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Personality Development in Evolutionary Perspective

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ABSTRACT A relationship between personality processes and evolution can be seen when behaviors associated with sexual maturation, mating, and parenting are examined. This article stipulates the types of proximal cues implicated in the shaping of personality variables that become important in the development of the individual's reproductive behavior.

Thinking about personality processes and evolutionary processes at the same time is difficult, since the two domains are concerned with very different causal influences (Buss, 1984). Personality theorists attend to individual differences and the unique and highly proximal factors thought to be implicated in personality formation. Evolutionary theorists, on the other hand, are more likely to look at species-wide, behavioral adaptations and to interpret them in terms of distal or remote factors linked to reproductive success. The fields are potentially drawn together when their shared focus is the behavior of the individual, although in both camps there is a strong temptation to collect data and then retreat, for the purposes of explanation, into "black box" formulations such as personality dimensions or reproductive fitness differentials. Personality, because it remains inferential, is not wholly satisfactory to many rigorously behavioral social scientists, fitness differentials between individuals suffer from their own limitations, since

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the long-term contribution of few or many offspring to posterity is not knowable

In this article we tread carefully on the middle ground. The goal we have set ourselves is to make sense of disparate literatures on environmental influences on personality development that are consonant with an evolutionary interpretation. For practical purposes, any article that purports to deal with evolution, environment, and personality must be selective. Our strategy here is to concern ourselves with some personality dimensions that seem most closely associated with behaviors of sexual maturation, mating, and parenting. Our goal is to stipulate the types of proximal cues that seem, on the basis of current research, to be most strongly implicated in the shaping of certain personality variables that later become important in reproductive behavior.

We believe that paying attention to events in early childhood is important for two reasons. First, the kind of learning necessary to produce a competent adult takes years to acquire and to consolidate. Second, what is appropriate to learn is highly dependent on the family or social setting into which a person is born. If prolonged practice and attention are required for good performance in adulthood, and if at the same time the environment changes through time but more slowly than the average person's life span, then an optimum mode of adaptation may be that of establishing a learning track early in development (Draper & Harpending, 1982). Before proceeding to the focus of this article, namely, the interrelation of context, rearing, personality, and reproductive strategy, several comments are in order regarding current evolutionary thinking.

Human Origins and Evolutionary Theory

Given the very recent expansion of humans into diverse continents and climatic zones, we know that human response capability has great latitude. This expansion was made possible by vastly increased intelligence and symbolically mediated cultural systems. Precisely when or how these changes came about is the subject of debate in paleo-anthropological circles. Most authorities now agree that the origin of fully modern *Homo sapiens* was quite recent, occurring less than 100,000 years ago, and that it was this final transformation which triggered the sudden expansion of humans into previously unexplored niches (Pfeiffer, 1982). Human genetic material has been exposed to diverse physical as well as social environments. This unstable diversity of environments is the context in which plasticity in the phenotype

would be advantageous compared with a fixed strategy (Barkow, 1989, Cavalli-Sforza, 1974)

Having argued for plasticity in the individual and variability in the social context, we emphasize that the effects of past environments govern human development. These constraints are not obvious to people living in postindustrial environments, where fertility is low and public health measures and vaccinations ensure survival and longevity to most people. Similarly, the presence of benign, stable, centralized government frees citizens from the necessity of developing strong, local, kin-based alliances to avoid competition with other human groups. Past environments did not offer these safeguards and securities, they exerted different pressures on human psychology as well as morphology (Chomsky, 1980, Tooby & DeVore, 1987)

r- and K-selection In this article we maintain an ethological orientation, which emphasizes evolutionary and phylogenetic origins of behaviors and behavior complexes. A useful place to begin a discussion of the relation in humans between ethology and developmental outcomes is with the concepts of *r-* and *K-selection* and the implications of mammalian biology for sex differences in reproductive strategy. The notions of *r-* and *K-selection* were developed to describe the ways in which organisms partition effort between mating and reproduction (MacArthur & Wilson, 1967, Pianka, 1970). The idea was that *r-selected* organisms have developed in unstable environments, where catastrophic events decimate populations. Under these conditions organisms are selected which can recoup drastic setbacks through high fertility. In general, *r-selected* organisms also have life history traits of rapid maturation, reduced parental care, and shortened life span.

K-selected organisms, on the other hand, evolve in more stable environments, characterized by dense concentrations of diverse species. In such competitive environments, there is little payoff for high fertility. Thus these environments select for lower fertility, delayed maturation, longer life span, and more efficient extraction of environmental resources. Mammals, for example, are more *K-selected* than birds, reptiles, or insects, but within the mammalian class there is variability, as between gerbils or domestic cats (*r-selected*) and elephants or apes (*K-selected*). An especially important attribute of *K-selected* species is increased parental care. *K-selected* organisms produce fewer offspring (singleton births, for example, rather than litters) and parental care goes on for years rather than weeks or months.

The concept of r- versus K-selection has been used to refer to *variability among organisms of the same species* with respect to an ontogenetic and reproductive strategy (Rushton, 1985). One of the more intriguing findings of recent comparative ecological studies is that many organisms are capable of "facultative" adjustments (suited to current circumstances) in such things as the rate of sexual maturation or the development of a particular type of mating behavior. Certain bird species, for example, vary their mating behaviors between polygyny and monogamy, depending upon the quality of foodstuffs in the environment (Orians, 1969, Verner, 1964). This is an example of how environmental variables affect the mating behavior of parents and hence the type of rearing experienced by hatchlings. Other studies show that the social structure of group-living animals can affect the timing of sexual maturation in such diverse species as rodents, wolves, wild dogs, and baboons (Hausfater, 1975, Mech, 1970, Wiley, 1981). How the adjustment is made, and on the basis of what cues, is not well understood. However, it seems probable that the ability of individual organisms to fine-tune complex behavioral and bio-endocrinological sequences has been selected, because it allows organisms to deal with environmental variability.

Mammalian sex differences in reproductive strategy Consider first the constraints imposed by mammalian reproductive organization. All organisms are designed to reproduce themselves, and in this sense all functions of an organism are reproductive. All organisms must be able to partition effort, measured in time, energy, or exposure to risk, among the various requirements of growth, maintenance, and reproduction. Reproductive effort itself is composed of both mating and parenting (Kurland & Gaulin, 1984). Throughout the mammalian class two factors have far-reaching implications for reproductive behavior. First, there is pronounced asymmetry in the reproductive organization of the sexes, such that females vastly exceed males in the requirements of the parental role. This is a consequence of gestation and the dependence of young on milk, which comes only from the mother. Female parentalism is tightly constrained. In contrast, mammalian species vary in the extent to which males contribute parenting effort. In some species, females require only insemination by one male. They then go on to rear their young alone. In these cases, the female's independence is possible because of her ability to gather resources on her own, because she can independently elude predators. Males in such species may make distal

contributions to offspring survival, as by defending their territory and keeping out competitors. In such cases, however, there is no permanent mating relationship, and male reproductive effort goes primarily into mating effort (competition with other males) rather than into parenting effort (helping to feed young or guarding the den).

Other mammalian species reveal a less dimorphic pattern, mates form long-lasting pair bonds, and a more active fathering role is thought essential for a male's fitness. In mammals, high male parental behavior is rare, male investment will not evolve (or be facultatively expressed) except where males gain fitness in offspring survival that outweighs the cost of foregone mating opportunities. From the point of view of evolutionary biology, many aspects of human behavior become comprehensible in this context.

Highly altricial, humans are the most K-selected of the primates, the mammals most closely related to humans. For a highly social species such as ours, successful maturation requires not only morphological growth and development but acquisition of the social and emotional skills necessary to insure the continued protection and tolerance of other adults, particularly the mother. Throughout childhood and adolescence the individual learns important lessons about relationships and interactive processes that will set the stage for his or her own maintenance, mating, and reproduction.

In spite of these invariant, phylogenetic constraints, the human mating and parenting systems that can be observed are, in fact, quite variable both within and between cultures. Although all known human cultures recognize marriage (a social institution that regulates sexual behavior, ascribes paternity, and provides for the rearing of young), the actual norms regarding sexual behavior, relations between spouses, and the rearing of children are extremely variable (Whiting & Whiting, 1975a). In some societies, children are reared in the context of a bonded, cooperative relationship between mother and father. In these societies postmarital sexual mores are strict and female sexuality is regulated, presumably as a trade-off for heightened male parental investment. In other societies, sexual relations between men and women are less durable, sexual mores are less strict, and, not surprisingly, the responsibilities of men to women (as husbands) and to children (as fathers) are not sharply delineated.

It is important to understand that it is possible to rear children successfully under both regimes, although the ways in which it is done are necessarily different. In the bonded-pair arrangement, children are most

likely to be reared by their biological parents in the context of a relatively narrow kinship network. In the nonbonded arrangement, children typically know their mothers and fathers but are reared by a diverse set of kin (especially peer caretakers), and as a consequence they develop at early ages a wide set of personal relationships not only with parents and full siblings but with half-siblings, aunts, uncles, grandparents, and step relations of all types. Although we speak in terms of society-wide patterns of mating and parenting, in fact, we expect substantial variation within societies. It is interesting to interpret these differing reproductive strategies in the light of the *r* versus *K* dichotomy. The "father-absent" type corresponds to reduced parental care and higher fertility associated with more alloparental care. The "father-present" type corresponds to heightened biparental care and the production of fewer offspring, who are cared for primarily by the biological parents (Draper & Harpending, 1987).

The Process Model of Context, Rearing, Personality, and Reproductive Behavior

What factors condition this variability, and what implications do these two types of mating behavior have for the contexts of rearing, the influences on personality development, and the development of sexual behaviors at adulthood? We are convinced that the challenges of early childhood are fundamental for understanding the behavioral outcomes of people at later developmental stages. We use the concepts of facultative adjustments in response to environmental stimuli to explore individual differences in personality development and their relationship to sexual behaviors. We suggest that these dynamics are part of a complex, developmental program which can exhibit sensitive tracking based on environmental cues.

In our discussion, we separate the mix of environmental influences, maturation, rearing experiences, and personality outcomes into four components of a process model, $A \rightarrow B \rightarrow C \rightarrow D$ (Table 1). In our scheme, A includes macroecological context—environment, technology, food and wealth, institutions of kinship and marriage, B, contexts of rearing—family structure, interactions with caretakers, parental versus nonparental caretakers, C, personality development, and D, reproductive strategies—timing of sexual maturation, initiation of sexual behavior, numbers of sexual partners, numbers of offspring, amount of parental investment. We find that many studies address sections of this

Table 1
Process Model of Personality Development
and Reproductive Style

A	→	B	→	C	→	D
Macroecological environment		Microecological environment		Personality development		Reproductive strategy
Physical environment		Father-presence/absence		Attachment security		Timing of puberty
Technology		Wife-husband relations		Cooperation and aggression		Timing of sexual activity
Economic system		Surrogate caretakers		Self-monitoring		Stability of adult pair bonds
Resources		Parent-child interaction processes				Degree of parental investment
Population density						r- vs K-strategy

conceptual continuum, but that few entirely encompass it from the point of view of individual variability in experience conceived of as serving the ends of individual fitness, *given the context of development*. Indeed, components of our organization will be familiar to many researchers of learning theory (Bandura, 1973) or cross-cultural psychology, with its emphasis on functional interrelationships among environment, social structure, child rearing, and outcomes in personality or adult social roles (Barry, Bacon, & Child, 1957, Barry, Child, & Bacon, 1959, Whiting & Whiting, 1975b). Our presentation is novel in that it emphasizes how individual variability in response to differently experienced settings (B) can have fitness consequences for the individual, particularly in those stages of life concerned with courtship, mating, and parenting. Attempts to link up (A) macroecological context, (B) rearing context, and (D) reproductive strategy have been made in a recent series of articles (Draper, 1989, Draper & Harpending, 1982, 1987, 1988). Notably missing from these analyses is an attempt to specify the psychological mechanisms and processes that intervene as transducers between the more exterior, contextual elements of early experience and the outcomes in adult reproductive behavior. As yet there has been no serious attempt to open up the black box that is the individual's unique experience or to suggest how experiential factors produce variability in personality characteristics leading to individual differences in reproductive behavior. Later, we consider what is known about the antecedents

of psychological processes important in early childhood and how these processes may be related to reproductive behavior

We propose that varied macroecological contexts promote specific rearing experiences, and that these in turn foster particular patterns of psychological development, all of which serve the more distal biological function of shaping reproductive behavior, including mate attraction and selection, procreation, and parental care. Indeed, an explicit assumption is that rearing practices and derivative personality development, shaped as they are by macroecological circumstances, are strategic to reproductive fitness. Draper and Harpending's ideas regarding father-absence and reproductive behavior that link together A, B, and D and are considered later in this article set the stage for consideration of psychological processes (C) which may mediate the relation between rearing experiences (B) and processes of mating and parenting (D). We review Bowlby's (1969) attachment theory and recent research related to it in order to make the case that it is via expectations about self, others, and interpersonal relationships that rearing experiences come to influence reproductive behavior. We briefly consider evidence consistent with this line of reasoning and, finally, we reconsider recent research on self-monitoring (Gangestad & Snyder, 1985a, Snyder, Simpson, & Gangestad, 1986) ¹

Father-Absence

In some father-present societies, children are reared by both the mother and father, and fathers play critical roles in the economic support of women and their dependent children. In father-absent societies, mothers carry the major responsibility for feeding and rearing children. Draper and Harpending (1982) hypothesized that the extent to which adult males contribute directly to the rearing of children is determined by environmental and technological features which impose differing requirements on the contribution of male labor for the survival of offspring. When resources are scarce or scattered, male labor is essential for survival and men and women will form pair bonds. Under different ecological conditions, when women can support themselves with little or no direct input from men, a mating system based on less-bonded relations and multiple sexual partners develops. (See Lancaster and Lancaster, 1987, for an allied but different interpretation.)

¹ These authors build on earlier research by Miller (1959), Whiting (1965), Whiting, Kluckhohn, and Anthony (1958), and Whiting and Whiting (1975a)

Draper and Harpending (1982) based their analysis on learning that took place during an early sensitive period and shaped behavior during adolescence. Specifically, they pointed out that patterns of sexual behavior covary with the two rearing conditions (father present and absent). Adolescents and young adults who are the products of father-absence show early sexuality, a rather antagonistic, deprecating attitude toward members of the opposite sex, and a lack of interest in developing a durable, bonded relationship with a mate. Father-absent boys also exhibit more hypermasculine behavior, aggressive acting out, excessive boasting, and risk-taking behavior (Miller, 1959, Rainwater, 1966, Rohrer & Edmunson, 1960, Whiting, 1965), all of which would be appropriate in a courtship arena in which girls and women evaluate men by current appearance and status in the male hierarchy rather than by such traits as steadfastness or the ability to support a woman and children.

Adolescents reared under father-present conditions evince a contrasting pattern of delayed sexual experience, more positive attitudes toward the opposite sex, and greater interest in developing a stable pair relationship (Hetherington, 1972). Draper and Harpending (1982) suggested that the diversity of outcomes of father-absence made sense in the framework of a sensitive period for acquiring reproductive strategies. They argued that individual and group differences in mating and parenting behaviors were influenced by the presence or absence in early childhood of an adult male recognized by the child as directly supporting the child and its mother. The mother's pair-bond status, in this theory, is selected to act as a developmental switch for the child. In this way the individual can "choose" or begin to track a reproductive style appropriate to the adult social environment into which he or she is born. This model assumes that reproductive strategies are ultimately tuned to both physical conditions (such as the availability of food and shelter) and social conditions (such as the reproductive strategies of other individuals of both sexes). Hard-working males with stable unions can be expected to father more surviving young in an environment in which resources are scarce or in which there is a clear payoff for male labor. The assumption is that under these conditions women who try to parent without the help of a mate either lose their children or have reduced fitness relative to women whose mates cooperate. On the other hand, in an environment of relatively abundant resources, such as the modern welfare state, or in the context of a technology in which the importance of male labor is reduced, as in horticultural economies that rely principally on female labor, the survival of women and offspring is less

contingent upon the work men contribute to their support (Rainwater, 1966) The assumption is that men, like mammalian males in general, should take valuable time and effort away from mating only when there are payoffs in reproductive success In this example, characteristics of the physical environment (A), mediated by the social environment (B), drive reproductive style (D)

The Draper-Harpending framework presumes a sociocultural process of learning whereby father-presence or father-absence triggers the acquisition of one of two alternative sets of reproductive behavior What remain unclear are the psychological processes that transform early experience into later mating and parenting practices, that is, the nature of the arrow connecting B with C in the model under consideration Recent work in attachment theory may help fill the void Below, we consider $B \rightarrow C \rightarrow D$ linkages, having already considered $A \rightarrow B \rightarrow D$

Early Rearing, Personality Development, and Reproductive Strategy

Over the past decade attachment theory, as first articulated by Bowlby (1969) and subsequently elaborated by Ainsworth (1973, Ainsworth, Blehar, Walters, & Wall, 1978), Sroufe and Fleeson (1988), and Main (in Main, Kaplan, & Cassidy, 1985), has achieved prominence in developmental psychology At the core of attachment theory and research is a concern for the role that early social experiences play in the development of affectively charged cognitions and perceptions and the influence that they exert on interpersonal behavior through life Particularly because of the significance accorded close relationships both during and after childhood, we regard attachment theory as relevant to the study of mating, childbearing, and child rearing These reproductive considerations clearly underscore the potential evolutionary implications of the theory Whereas Bowlby (1969) emphasized the survival value of the infant's behavioral repertoire for facilitating maternal protection, we stress the role that secure and insecure attachment can play in shaping development and thus future reproductive functioning

Attachment theory and research Attachment theory holds that the day-to-day interactions which infants have with their principal caregivers influence how young children relate to and are related to by others In particular, the theory asserts that by the end of the first year children have developed what Bowlby (1969, 1973) called "internal working

models" of self, others, and relationships, which influence attention to and encoding of social experiences and thus inform subsequent relationships with others

Given the organism's active role in shaping its own experiences, the assumption is that developmental trajectories, once established, are self-sustaining. If environments change along with interpersonal experience, then so should our expectations regarding self, others, and relationships. Attachment theory, in other words, is an interpersonal and dynamic theory of personality development.

There is evidence for two propositions central to attachment theory, one having to do with the child-rearing origins of individual differences in attachment security and the other with the developmental consequences of secure and insecure attachments. Secure infant-mother attachment bonds have been found to develop when infants are sensitively and promptly cared for by a responsive mother (Ainsworth et al., 1978, Belsky, Rovine, & Taylor, 1984, Sroufe, 1983). Insecure attachments develop when mothers are intrusive and overstimulating or disengaged and unresponsive (Belsky et al., 1984, Isabella, Belsky, & von Eye, 1989, Smith & Pedersen, 1988). Further evidence documenting the role of child-rearing experiences in the development of individual differences in attachment security comes from studies showing that abused and neglected children are at high risk for developing insecure attachments (for review see Youngblade & Belsky, 1989, in press), as are children of depressed mothers (Radke-Yarrow, Cummings, Kuczyski, & Chapman, 1985) and those children or their mothers with histories of excessive alcohol consumption (O'Connor, Sigman, & Brill, 1987).

Insecure attachment bonds in infancy forecast low levels of empathy, compliance, cooperation, and self-control and high levels of negative affect during the toddler, preschool, and early elementary school years (e.g., LaFrennière & Sroufe, 1985, Lewis, Feiring, McGuffog, & Jaskir, 1984, Londerville & Main, 1981). Clearly, attachment security is systematically related to children's earliest child-rearing experiences and to their subsequent psychological, behavioral, and personality development.

From attachment security to reproductive behavior Conceivably, variation in attachment security orients children to regard close relationships as enduring, trusting, and mutually rewarding or transient, untrustworthy, and opportunistic and, as a result, has important implications for future mating and child-rearing behavior. Children with secure de-

velopmental histories may be more disposed to pursue a K- than an r- reproductive strategy, because they anticipate enduring pair bonds and have the interpersonal skills and psychological resources to sustain them. Children with insecure histories, in contrast, may be more inclined to adopt an r-strategy, because of their short-term and opportunistically oriented way of relating to others—a way of relating, it should be noted, which only confirms their expectations that others cannot be counted on over the long term.

It is conceivable that child-rearing patterns which induce secure or insecure internal working models in the child serve the strategic function of preparing the child to successfully cope with (and reproduce) the interpersonal world which the parent (unconsciously) expects the child to encounter in the future. Thus, parents who are themselves mistrustful of close interpersonal bonds—most likely with good reason—rear their children to function effectively in an interpersonal world marked by short-term, opportunistic relationships. Parents with secure working models, in contrast, foster in their offspring interpersonal styles which will promote relationship and reproductive success in a world in which mutually rewarding, enduring relationships are the order of the day. Consistent with this are confirmed findings that the security of children's attachments is concordant with their mothers' internal working models, that is, that secure mothers are disproportionately likely to rear secure offspring and insecure mothers disproportionately likely to rear insecure offspring (Grossman, Fremmer-Bombik, Rudolph, & Grossman, 1988, Main et al., 1985).

Ideas regarding the interrelation of environment, rearing, and psychological development are found in classical developmental theory and in cross-cultural psychology (Barry et al., 1957, Whiting & Whiting, 1975a, 1975b). In this article we extend this paradigm by proposing that chains of influence linking socioecological context, rearing conditions, and personality development serve reproductive functions. To reiterate, we hypothesize that contexts and their correlated rearing strategies carry with them implicit if not explicit messages about the probability that relationships will be enduring and that paternal investment in offspring can be anticipated. As a result, children come to believe that their social world fosters relationships that are long-term and reciprocally rewarding, on the one hand, or transient and opportunistic on the other. Thus, different styles of mating behavior can be understood as outcomes of prior contexts, rearing, and personality development.

Unfortunately, we know of no evidence which can be brought directly

to bear on these speculative propositions. The problem, of course, is the absence of longitudinal studies of development that use the mix of contextual and psychological assessments necessary to test this model. Moreover, it is important to recognize that while the processes discussed are considered to have evolved, it may not be possible, in this day and age of convenient abortion, cohabitation, and divorce, to test predictions regarding number of offspring and the quality of their rearing. Nevertheless, one could still examine behavior patterns that might reflect the legacy of evolved mechanisms. One might predict, for example, that children with insecure attachment histories will initiate sexual activity earlier and be less "responsible" in the use of birth control, as well as less capable of sustaining enduring friendships, particularly heterosexual ones.

Despite the absence of strong evidence to substantiate the ideas linking context, rearing, and personality development with reproductive strategy, there are two sets of provocative findings that provide indirect support for them. The first links context, particularly that of kinship, to rearing and pertains to the characteristics of families most likely to utilize extensive nonmaternal care in the first year of life, the second links rearing experience, particularly the quality of family relationships, with reproductive functioning and pertains to the familial determinants of early pubertal maturation.

Infant day care Infants exposed to extensive nonmaternal care in their first year are at elevated risk of developing insecure attachment relationships, and such early experience is also related to subsequent aggression and noncompliance in the toddler, preschool, and early elementary school years (for review see Belsky, 1988). Considering these findings from a sociobiological perspective, Belsky wondered whether evolved psychological processes may underlie the readiness of parents to turn over care of children to surrogate caretakers. He reasoned that parents with few siblings and collateral descendants (nieces and nephews) would be reluctant to release children to the care of others, whereas the opposite should hold for parents with many collateral kin. In other words, the context of kinship was hypothesized to affect parental investment.

Data on parents' brothers, sisters, nieces, and nephews supported this hypothesis, though only with respect to the father's kin. Children who received extensive day care in their first year of life averaged significantly more paternal uncles, aunts, and first cousins than did chil-

dren who had part-time or no day care. Further, children who were not placed in extensive day care during their first year were significantly more likely to have been the firstborn grandchild of the father's parents. Importantly, these findings did not appear to be related to social class.

Thus, via mechanisms which are by no means clear, it turned out that children who were hypothesized to be more "valuable" from a fitness standpoint were significantly less likely to be placed in circumstances associated with the development of insecure infant-parent attachment and subsequent aggression and noncompliance.

Timing of puberty Two recent studies of family relations, long thought to influence personality development, show an effect of family relations on the timing of puberty. In the first, Surbey's (in press) study of father-absence and the timing of menarche, daughters from divorced households were found to reach puberty a full 6 months earlier, on average, than age mates from maritally intact families. What makes these findings so noteworthy with regard to the study of individual differences in personality is independent evidence that divorce is also associated with psychological development and life-course experiences. In particular, there are repeated indications that daughters of divorce begin sex at earlier ages and are more heterosexually oriented than daughters from maritally intact families (Hetherington, 1972, Kinnaird & Gerrard, 1986), and that children of divorce tend to marry earlier, have children sooner, and end their marriages more readily (Keith & Finlay, 1988, McLanahan & Booth, in press, McLanahan & Bumpuss, 1988). Divorce, especially when it coincides with high levels of family conflict (particularly between spouses and ex-spouses), is also associated with impulsivity, aggression, and antisocial behavior (Allison & Furstenberg, 1989, Hetherington, Cox, & Cox, 1982, Petersen & Zill, 1986). It is not difficult to translate such behavioral correlates of divorce into notions of insecurity, opportunistic styles of relating to others, and an r- rather than K- reproductive strategy. In sum, these findings are consistent with the notion that family processes influence relationship expectations, interpersonal attitudes, and values and thus mating and childrearing behavior in a manner congruent with our model of contextual influences on personality development in the service of reproductive goals.

There are further findings from a prospective, longitudinal study of the transition to adolescence. Relying upon a large sample of preadolescents drawn from the Madison, Wisconsin, public school system,

Steinberg (1986, 1988) discovered that higher levels of parent-child (especially mother-child) conflict, as well as lower levels of parent-child cohesion, anticipated earlier maturation. It is noteworthy that family conflict, in both maritally intact and divorced families, figures importantly in the etiology of aggression and other seemingly opportunistic styles of interpersonal behavior (Emery, 1988).

Of course, what we do not know from the studies of Surbey, Steinberg, and others is whether the daughters of divorce or the children whose relationships with their parents are more conflicted and less close have histories of insecure attachment, though it does not appear unreasonable. We also do not know whether the early maturing children are more active sexually, as we would expect if relationship stress in the family and earlier maturation promotes more of an *r*- than a *K*-reproductive strategy. The data on the developmental consequences of divorce and family conflict more generally are consistent with the notion that such family events and processes set the stage for the development of behavioral and personality processes that reflect an insecure rather than a secure strategy of relating to others and that these family experiences also relate to biological processes, particularly the timing of puberty, in a manner consistent with notions of *r*- versus *K*-strategies of reproduction.

CONCLUSION

There are at least two standards that any theory must meet. First it must raise new questions, and second, it must lead to new discoveries. With regard to both concerns, our analysis of context, childrearing, personality development, and reproductive behavior led us to examine three classical issues in psychological development from new viewpoints: father-absence, pubertal timing, and infant day care. In each case, evolutionary considerations led us to treat as dependent variables constructs that had a history in psychology as independent variables used to explain individual differences in psychological functioning and personality. Rather than ask what the psychological consequences of early (and late) maturation and infant day care are, as many have asked for a long time now, we ask what prior contexts and structures may determine the timing of maturity and parental decisions to use infant day care. Rather than look at father-absence as a disadvantage with primarily negative, if not pathological, outcomes, it is possible to see it simply as one element in a large system of behaviors that mem-

bers of our species can be expected to show under specialized sets of circumstances

The field is open for further testing of ideas like those we have proposed. Consider, for example, the implications of the ideas advanced in this article for the personality construct "self-monitoring." Research by Snyder et al. (1986) demonstrates that high self-monitoring individuals are particularly responsive to social and interpersonal cues and skilled at hiding their own preferences and feelings, and that they tend to adopt an uncommitted orientation toward their dating partners and express themselves as willing to experiment with new partners on a short-term basis. That is, their dating relationships are short and include many partners.

People low in self-monitoring, in contrast, have more difficulty in masking their own underlying attitudes and dispositions and so are less facile in social situations calling for deceit and manipulation. In their sexual behaviors, low self-monitoring individuals form more committed and intimate relationships with partners and are less interested in one-night stands outside a standing relationship. Their dating relationships last longer and include fewer people (Gangestad & Snyder, 1985b, Snyder et al., 1986).

While Snyder et al. (1986) favor a genetic basis for these predispositions, an alternate interpretation suggests itself. The self-monitoring complex of behaviors may well be the outcome not of genetically determined individual differences but of genetically evolved facultative responsiveness to rearing environments that foster insecure and especially insecure-avoidant bonds from which one learns to be opportunistic in a relationship. We suggest that early conditioning and the later development of the high self-monitoring profile facilitates early, relatively indiscriminating sexual contacts and a stronger commitment of energy to mating and remaining attractive to the opposite sex. This strategy necessarily implies relatively reduced commitment to parental care. Children born to parents with this sexual orientation are unlikely to have full siblings but instead to have half-siblings and early rearing with more frequent changes of household personnel and a probability of inconsistent and insensitive responses from adults. It is important to understand that the tendency of high self-monitoring individuals to be relatively uncommitted in their personal relationships (not only sexual ones) is adaptive in the context of this social milieu.

From our perspective, low self-monitoring reflects a style oriented to the long term, in which establishment of enduring bonds, rather

than short-term adaptation, is the goal. The antecedents of low self-monitoring may be secure attachments, for example, a more stable parental dyad, that enable a child to trust that he or she will be liked and welcomed. Children who are the products of this type of rearing will seek out more permanent mating relationships, expend less effort in the pursuit of members of the opposite sex, and consequently invest more heavily in each offspring. On balance, their children will have a higher probability of experiencing consistent, sensitive care from their own biological parents and will not have the frequent changes of household personnel associated with instability in the relationships of people in the adult generation.

In this article, we have woven together many diverse strands of theory and empirical findings and have proposed a way of thinking about context, early rearing, personality development, sexual development, and mating. We view personality as a critical link between early rearing and later reproductive behaviors. We agree that it is by no means clear whether the psychological processes we describe are genetic or the result of facultative adjustments, both are possible. However, we favor an explanation in terms of facultative adjustment to environmental effects, mainly on the grounds that the environments into which people are born are highly variable from one generation to the next but always require the individual to undergo a long learning process in order to perform competently.

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