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PATHWAYS THROUGH ADOLESCENCE

Individual Development in Relation to Social Contexts

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Developmental Paths in Adolescence: Commentary

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The chapters by Huizinga (chap. 2), Cairns, Leung, and Cairns (chap. 3), and Caspi (chap. 4) raise several issues integral to an understanding of developmental pathways in adolescence. These issues include the choice of metaphors for describing developmental paths, the impact of turning points on pathways, mechanisms contributing to continuity (or discontinuity) in behavior, and the role of the social context in shaping pathways. Each of these issues is discussed in turn.

MODELS AND METAPHORS

The first issue involves the conceptualization of an individual's journey through adolescence and the selection of metaphors for describing it. Two common metaphors in the developmental literature are *pathway* and *trajectory*. Although similar in some respects, these terms reflect different assumptions about development. Pathway typically refers to a course that is already laid out, which the individual simply follows. Thus, this metaphor emphasizes the role of forces outside the person in setting that person's developmental course. Trajectory refers to the curve of a projectile in flight, which implies momentum and movement in a specified direction. Thus, this metaphor connotes a more active role for the organism; it also implies that development follows a fairly predictable course.

The choice of metaphors depends on one's philosophical stance (mechanistic or organismic) and, to some extent, one's disciplinary perspective. For example, sociologists Hogan and Astone (1986) argued that the term *trajectory* is innappropriate for describing the transition to adulthood because it "implies a greater amount of individual initiative than actually occurs" (p. 110). According to these authors, institutional arrangements set the expected developmental course concerning the sequence of adult role transitions, although individuals may differ in the timing and eventual success of these transitions. Hogan and Astone prefer the term *pathway*, which they defined as "a course laid out for people, strongly encouraging them to take a particular route to get from one place to another" (p. 110). Of course, other authors might reject the term *pathway* so defined because it leaves too little room for individual initiative.

It is also possible that different metaphors are appropriate for describing distinct developmental phenomena. Let us take three cases: a specific behavior, the quality of adaptation exhibited by an individual, and the individual's life course. A specific behavior, such as temper tantrums, may show a normative developmental pattern—being prevalent at certain phases of life and rare at others. Such a pattern may conform to a curve, as implied by the term *trajectory*. The term *trajectory* may also be appropriate for describing the quality of an individual's adaptation over time, especially if one presumes some degree of continuity in adaptation. That is, individuals on a positive trajectory should show a stable or increasing level of adaptation over a period of time, whereas those on a negative trajectory would be expected to show a pattern of diminishing adjustment (at least relative to peers).

Trajectory may be troublesome, however, when it is applied to the individual life course. If we think of the life course as encompassing twists and turns at critical decision points, many of which are unforeseeable (e.g., Bandura, 1982; Crockett & Crouter, chap. 1, this volume; Kagan, Kearsley, & Zelazo, 1978), trajectory seems inadequate for describing this potentially erratic pattern. If so, we must resort to the term *path* or *pathway* to describe the individual's developmental course through adolescence and beyond. The most appropriate understanding of *path*, however, is not the typical one discussed previously, but the less common usage: "a route along which something moves" (Random House, 1973, p. 973). This definition allows for an active organism with some influence over its direction and progress.

Once developmental paths are conceptualized, decisions regarding methodological approach remain. To some extent, methodological solutions depend on the resolution of the conceptual issues just discussed. For example, the use of variable-level versus person-centered data-analytic techniques depends, in part, on whether the focus is a particular type of behavior or a constellation of attitudinal and behavioral variables believed to characterize personality. Magnusson (1990) suggested that person-centered approaches

are preferable for examining the development of individuals because "it is individuals who are stable [or unstable] over time, not variables" (p. 210).

Huizinga (chap. 2, this volume) provides one example of a person-centered approach to charting developmental pathways. Focusing on delinquent behavior, he defines a *pathway* as "a particular sequence of behaviors traversed by some group of individuals that is different from the sequences of behaviors followed by others." He assigns adolescents to distinct delinquency "types" based on their initial level of delinquency, and then traces transitions from each "type" to other types over the following 2-year period. Interestingly, he finds little regularity in adolescents' transitions from one delinquent status to another, although some progressions are more common than others. The factors influencing the likelihood of particular transitions are a bit clearer: Both an individual's initial delinquency status and contextual variables (e.g., contact with deviant peers) appear to affect transitions to and maintenance of aggressive types of delinquency. By expanding the longitudinal time frame to include additional data points, this method could be used to trace delinquency progressions over the entire adolescent period.

The lack of consistent patterns, however, presents an interesting problem. Although a more extended study period could yield more clear-cut patterns, this appears unlikely given the present level of inconsistency. It may be that initial delinquency status and age are insufficient for identifying groups with distinct developmental pathways. Other person or contextual variables may be needed to identify developmentally meaningful categories, or types. For example, Magnusson (1988) found that boys who were both hyperactive and aggressive in early adolescence had increased rates of criminality and alcohol abuse in young adulthood. Similarly, Caspi, Bem, and Elder (1989) found that the adult life course was influenced by personality characteristics such as shyness, ill-temperedness, and dependency. Thus, particular configurations of salient behavioral and personality characteristics may result in distinctive developmental patterns. If so, typologies based on such potent individual and contextual characteristics may prove more fruitful for identifying distinctive delinquency sequences than those focusing primarily on prior delinquent status.

THE ROLE OF TURNING POINTS

The second issue concerns the importance of turning points in the construction of developmental paths. Kagan's metaphor of a *tree* (Kagan et al., 1978) suggests that development encompasses numerous decision points where the person can select from among several alternative courses of action, each leading in a different direction. To the extent that these decision points can be predicted, they provide us with a focus of study—a window on devel-

opment where we can begin to examine the mechanisms that operate to maintain or redirect individuals' paths. A focus on turning points leads to three questions: What conditions precipitate a turning point? What leads to the selection of one possible alternative over another? What are the implications of choosing one alternative over another?

The first question concerns circumstances that may set the stage for a turning point. Ecological transitions involving entry into new settings (e.g., entering a new school) or major changes in existing settings (e.g., family changes after a divorce) represent one type of potential turning point. Entry into a new setting means exposure to a new set of opportunities and pressures that may either reinforce or redirect initial behavioral dispositions. In addition, developmental changes, such as puberty or the advent of abstract reasoning, entail changes in self-perceptions and social treatment, creating an opportunity for novel person-environment interactions. Finally, entry into new social roles or statuses can initiate a turning point because these transitions involve new settings and new behavioral expectations.

Importantly, many of these potentially significant changes in young people's lives are predictable. We know, for example, that all normal children go through puberty, and we know that visual evidence of this transformation is likely to appear early in the second decade of life. Normative institutional transitions such as the move into secondary school are especially predictable. Even normative role transitions such as marriage can be anticipated for a majority of the population, although timing for an individual would be more difficult to predict. Where such changes are predictable, they provide an opportunity for the prospective study of turning points and their sequelae. Key changes in early adolescence might include puberty, school transitions, and non-normative events such as family structure changes, death or illness, and geographic relocation. Key changes in late adolescence would include moving out of the family of origin, entering college or the work force, marriage, and non-normative life events such as serious illness or unemployment. Longitudinal research could address the significance of these turning points not only for short-term behavioral change, but for the construction of life paths. Of course, not all non-normative events would be captured prospectively, and chance encounters might be missed. But periodic assessment throughout the adolescent period could catch many decision points, whose meaning and significance might only later be determined.

The second question is what leads an adolescent to adopt one possible direction over another at a particular turning point. One model of this process comes from Bandura's (1982) discussion of chance encounters. According to Bandura, such encounters are not always entirely random. Often some individual characteristic leads a person to be at a particular place at the moment when the "chance" meeting occurs. Thus, although the encounter was not anticipated, characteristics of the person led to the selection of a

particular setting, making the encounter possible. By extension, individual characteristics are likely to play a role in selecting one alternative course over another at a particular turning point. For example, academically gifted adolescents are more likely to find school rewarding and are more likely to receive encouragement. Consequently, such students should be more likely to choose postsecondary education when the time for educational decisions arrives. Bronfenbrenner (1989) has referred to such individual characteristics as “developmentally instigative.” Other social agents may also play a role, such as when parents choose schools for their children or when peers encourage particular forms of behavior. Finally, the broader social context plays a role because it constrains the alternatives available to the person at a given juncture in development.

The third issue concerns the consequences of choosing one possible alternative over another. When a choice of different settings is available, selecting one over another implies exposure to some opportunities and social influences to the exclusion of others. Caspi (chap. 4, this volume) provides one example of this. His analysis indicates that parents' choice of a coed or single-sex secondary school affects girls' exposure to delinquent behavior. Because boys are more involved in norm-breaking behaviors than are girls, girls in coed schools are exposed to a wider range of behaviors and to more lax norms than are those in single-sex schools. Thus, the choice of school setting has important implications for subsequent socialization.

Predicting the impact of entry into one of several alternative settings, however, involves more than understanding the general features of that setting. Caspi finds that, although girls in coed schools presumably all had the opportunity for contact with delinquent patterns of behavior, reported exposure to these patterns depended on girls' pubertal timing: Greater exposure to delinquency was concentrated among early-maturing girls. Similarly, only early-maturing girls in coed schools engaged in more delinquent behavior than their counterparts in single-sex schools. Thus, greater involvement in delinquency required both a facilitating environment and personal characteristics that increased exposure (or vulnerability) to delinquent elements. Similarly, Bandura (1982) argued that both personal and environmental characteristics affect the impact of a chance encounter (and, by extension, entry into any new setting) on an individual's subsequent life course.

Even knowing the features of both person and environment, however, may not be enough to elucidate the processes shaping an individual's response to a particular setting. For example, in Caspi's study, it would be useful to know whether early-maturing girls in coed schools were responding to greater exposure to boys in general, or to delinquent boys in particular. That is, we need to identify the *effective* social environment for these girls, not just features of the general social context. Moreover, if the key turns out to be greater contact with delinquent boys, we need to ask why this occurred:

Do delinquent boys preferentially seek the company of early-maturing girls, or are early maturers more likely than other girls to respond favorably to delinquent boys' overtures? Perhaps early-maturing girls actively seek contact with delinquent boys. Each of these possibilities points to selection processes that could lead early-maturing girls into greater contact with delinquent boys. In addition, early-maturing girls may be more influenced by delinquent models than are later maturers, even with equal exposure. Or, delinquent boys may differentially encourage early-maturing and late-maturing girls to participate in misconduct. Finally, it is possible that Caspi's early-maturing girls already had greater tendencies toward misconduct; being in a coed school simply gave them greater license to express these tendencies. In summary, to understand the impact of a new setting on adolescent behavior, we need to determine the effective social environment for a particular group of individuals, and we need to pinpoint the specific social processes influencing behavior within that social niche.

Determining the consequences of entering one setting rather than another is complicated by the selection processes discussed earlier. In many cases, the individual characteristics and social forces present at a decision point push adolescents in directions that are in some way related to their past behavior. For example, adolescents choose peer groups compatible with their own behavioral tendencies (e.g., Cairns et al., chap. 3, this volume), or parents may choose schools to enhance their child's preexisting talents or perhaps to deter former patterns of misbehavior (e.g., by sending a child to military school). In such cases, the choice occurs in response to characteristics of the adolescent, or, alternatively, to characteristics of the parents, which are, in turn, correlated with characteristics of the adolescent (Scarr & McCartney, 1983). Such selection processes may create "matches" between the person and the new context, making it difficult to separate setting effects from person effects.

MECHANISMS OF CONTINUITY

Turning points presumably offer an opportunity for changes in direction. This leads to a distinct question: What processes help maintain behavioral patterns over time, despite the interposition of turning points? One answer involves the selection processes that operate at decision points. As suggested earlier, adolescents are likely to select settings compatible with their initial dispositions, with the result that personal characteristics and socialization processes in the setting conspire to support behavioral continuity. Cairns et al. provide further clues to these processes.

Cairns et al. discuss the maintenance of antisocial behavior in the school setting. They note that this type of behavior shows an enduring presence

within classrooms, despite considerable fluidity in peer-group membership. The reason for this continuity appears to be that peer groups are formed and re-formed around certain behavioral themes, including aggressiveness and deviance. Aggressive children cluster together through the process of selection: They may be excluded from prosocial groups (passive selection) and attracted to aggressive groups (active selection). Membership in the aggressive group presumably reinforces initial aggressive dispositions. Importantly, Cairns et al. note that, although membership in most groups changes considerably from year to year, as children change schools or classes, deviant adolescents tend to reshuffle themselves into new groups of deviant peers. By extension, an aggressive adolescent who moves to another school experiences a change in school environment, but the impact of that change may be trivial if he or she gravitates toward an aggressive peer group in the new location.

In summary, the tendency to end up in settings that support one's initial proclivities is likely to foster continuity in aggressive behavior. In addition, a reliance on aggressive social exchanges within and outside the group may limit opportunities for learning prosocial skills and may reinforce expectations of hostile treatment, which should, in turn, increase the probability of recurrent aggressive behavior. Caspi et al. (1989) labeled these processes *cumulative* and *interactional* continuity, respectively.

ROLE OF SOCIAL CONTEXTS

The preceding discussion suggests several points about the influence of social contexts on developmental pathways. Settings influence ongoing behavior in several ways. Apart from exposing adolescents to novel forms of behavior, which may then be imitated and adopted, settings provide an arena for the expression of preexisting behavioral dispositions. A given setting may be favorable to certain kinds of behavior and less favorable to others. Depending on the match between person and setting, a setting may either facilitate or limit the adolescent's initial behavioral tendencies (see Eccles et al., 1993). A facilitating environment does not necessarily mean that the initial behavioral tendency is rewarded; tolerance (i.e., lack of punishment) may be sufficient. Thus, as Caspi (chap. 4, this volume) suggests, coed schools may be associated with greater continuity in girls' misconduct because coed settings are less restrictive than female only settings, and thus allow delinquent tendencies to be maintained.

In all important social settings, it is important to identify the effective social context for the adolescents under study and the processes operating within it. For example, secondary schools have a number of possible peer-group niches that may reflect distinct norms and pressures (Brown & Huang, chap. 9, this volume; Clasen & Brown, 1985). Thus, the effective social context may differ

for adolescents who associate with different peer groups, despite the fact that they are all embedded in the larger school setting. Moreover, school authorities may respond differentially to distinct peer groups, reinforcing and magnifying their differences (Eckert, 1989, chap. 10, this volume). An analogous process occurs in families when siblings exploit distinct niches and experience differential socialization (Dunn & Plomin, 1990).

The adolescent's capacity for selecting environments (e.g., choosing one setting over another, or choosing a particular social niche within a larger setting) suggests that the effective social environment often reflects characteristics of the adolescent (Scarr & McCartney, 1983). At the same time, individuals with distinct characteristics may have differential opportunity for active "niche picking"—gender, race, or social class may limit the social niches available within a setting, or may restrict the adolescent's freedom of movement among them. The opportunity for active niche picking may also be greater in some settings than in others. Niche picking is likely to be especially apparent in peer networks because peer associations involve a large element of choice. It may be less prominent in other contexts where the range of "niches" is more restricted and exit into alternative settings is barred. For example, some schools and neighborhoods may offer a fairly limited array of social niches from which to choose.

Differential opportunity for selecting compatible settings has implications for developmental continuity. Normally, we would expect active "niche picking" to result in positive correlations between person and environment, which would tend to foster behavioral continuity. However, niche picking may lead to changes in behavior (rather than continuity) if the available niches reflect norms at odds with the adolescent's initial dispositions. Thus, to understand the developmental consequences of "niche picking," it is important to examine the range of alternatives available within a given setting, as well as the "match" between those alternatives and characteristics of the adolescent.

CONCLUSIONS

Much remains to be done to illuminate the processes shaping adolescents' developmental paths. Influences affecting adolescents' day-to-day behavior, as well as their decisions at specific turning points, need to be elucidated. The reciprocal influences operating between adolescent and environment, and the fact that selection processes (both passive and active) are likely to increase the correlation between individual and environmental characteristics, further complicate the task of disentangling causal processes.

Furthermore, understanding adolescents' developmental pathways requires more than identifying the dynamic processes in operation at key

turning points and in the settings the person enters subsequently. It requires examining the chain of events, or “series of contingencies” (Rutter, 1989), that build on each other in the developmental process, producing distinctive life paths. For example, attending poor schools appears to affect later job success indirectly—by leading to poor school attendance, which, in turn, increases the probability of early school leaving and a failure to acquire key academic credentials. The lack of academic credentials then increases the probability of erratic employment and of working in unskilled jobs (Gray, Smith, & Rutter, 1980). Such findings suggest that, in order to understand developmental pathways, the sequence of “key decisions” needs to be identified for groups of individuals, and the contingencies operating between them need to be elucidated. Although it may be useful to focus initially on small segments of time, examining the processes operating at particular turning points, ultimately the task is to place these smaller segments into the broader context of the adolescents’ emerging life course.

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