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How Marginal Deviations Sometimes Grow Into Serious Aggression

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Abstract

We offer a theory of marginal deviations that articulates the processes through which initial behavior that is only slightly deviant from the norm gets transformed into more serious antisocial outcomes. We present evidence that, of the one third of the population that is marginally deviant, about one fourth (or 8% of the total population) becomes seriously deviant over time. Hypothesized factors in this transformation involve the child actor, peer observer-judges, and social transactions between them in processes that derive from self-fulfilling prophecies and dynamic systems theory. Hypotheses and studies are proposed to address the circumstances and processes that determine whether a marginal deviation will be bought back to the norm (through assimilation and attenuation) or accelerated to severe deviance (through accommodation and amplification).

Keywords

aggression; marginal deviation; child psychopathology

The early-starter model of aggressive behavior (Moffitt, 1993) posits a group of children (about 5%-7% of the population) who display aggressive behavior early in childhood and persist in their aggression throughout the life course. Acknowledging that this model does not account for all individual differences in aggressive behavior, Moffitt has posited a second group of youth who display aggression only during the limited era of adolescence. In this article, we assert that still another path to serious aggression may hold as well, one in which an initially marginally deviant child grows into a more seriously aggressive youth at a later time point. We argue that current biopsychosocial theories of aggressive development (Dodge & Pettit, 2003; Granic & Patterson, 2006) need to be enriched with an understanding of dynamic social-interactional processes that may propel a marginally deviant child into a seriously aggressive adolescent. We articulate some aspects of these processes and propose future studies to test hypotheses.

We start by noting that one quarter of initially marginally deviant children grow into more seriously aggressive youth over time. We argue that when a child exhibits behavior that is only marginally anomalous with respect to normative expectations, psychological and interpersonal challenges ensue for the child and his or her peers, especially when a child's marginal deviations in one behavioral domain are coupled with marginal deviations in other significant

domains. Finally, we postulate that these challenges, and the behavioral effects that ensue, aggregate over time through dynamic, nonlinear processes leading to more pronounced and severe behavioral problems. We do not conceive marginal deviations as a form of main effect leading inevitably to serious behavioral problems. Rather, we hypothesize that behavioral marginal deviations interact with social processes: Marginal deviations may exert no ill effects on aggressive development in a social environment that is tolerant of one's anomalies without overinterpreting those anomalies.

The article offers a conceptual framework that builds on previous accounts of marginal deviation (Caprara, 1992; Caprara, Dodge, Pastorelli, & Zelli, 2006; Caprara & Pastorelli, 1993; Caprara & Zimbardo, 1996). Marginal deviation is the degree of small but reliable difference in behavior between a particular child and a normative baseline, operationalized as a standard score that is greater than 0 but less than 1 *SD* above the norm. Marginal deviations have little unit value, but at some point, a critical mass or just noticeable difference is reached in which the added value of one more functionally equivalent behavioral unit becomes very high. We hypothesize that the relation between the number or diversity of anomalies and their functional impact is nonlinear and accelerating. Our theory adds to general biopsychosocial models of aggressive development by (a) identifying a group of children who are initially marginally deviant but who grow into problem youth, (b) asserting that this growth is based on multiple risk factors that operate in nonlinear ways, and (c) asserting that social-cognitive appraisal processes contribute to this growth.

BEHAVIORAL EVIDENCE OF GROWTH IN AGGRESSION FOR marginally AGGRESSIVE CHILDREN

In a recent investigation (Caprara et al., 2006), separate samples of American elementary school children and Italian middle school students were followed across several consecutive school years to assess their standing on multiple dimensions of behavior and socialization, including aggression, hyperactivity, prosocial behavior, academic difficulties, and peer social acceptance. In both samples, groups of initially marginally aggressive and marginally nonaggressive children were identified as those children who scored either slightly above or slightly below the mean of classmates.

The findings, which replicated across independent samples, supported the general hypothesis that marginal aggression may grow into serious problem behaviors over time, under specific circumstances. A substantial percentage (24%) of marginally aggressive first graders obtained standardized aggression scores greater than 1 at each of the following school years, as compared to only about 9% of the initially marginally nonaggressive first graders. We obtained similar effects when we compared the percentage of marginally aggressive and nonaggressive children who increased their aggression score by at least 1 standard score unit over the school years. Assuming that normal distributions hold, about 34% of a population receives a standard score that is greater than 0 but less than 1 *SD* above the norm. If one fourth of this group later exceeds a threshold of problem behavior, then we can assert that about 8.5% of the population fits a pattern of marginal deviation growing into problem behavior.

Plausible hypotheses to understand this phenomenon of marginal deviation and growth to aggressive behavior problems include the simple hypothesis that some members of the marginally deviant group are inaccurately measured and actually belong in the problem group category. Another hypothesis is simple accumulation of risk factors. We sought to identify risk factors that predict aggressive growth in the marginally deviant group and found that these risk factors exert a larger impact on marginally aggressive than marginally nonaggressive children, suggesting something unique about the status of being a marginally deviant child. Hyperactivity, cognitive difficulties, low social preference, and lack of prosocial behavior each

increased uniquely a child's risk for growth in aggressive behavior, and equivalent levels of these risk factors had greater impact on the development of marginally aggressive than marginally nonaggressive children. Furthermore, the magnitude of risk accelerated in nonlinear ways as the number of risk factors accumulated, but only among marginally aggressive children.

Moreover, these processes operated more readily for certain groups of children than others. Marginally aggressive boys were more readily ensnared in aggressive growth than were marginally aggressive girls. Likewise, in the American sample, African American children who were initially marginally aggressive had a more difficult time shedding this label than did White children. These findings are consistent with stereotypes of the aggressive child as an African American boy and with other studies highlighting the difficulties that African American boys encounter in American culture. Although differences across ethnic groups in the probability of an initial arrest are small, once initially arrested, African American boys are far more likely than White boys and girls to be arrested a second time (Elliott & Ageton, 1980). Once placed into special education classes for serious emotional disturbance, African American boys have a more difficult time than White boys and girls in returning to the regular classroom. These difficulties are captured in a process exacerbating initially small differences between gender and ethnic groups into major differences in outcomes.

MARGINAL DEVIATIONS AND DEVELOPMENTAL TRAJECTORIES OF CONDUCT PROBLEMS

Two notions characterize the current general scientific view on problem behavior and its growth over time. The first underscores the strong cross-time continuity in rank ordering of individual differences as judged by both objective researchers (Moffitt, 1993) and child-peer judges (Coie & Dodge, 1983). The second stresses the theoretical position that this continuity is, for the most part, the outcome of developmental trajectories characterized by little change over time and representing individuals who, with respect to time- or age-specific behavioral norms, either are chronically deviant across time or never manifest behavioral problems or antisocial behavior.

A substantial literature demonstrates empirically the main tenets of both notions (Loeber, 1991; Moffitt, 1993; Nagin & Tremblay, 1999; Patterson, DeBaryshe, & Ramsey, 1989) and acknowledges that the etiology of problem behavior rests on the interplays of multiple levels of influence including biological, psychological, family, community, and peer factors (Sameroff, 1995). In line with these views, habitual, serious, problem behaviors might not only be the feature of a developmental trajectory showing little change over time but also emerge in one's life from the interplay of complex, reciprocal nonlinear processes leading to substantial or dramatic changes in one's behavioral status over time. The evidence of late-onset or adolescent-limited trajectories (Fergusson & Horwood, 1996; Moffitt, 1993; Patterson, 1993; Patterson et al., 1989) speaks to this possibility and often stresses the moderate degree of risk associated with family, peer, and school contexts (Fergusson and Horwood, 1986; Patterson, 1993).

We propose several hypotheses articulating the processes by which initial marginal deviations may grow into habitual problematic behaviors and the circumstances in which this growth occurs. The processes include mechanisms implicated in the correspondence among multiple marginal deviations, the cognitive-affective experiences characterizing child-peer dyadic encounters, and the personal ways that a child and significant peers resolve affective and cognitive uncertainty over time. This theorizing is translational science drawing from attribution theory in social psychology (Jones & Nisbett, 1971), social-cognitive trait theory in personality (Caprara, 1992; Caprara & Pastorelli, 1993), cognitive theory in developmental

psychology (Piaget, 1926), dynamic systems theory (Thelen & Smith, 2006), and developmental psychopathology (Dodge & Pettit, 2003).

MARGINAL DEVIATIONS: IMPLICATED PROCESSES

Correspondence Between Behavior and Feelings

The path from minor deviations to major disorder is the story of the self-fulfilling prophecy (Jones & Nisbett, 1971) combined with dynamic systems theory of antisocial behavior (Granic & Patterson, 2006). A major conundrum for theories of self-fulfilling prophecies and labeling effects, and perhaps a reason that these notions have gone out of favor, is that they do not fully articulate the conditions under which prophecies do, or do not, come true. Our conceptualization is indebted to seminal work in social perception, such as the studies by Sherif and Hovland (1961) on assimilation and contrast effects, Piaget (1926) on assimilation and accommodation, Ross and Nisbett (1991) on distortions and attributional bias, Tversky and Kahneman (1974) on heuristics under uncertainty, Zimbardo (1999) on the effect of discontinuity in social interactions and cognitions, and Dodge (1993, 2000; Dodge & Pettit, 2003) on the role that social information-processing factors play in the development of habitual aggressive behavior.

The notion of marginal deviations refers not only to objective minor deviations of a person's behavior with respect to specific (i.e., context-bound) norms but also to a critical correspondence between initial marginal deviations in a child's behavior and perturbations in the cognitive-affective reactions experienced by observers of that child (e.g., peers, teachers, parents, or even the self). That is, we argue that anomalous behaviors that are only marginally deviant from a norm often elicit in others affective responses that are unusual to the extent they are inconsistent with preexisting schemas and disrupt continuity in the flow of current feelings and interpersonal exchanges. Perhaps because of their major stake in the long-term outcome, parents routinely wonder what their child will become and quickly make interpretations of their child's anomalous behaviors. Especially during early adolescence, youth are very sensitive to minor perturbations in their own and peers' behavior and status. We propose that these effects find expression in problematic reciprocal judgment processes and interpersonal confrontations that sustain and exacerbate and child's problematic behavior over time.

When marginal deviations in a child's behavior do not meet normative expectations, they bring disequilibrium in the observers' emotional states, eliciting feelings of discomfort and annoyance. In most cases, these feelings quickly dissipate through attenuation or compensation conducive to their complete assimilation into prior schemas about the target person. The marginally, deviant stimulus behavior may be dismissed, reinterpreted, or ignored by observers, or it may be met with self-correcting environmental responses that return the behavior to the norm. This process restores the observers' own (internal) emotional equilibrium.

In contrast, some circumstances increase the probability that marginal deviations will be transformed into severe deviations. When marginal deviations in a child's behavior increase in frequency or get coupled with marginal deviations in other personal or behavioral characteristics over time, the feelings of discomfort that an observer experiences may become unbearable. When anomalies concatenate, different sources of marginal discomfort converge into one class of feelings of distress, embarrassment, or intolerance that cannot be dismissed. Furthermore, when the marginal deviation is consistent with one's prior expectation for a child's behavior or one's stereotype about that child, then the marginal deviation serves as a confirmation of the expectation and the stereotype is strengthened (Gurwitz & Dodge, 1977).

Attenuation Versus Amplification of Marginal Deviations

Most marginal or minor deviations remain silent to the extent that they can be assimilated into prior schemas, compensated by reciprocally strong countervailing actions, discounted through attributional processes, or disregarded as error (Dodge, 2006). A kind of attributional charity may foster benevolent assimilation, even in the presence of repeated anomalies. When assimilation is challenged by an annoying deviation, this deviation may be compensated by other deviations in the opposite direction, as in the case of the slightly more aggressive child who is also slightly more generous than his peers.

Some circumstances render assimilation impossible. The more the deviations are chronic, demanding, and stressful, the more the assimilation becomes difficult. At some value, a tipping point is reached, and the process shifts to an exacerbation rather than a discounting of deviant tendencies. Amplification of marginal deviations prevails over their attenuation. Amplification can result either when some microdeviations repeatedly intrude into one's relations or when the disturbing effects of several concomitant microdeviations cumulate. In both cases, the net effect due to the sum of noxious stimulation is to reverse attenuation into amplification. Representativeness and availability heuristics lead observers to subsume, under wide encompassing labels such as aggressive, behaviors whose source can be different but whose effects are equally aversive.

Although we have focused on negative deviations, we also speculate that similar mechanisms operate with positive deviations. The behavioral consequences are unlikely to be symmetrical, however, given the higher salience of aversive over positive stimulation (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rothbart & Park 1986).

Categorization in Social Judgment

These processes argue for a transitional phase from affective experiences to social judgment and imply a shift from a judgment of conformity to one of norm violations. This nonlinear shift is a dynamical process that may involve temporary chaos until lawful relations resume (Thelen & Smith, 2006). Once this process occurs, even slight behavioral deviations in the future are likely to be exaggerated into perceived confirmations of a new status as deviant. At that point, there is a narrowing of the latitude of acceptance and a concurrent broadening of the latitude of rejection. Actions that previously were tolerated with indifference now become noticed, judged as intolerable, and treated consequently.

A fundamental aspect of this theory is that humans judge typically others in terms of discrete categories (e.g., aggressive or nonaggressive) rather than continuous dimensions. A child whose behavior is marginally aggressive is an ambiguous stimulus for the perceiver who acts under uncertainty to judge that child as belonging to either an aggressive or a nonaggressive category. Thus, the marginally aggressive child and those judging the child are in disequilibrium (Thelen & Smith, 2006), seeking a more stable state. The phenomenon is posited to be dynamical (Thelen & Smith, 2006) because the processes operate in nonlinear ways that interact with the child's initial level of risk to produce qualitative changes in state.

Once perceivers form an initial impression of a target as fitting a particular category, future stimuli are encoded and interpreted with reference to this category (Dodge, 1993). A child who initially behaves nonaggressively is likely to get classified as a nonaggressive and socially acceptable child. This category brings with it a broad set of expectations about future behavior as continuing to be nonaggressive but also to be academically competent, prosocial, socially accepted, and nonhyperactive. Empirically, it has been shown that peers group these behaviors together when judging others (Coie, Dodge, & Coppotelli, 1982). When confronted with a new behavior by this child, perceivers tend to assimilate this stimulus information by encoding and

interpreting the cues in a way that is consistent with the original category. Assimilation is a cognitively simple process that requires little change in the perceiver's repertoire of categories for perceiving the world or in the perceiver's initial classification of a child into a particular category. A stimulus is mentally represented as fitting the original category or is rejected as error.

Yet a different treatment is reserved for those actors whose marginal deviations in aggression get coupled with other problematic behavioral or personal characteristics, such as hyperactivity, poor academic status, or membership in a group that is stereotyped as deviant. In such cases, the evidence available to the perceiver is overwhelming and in contrast with known classification schemes. As the perceiver is forced to create a new category for classifying the actor, aggressiveness may become a very accessible construct to make sense of his or her feelings of annoyance and discomfort and a good reason to justify rejection or any aversive reaction that he or she experienced. In dynamic systems terms, the construct of aggressiveness serves as an attractor for feelings and as an anchor for new cognitions.

In an interpersonal context in which it is difficult to understand what is going on, individuals may "fill in the gaps" with beliefs associated with social stereotypes. Extensive evidence indicates that automatic, rather than conscious, feelings and thoughts dominate in stressful and anxious situations in which one is aware of his/her own general negative affective state (e.g., floating anxiety) but unaware about the causes of the feelings (Zajonc, 2000). In searching to understand this affective state, unconscious cognitive reactions occur automatically to activate attitudes (Chen & Bargh, 1997).

Thus, paradoxically, an observer's lack of awareness might be critical in shifting from attenuation to amplification. Lack of awareness may prevent an observer from attributing a single deviant behavior to any external source, other than the child actor's persistent trait. The perceiver anchors his/her feelings to some reasonable (accessible and plausible) cause in order to make sense of his/her reactions toward the child. Ultimately, marginal behavioral deviations may elicit perturbations in feelings that, by aggregation, are then conducive to global judgments stressing categorical types (Zajonc, 1980).

Personal and Situational Moderators

Personal and situational factors may moderate the hypothesized effects linking marginal deviations to feelings of discomfort and linking these feelings to subsequent judgments and aversive reactions. Different personal factors come into play depending on whom the analysis focuses. Compared to others, child actors who have difficulty regulating emotions (Eisenberg et al., 2001) may run a greater risk that their marginal deviations will be amplified because of relative difficulty in modulating their own affective response to others' mild discomfort. Early adolescents may be especially vulnerable to amplification if perceivers fear that antisocial behavior is growing at this age.

Some personal factors of actors elicit stereotypes in observers, particularly gender and race. Whereas aggression is relatively rare in girls, it is also likely that people are more receptive to subtle forms of male aggression and that the aggressive label is more available for the latter than for the former group (Bussey & Bandura, 1999). Ethnic prejudices may operate when they prime vigilance and raise the level of intolerance toward certain behaviors that are stereotypically associated with the target (Mullen & Johnson, 1990). Finally, personal factors of observers, such as self-regulatory style (e.g., avoidance, state orientation) or particular needs (e.g., need of closure) render certain perceivers more prone than others to judge marginal deviations as unbearable and to convert these feelings into negative judgments and interpersonal intolerance or rejection.

Environmental or situational conditions also moderate these processes. In an environment in which intolerance and lack of cooperation characterize interpersonal exchanges or in which there exists a relatively high consensus on what is an appropriate or inappropriate behavior, a marginally deviant child might be at greater risk for being singled out, labeled as aggressive, and rejected. Indeed, the normativeness of aggressive behavior in a peer context alters the likelihood that peers will judge a child who behaves aggressively as disliked (Stormshak et al., 1999).

RELEVANCE FOR DEVELOPMENTAL SCIENCES

The principles guiding these formulations are common to recent advances in developmental sciences. Theorists from quite different perspectives, including holistic-interactionist approaches (Magnusson & Mahoney, 2003; Magnusson & Stattin, 2006), dynamic system theories (Granic & Patterson, 2006; Thelen & Smith, 2006), and transactional approaches (Sameroff & Mackenzie, 2003), share the common assertion that human development is governed by complex, reciprocal, and nonlinear processes (Cicchetti, 2006; Lerner, 2006).

Our focus on marginal deviations and amplification processes is in line with the recent reformulation of Patterson's coercion theory in dynamic system terms (Granic & Patterson, 2006) and with Magnusson's crystallization hypothesis (Magnusson & Mahoney, 2003). In Patterson's theory, the explanation of new antisocial behaviors in late-onset youths makes reference to positive feedback mechanisms that amplify small variations and produce critical changes in interpersonal contexts having high emotional valence (family and peers). In Magnusson's crystallization hypothesis, a particular constellation of behaviors in individuals at a certain point in time may take different directions at the next step, "crystallizing" into a coherent psychopathology.

One relevant question is whether the children who have become chronically aggressive through a path of initial marginal deviation differ from early-starting children in their long-term outcomes. Moffitt (1993) has proposed that the adolescence-limited group is, indeed, limited to adolescence in its problem behavior. Future studies should follow both different age-onset subgroups and different pathway-onset subgroups across time to address this question.

Yet another question is whether children are especially vulnerable to processes affecting marginal deviation at a particular age. It is known that youth are most susceptible to deviant peer influences during the early adolescent years, when social comparison processes are particularly salient (Dodge & Sherrill, 2006). It is plausible that this era is also especially prone to processes affecting marginal deviation. This hypothesis awaits empirical inquiry.

Concluding Remarks

We have offered a conceptual framework of how behaviors that are only marginally different from the norm get transformed into more severe patterns of deviant behavior, and we propose a series of intervening mechanisms that operate in concert for both the child actor and the observers. These hypotheses remain speculative and need rigorous scientific testing. Our evidence of growth into serious aggression for some marginally aggressive children argues for more inquiry into the processes that mediate this growth, antecedents of this pattern, and long-term outcomes for these youth. Future studies should test whether those children who move from marginal to serious aggression experience long-term outcomes that are similar to those experienced by chronically aggressive children. We note that others have already identified a group of children who initiate chronic problem behavior later than the early-starting child (Loeber & Stouthamer-Loeber, 1998).

Our arguments rest on the notion of marginal aggression, and future evidence may need to clarify whether similar processes characterize children who initially are marginally deviant on other behavioral dimensions (e.g., hyperactivity, prosocial behavior). One key process that we highlight is that aggressiveness is a very accessible construct for observers. This process calls for specific patterns of dyadic changes in the emotional experiences and interpersonal exchanges involving marginally aggressive children and their counterparts. Future studies should test whether qualitative changes in observers' emotional states are linked to corresponding shifts from benign to negative judgments about the marginally aggressive child.

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