influence into adolescence.

If there is significant plasticity in LH strategy development in adolescence, then it is possible that parental influence continues into this period of life as well. While there are differing accounts as to why parenting styles in adolescence are associated with adolescent outcomes (e.g., Steinberg, 2001; Kerr, Håkan, & Özdemir, 2012), it is clear that such an association exists; authoritative parenting being predictive of a number of what are considered positive social outcomes. Leaving aside an extensive account of the debate on the direction of influence, such an association means that there could be a significant parental influence on adolescent outcomes. Considering this possibility in the context of developing LH strategies, at the very least an association between parenting style and sexual behaviors should emerge. In a review of the relationship between dimensions of parenting and adolescent sexual behavior De Graaf, Vanwesenbeeck, Woertman, and Meeus (2011) found that parental support and, to a lessor and more inconsistent degree, parental control (i.e., an authoritative parenting style) were associated with delayed, responsible, and enjoyable sexual experiences. Risky sexual behaviors, including having more partners, may also be inversely associated with parental support (Luster & Small, 1994). Thus assuming some directional influence from parent to child, parental support during adolescence may affect the developing LH strategy, with high levels of parental support directing development toward a slow LH strategy.

1.1. A short note on measurement

To date longitudinal studies on the development of LH strategy have relied upon what Figueredo et al. (2014) refer to as biometric measures (e.g., pubertal timing). In modern environments psychometric and behavioral based measures may often be superior (Figueredo et al., 2014). For example, the disaggregation of sexual intercourse and reproduction due to modern contraception makes LH indices like total number of conceptions more difficult to place as an indicator of a slow or fast LH strategy. Additionally, while measures of markers of LH strategy such as pubertal timing have produced a number of findings fundamental to our understanding of developing LH strategy; focusing on pubertal timing as an outcome measure may have inadvertently blinded researchers to possible post-pubertal influences. In our investigation we utilized a newly developed measure of LH strategy (Sherman, Figueredo, & Funder, 2013) based on the California Q-set (CAQ; Block, 1961). Importantly, using the same data file used in the current investigation Dunkel, Summerville, Mathes, and Kesserling (2014) established convergent validity between the psychometric based CAQ measure of LH strategy and a number of biometric based measures of LH strategy.

1.2. Summary

The Belsky et al. (1991) model has been tremendously influential with current refinements to the model, such as those introduced by Del Giudice (2009), offering the opportunity for further advancement in the understanding of the development of LH strategies. The current investigation was undertaken to explore the possibility for further refinement by testing the hypothesis that parental influence in the developing LH strategy extends into late adolescence. Importantly, longitudinal data employing a psychometric measure of LH strategy (Figueredo et al., 2014) were used to examine this possibility. This is important because longitudinal research employing a psychometric based measure of LH has not been used to examine even the fundamental aspects of Belsky et al. (1991) approach (e.g., parental sensitivity is predictive of future LH strategy).

2. Method

The Block and Block data (2006a, 2006b) and documentation files were obtained electronically from the Henry A. Murray Research Archive. The Block and Block study was a 30-year longitudinal study which took a holistic approach; measuring numerous aspects of development with multiple measures and methods across several waves of data collection. Participants were recruited from two preschools in Berkeley, California when they were three to four years of age with the last wave of data collection occurring when the participants were in their early 30's. Data from the initial wave of data collection and at waves when participants were ages four, five, and 18 were used for analysis.

The sample size and composition varies based on the variables being analyzed (i.e., the measures completed by participants). Because the focus is on the effects of maternal and paternal sensitivity, the base sample composition of participants who have maternal or paternal sensitivity data is reported. The base sample for maternal sensitivity included 117 participants (59 male), 77 of which were White, 32 Black, five Asian, and three "other". The base sample for paternal sensitivity included 96 participants (44 male), 69 of which were White, 18 Black, six Asian, and three "other".

2.1. Measures

2.1.1. Parenting

2.1.1.1. Maternal and paternal sensitivity in childhood. Maternal and paternal sensitivity scores were based upon the Q-sorts for the following procedure described by Block and Block (2006a) and Kremen and Block (1998).

At age 5, the sample members were observed interacting with each of their parents in a series of standardized situations. Each parent taught a battery of four cognitive tasks to his or her child. Two parallel versions of the battery were administered in a counterbalanced design to control for order and task effects, and sex of child and sex of parent effects as well. Mothers and fathers were seen by different examiners in sessions separated by at least five weeks. The tasks included in the battery were selected to be of interest to both parents and children, to be sufficiently difficult so that children would require parental assistance yet sufficiently easy for quick comprehension by parents, and to require minimal explanation by examiners to parents.

The four tasks of the battery were:

1. Construction of squares or posts. In this task, the child was presented a two- dimensional plastic square and a number of two-dimensional plastic pieces of various shapes which could be assembled in various ways to match the standard square. The parent instructed the child to make as many squares as possible. The posts version of the construction task was identical except for the use of a three-dimensional rectangular wooden post-standard and various three-dimensional wooden pieces in place of the plastic two-dimensional materials used in the squares version.
2. Matrix task (geometric shapes or "people pieces"). This task required the child to place stimulus pieces in the appropriate position within a two-dimensional matrix. In the shapes version of the task, pieces varied in shape, size, and color; in the "people" version, the pieces consisted of tiles with various types of human forms painted on them. These forms varied in color, age, sex, and size. In both versions of the task, row and column markings were used to indicate how the matrix should be completed.
3. Maze-completion task. In one version of this task, a difficult maze (similar to one included in the WPPSI) was painted on the glass of an Etch-A-Sketch. In the other version, a maze was constructed by covering all but one hole in a labyrinth game (tilted box) modified with additional wooden pieces. In both versions, the child needed to use the toys' control knobs to solve the maze.