

## Role of Affective Self-Regulatory Efficacy in Diverse Spheres of Psychosocial Functioning

*Albert Bandura, Gian Vittorio Caprara, Claudio Barbaranelli, Maria Gerbino, and Concetta Pastorelli*

This prospective study with 464 older adolescents (14 to 19 years at Time 1; 16 to 21 years at Time 2) tested the structural paths of influence through which perceived self-efficacy for affect regulation operates in concert with perceived behavioral efficacy in governing diverse spheres of psychosocial functioning. Self-efficacy to regulate positive and negative affect is accompanied by high efficacy to manage one's academic development, to resist social pressures for antisocial activities, and to engage oneself with empathy in others' emotional experiences. Perceived self-efficacy for affect regulation essentially operated mediational through the latter behavioral forms of self-efficacy rather than directly on prosocial behavior, delinquent conduct, and depression. Perceived empathic self-efficacy functioned as a generalized contributor to psychosocial functioning. It was accompanied by prosocial behavior and low involvement in delinquency but increased vulnerability to depression in adolescent females.

The capacity for self-regulation is one of the core features of human agency in social cognitive theory (Bandura, 1999a, 2001). Perceived self-efficacy plays a pivotal role in this process of self-management because it affects actions not only directly but also through its impact on cognitive, motivational, decisional, and affective determinants. Beliefs of personal efficacy influence what self-regulative standards people adopt, whether they think in an enabling or debilitating manner, how much effort they invest in selected endeavors, how they persevere in the face of difficulties, how resilient they are to adversity, how vulnerable they are to stress and depression, and what types of choices they make at important decisional points that set the course of life paths.

A growing body of research has documented the contributing role of self-efficacy beliefs in self-development, adaptation, and change at different phases of the life course (Bandura, 1995, 1997). Children's beliefs in their efficacy contribute uniquely to variance in developmental outcomes

within the complex interplay of socioeconomic, familial, educational, and peer influences (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996b, 2001). Self-efficacy beliefs are developed and strengthened by mastery experiences, social modeling, and persuasive forms of social influences. Diverse intervention programs attest to the efficacy-enhancing impact of these modes of influence (Bandura, 1997; Schunk, 1989). In cross-cultural studies, the functional role of efficacy beliefs and the processes through which they operate are replicated in both individualist and collectivist cultural systems (Bandura, 2002). The present study extended this line of research to the role of affective self-regulatory efficacy in the management of the transitional stressors of adolescence.

Adolescence is an especially taxing transitional phase that presents a host of new challenges (Bandura, 1997; Eccles & Midgley, 1989; Furstenberg, Eccles, Elder, Cook, & Sameroff, 1999; Graber, Brooks-Gunn, & Peterson, 1996). Adolescents have to manage major biological, educational, and social role transitions concurrently. Learning how to deal with puberty changes, differently structured school environments and enlarged peer networks, and emotionally invested partnerships and sexuality become important. With growing independence, adolescents commonly experiment with risky activities, some of which may take antisocial forms. Gender differences in depression begin to emerge in adolescence, with girls exhibiting higher vulnerability to depression. This is also a time when older

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adolescents have to cope with the demands of emerging adulthood. How well adolescents develop and exercise their personal efficacy during this formative period can play a key role in setting the course their life paths take (Bandura, 1997).

For years psychological theorizing and research have centered on how the mind works in processing, representing, organizing, and retrieving information. To the extent that emotions were addressed, they were usually treated as consequences of actuating events rather than as determinants of psychosocial functioning. A comprehensive theory must also address the role played by affect regulation in human self-development and change. More recent lines of research have clarified the impact of affect regulation on attentional, cognitive, and motivational processes, and how failures in affect regulation give rise to emotional and psychosocial dysfunctions (Bower, 1992; Carstensen, 1992; Gross & Munoz, 1995; Larsen, 2000; Nolen-Hoeksema, 1991). Affect is often the basis of social ties and their durability that influences the course of lives (Bandura, 1986). Other studies have examined the development of emotional competence as reflected in the ability to discern emotions, to understand the social consequences of one's emotionally expressive behavior, and to manage one's emotional states (Mayer & Salovey, 1997; Saarni, 1999).

Different conceptual models have been proposed concerning the underlying structure of affective experiences (Russel & Carroll, 1999; Watson & Tellegen, 1985). Common among these models is an evaluative dimension representing positive and negative affect. The regulation of affect has important intrapersonal, communicative, and behavioral functional value (Bandura, 1986; Caprara, 2002; Larsen, 2000). Therefore, the perceived self-efficacy to manage these basic affective states was assigned a pivotal role in the posited causal structure tested in the present study.

It is one thing to possess self-regulatory skills but another to be able to adhere to them in taxing and perturbing situations. A resilient sense of efficacy is needed to overrule emotional and psychosocial subverters of self-regulative efforts (Bandura, 1997; Zimmerman, Bandura, & Martinez-Pons, 1992). The present research, therefore, sought to clarify the structural paths of influence through which perceived self-efficacy for affect regulation operates in concert with perceived self-efficacy for behavioral regulation in governing diverse forms of adaptation encompassing affective, prosocial, and transgressive spheres of functioning. This program of research broadens and extends developmentally the analysis

of perceived self-efficacy to the regulation of one's affective life and its impact on psychosocial functioning. It is conducted within the social functional perspective of social cognitive theory of emotion (Bandura, 1986, 1992).

In the interpersonal transactions of everyday life, socioculturally constructed expressive rules specify the conditions under which certain types of emotional displays are normative and others are deviant (Thoits, 1989). Expressions of positive and negative affect generally have different social effects. Everyday life is strewn with situational provocations and stressors that generate negative affect. Negative affect is a natural part of everyday life requiring effective self-management through self-regulatory capabilities. Unrestrained venting of anger, disparaging others, and voicing jealousy would get one endlessly embroiled in social, if not legal, troubles. If fear automatically triggered immobility or avoidance behavior, personal development and accomplishments would be severely constrained because most significant pursuits involve some risks and evaluative consequences that are fear arousing.

Unlike the often discordant and divisive effects of negative affect, positive affect promotes social connectedness and bonding. Expression of affection, liking, and joyfulness cultivates personal attractiveness. By fostering affiliative relationships, positive affect can enhance cognitive functioning, help buffer the perturbing effects of aversive experiences, and facilitate adaptive coping (Folkman & Moskowitz, 2000; Fredrickson, 1998; Isen, 1987). Enabling supportive relationships enhances a sense of personal efficacy that, in turn, influences the quality of affective and behavioral functioning. Indeed, mediational analyses show that social support produces beneficial outcomes only to the extent that it enhances perceived coping self-efficacy (Bandura, 2002).

Affective states are often depicted as operating directly on psychosocial functioning, with negative affect producing adverse effects and positive affect producing beneficial effects. Adaptive functioning requires discriminative regulation of affect. People differ widely in how well they manage the emotional experiences of everyday life. A growing body of evidence indicates that perceived self-regulatory efficacy is an important factor in the variable behavioral effects of negative affect. For example, negative affect precipitates binge eating often in bulimics of low perceived self-regulatory efficacy, but infrequently in those of high perceived self-regulatory efficacy (Love, Ollendick, Johnson, & Schlezinger, 1985; Schneider, O'Leary, & Agras, 1987). In coping with threats, individuals of high

perceived self-efficacy perform intimidating activities successfully despite anxiety arousal (Bandura, 1997; Pajares & Valiante, 1997; Williams, 1995).

The mediating role of perceived self-efficacy is also evident in the self-management of depression. Observational studies of interactions of clinically depressed mothers with their infants revealed that mothers' beliefs in their parenting self-efficacy predict how competently they perform caretaking activities after controlling for social and marital support and severity of depression (Teti & Gelfand, 1991). The findings from these diverse lines of research underscore the influence of self-efficacy in regulating the impact of affect.

To test the generality of the self-efficacy theory of affect regulation, diverse psychosocial outcomes were selected for study. They included prosocial behavior and antisocial conduct as behavioral effects, and depression as an emotional aspect of life. Figure 1 summarizes schematically the direct and mediated paths of influence in the posited structural model. The subsequent discussion provides the conceptual rationale for each structural path.

The first segment of the posited model specifies the impact of perceived efficacy to regulate affect on beliefs in ones' capabilities to manage academic

demands, transgressive peer pressures, and empathic feelings. Although perceived self-efficacy to regulate affective states can influence the latter domains of functioning directly, for reasons already given, most of its impact was hypothesized to be mediated through more behaviorally oriented efficacy beliefs.

Affective states have a widely generalized impact on judgments of personal efficacy. Experimentally induced negative affect diminishes perceived self-efficacy across different spheres of functioning, whereas positive affect enhances perceived self-efficacy (Kavanagh & Bower, 1985). The more intense the induced affect, the greater is its impact on self-efficacy beliefs (Forgas, Bower, & Moylan, 1990; Salovey & Birnbaum, 1989). The higher the affect-based sense of personal efficacy, the stronger is the engagement in activities (Bandura, 1997; Kavanagh, 1983). It was, therefore, predicted that perceived self-efficacy to manage positive affect would foster perceived academic, social self-regulatory, and empathic efficacy. By contrast, a weak sense of efficacy to manage negative affect would undermine the behaviorally oriented efficacy beliefs.

The second segment of the posited structural model specified the functional relations of behaviorally oriented efficacy beliefs to the different spheres

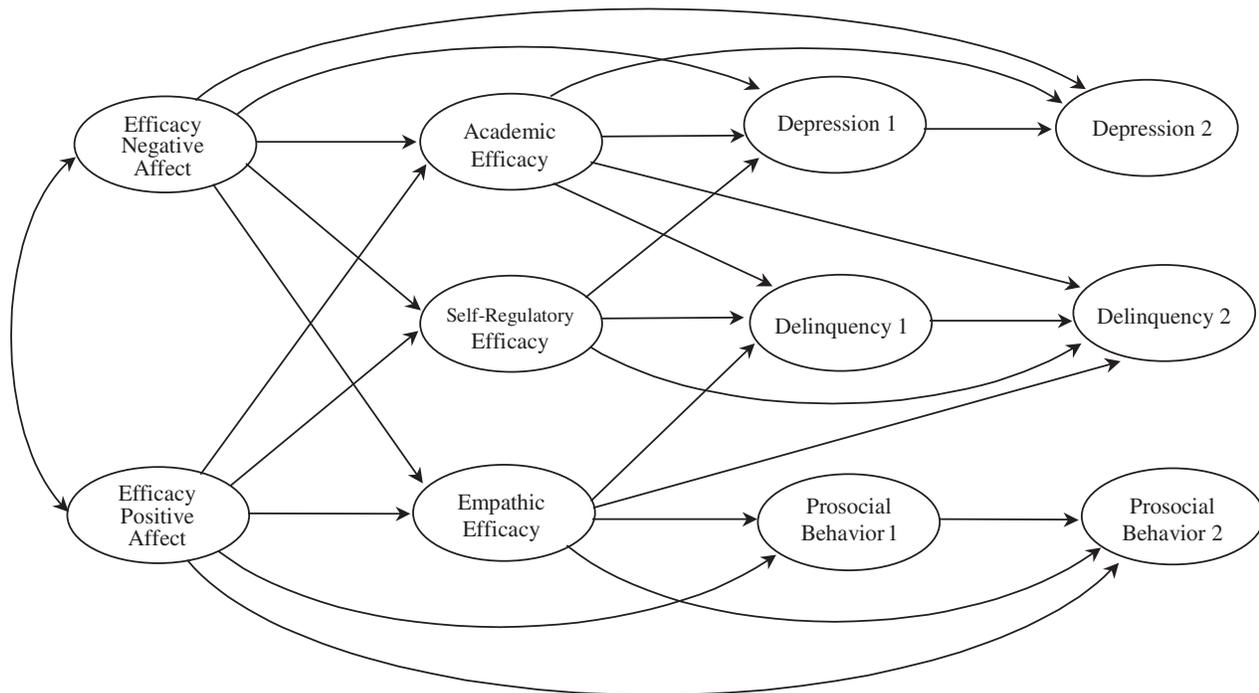


Figure 1. Posited causal structure through which perceived self-efficacy for affect regulation operating in concert with action-oriented efficacy beliefs influence depression, delinquent conduct, and prosocial behavior.

of psychosocial functioning. Perceived academic, social self-regulatory, and empathic efficacy were hypothesized to affect depression, delinquent conduct, and prosocialness both concurrently and prospectively. Perceived academic self-efficacy plays a mitigating role in depression and transgression. A secure sense of academic self-efficacy reduces vulnerability to depression by promoting academic attainments and altering the construal and management of failure (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999). For individuals of high efficacy, failures, setbacks, and obstacles are viewed as surmountable and, therefore, spark redoubled effort rather than discouragement and despondency (Bandura, 1991). For individuals of low efficacy, failure undermines motivation and breeds despondency.

Difficulties in the academic sphere often result in disengagement from academic activities and gravitation to peers who favor transgressive pursuits (Dishion, 1990; Hinshaw, 1992; Jessor, Donovan, & Costa, 1991; Patterson, Capaldi, & Bank, 1991). It is students' beliefs in their academic capabilities rather than their actual academic performances that tend to shape the course of their developmental trajectories (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). With regard to antisocial proclivities, a low sense of academic efficacy increases risk by involvement in transgressive activities and substance use (Bandura et al., 1996a; Bandura, Barbaranelli, Caprara, Pastorelli, & Regalia, 2001).

As low sense of efficacy to ward off peer pressure to pursue detrimental activities creates vulnerability to troublesome social influences. Individuals who feel at a loss to manage the predicaments they get caught in readily give in to inducements for antisocial forms of conduct (Bandura et al., 1996b; Bandura, Barbaranelli, Caprara, Pastorelli, et al., 2001). Perceived self-regulatory inefficacy predicts transgressive behavior after controlling for prior level of transgressive behavior and quality of familial relationships (Caprara, Regalia, & Bandura, 2002).

People's efficacy for being empathetic was also hypothesized to play an influential role in their social and emotional lives. Empathic self-efficacy is not simply a reactive process of cognitive perspective taking but rather an active self-involvement in the emotional life of others (Bandura, 1986). Interpersonal experiences during formative years, in which people experience joys and suffer pain in a correlational way, create the foundation for empathic responsiveness to the plight of others (Bandura, 1992, in press; McHugo, Smith, & Lanzetta, 1982). Conversely, discordant emotional experiences, as

when coactors' joyful triumphs spell sorrowful losses for oneself and coactors' sorrow spells joy for oneself, create counterempathic responsiveness (Englis, Vaughan, & Lanzetta, 1982; Lanzetta & Englis, 1989). Empathic responsiveness fosters prosocial behavior (Hoffman, 2001; Mussen & Eisenberg, 2001; Staub, 1971). Perceived self-efficacy for empathic response can also deter delinquent conduct by activating vicarious distress over the suffering of others and fostering social networks conducive to harmonious relationships (Bandura, 1992, 1999b; Feshbach & Feshbach, 1986; Miller & Eisenberg, 1988).

To summarize the posited structural model, perceived self-efficacy to regulate positive and negative affect influences depression, delinquent conduct, and prosocial behavior both directly and mediationaly by their impact on perceived academic self-efficacy, resistive self-regulatory efficacy, and empathic self-efficacy. The inclusion of diverse spheres of perceived self-efficacy and multiple developmental outcomes within the same design permitted tests of cross-domain functional relations.

## Method

### *Participants*

The participants were 464 older adolescents, 213 males and 251 females, ranging in age from 14 to 19 years, with a mean age of 16 years at Time 1, and ranging in age from 16 to 21 with a mean age of 18 years at Time 2, 2 years later. To avoid potential selection biases, all the students who were originally in the 4th and 5th grades in one of two large elementary schools serving a community located near Rome were the source of the participants when they were enrolled in the middle school at the Time 1 assessment. All of the families consented to have their children participate in the research. The project included a staggered, multiple cohort design with three cohorts assessed at two time points. At the time of the second measurement, 95% of the participants were enrolled in several high schools serving the community. The remaining participants had left school and were employed in the community.

The participants varied widely in socioeconomic background drawn from a community that represents a microcosm of the larger society. It contained families of skilled workers, farmers, professionals, and local merchants and their service staffs. Eighteen percent were in professional or managerial ranks, 40% were merchants or employees in various

types of businesses, 17% were skilled workers, 18% were unskilled workers, 5% were retired, and 2% were unemployed. The community comprises a homogenous Italian population. The families live together in the community rather than being segregated by residence and schools based on socioeconomic status. The socioeconomic diversity of the sample and high residential integration adds to the generalizability of the findings.

This community adheres to a stringent consent procedure for research conducted in the schools. A research proposal must gain approval from a school council composed of parent and teacher representatives at the junior and high school levels. In addition, parents must give consent and children are free to decline to take part. Informed consent was obtained from 100% of the families, with 88% of the sample reassessed at Time 2. The attrition was mainly due to relocation from the area or absence from school at the time of the assessments. In ANOVA, the latter children did not differ significantly from their counterparts on any of the variables in the initial assessment, nor did the groups differ in the covariance matrices as tested by the Box M test for homogeneity of covariance matrices.

The study was explained to parents and adolescents as a project designed to gain better understanding of adolescent development. Participants were administered the sets of scales measuring the variables of theoretical interest by three female researchers during specially scheduled sessions in a school. The set of five self-efficacy predictors was measured at Time 1, and the three psychosocial domains of functioning were measured at both Time 1 and Time 2.

Participants' beliefs in their personal efficacy were measured for five domains of functioning. For the items in the different sets of efficacy scales, participants rated the strength of their belief in their capability to execute the designated activities, using a 5-point response format ranging from 1 (*perceived incapability*) to 5 (*complete self-assurance in one's capability*).

#### *Affective Self-Regulatory Efficacy*

Affective self-regulatory efficacy was measured by 14 items concerning perceived capability to manage one's emotional life. These included perceived efficacy to discern one's emotional states, understand one's feelings toward others, and manage the expression of positive and negative affect.

Perceived self-efficacy to manage positive affect was measured by five items in terms of perceived

capability to express liking and affection toward others, to get oneself to express enthusiasm and enjoyment, and to feel satisfaction with personal accomplishments. The item "I can show liking for a person toward whom I am attracted" assessed perceived efficacy to express fondness.

Perceived self-efficacy to regulate negative affect was assessed by nine items in terms of perceived capability to manage negative affect in the face of anxiety-arousing threats, anger provocation, rejection, and disrespect, and to control worrisome ruminations when things go wrong. Other items of affective self-management measured perceived efficacy to calm oneself in taxing situations and to recover quickly one's emotional well-being after suffering perturbing experiences. "I can calm myself in stressful situations" is a sample item.

#### *Perceived Academic Self-Efficacy*

Participants' beliefs in their efficacy to direct their academic activities included high loading on 15 items measuring perceived efficacy to master different academic areas of coursework; to fulfill personal, parents', and teachers' academic expectations; and to regulate their own learning activities. The items concerned with self-directed learning assessed children's efficacy to arrange environments conducive to learning, to plan and to organize their academic activities, to use cognitive strategies to enhance understanding and memory of the material being taught, to seek pertinent information and get teachers and peers to help them with academic problems when needed, to motivate themselves to do their schoolwork, to get themselves to complete scholastic assignments within set deadlines, and to pursue academic activities when there are other interesting things to do. The item "How well can you get teachers to help you when you get stuck on schoolwork?" measured perceived self-efficacy to enlist enabling social resources. The item "How well can you study when there are other interesting things to do?" measured children's perceived efficacy to motivate themselves for academic pursuits in the face of competing attractions.

#### *Resistive Self-Regulatory Efficacy*

Perceived resistive self-regulatory efficacy centered on adolescents' beliefs in their efficacy to ward off social inducements for transgressive conduct. This perceived capability was assessed by 10 items, which measured perceived efficacy to resist peer pressure to engage in high-risk activities involving

the use of alcohol and drugs, sexual activity, theft of property, and various other types of transgressive activities that can get them into serious trouble. For example, the following item assessed perceived self-regulatory efficacy to rebuff pressures exerted by peers to use drugs: "How well can you resist using drugs even if your friends push you to use them?"

The factor structures of the academic and resistive self-regulatory efficacy scales have been replicated cross-nationally with Italian, Hungarian, and Polish children (Pastorelli et al., 2001). The predictive validity of these forms of perceived self-efficacy has been verified in prior studies both cross-sectionally (Bandura et al., 1996a, 1996b; Caprara et al., 1998) and prospectively (Bandura, Barbaranelli, Caprara, & Pastorelli 2001; Bandura, Barbaranelli, Caprara, Pastorelli et al., 2001; Bandura et al., 1999; Caprara 2001; Caprara et al., 2002; Zimmerman et al., 1992).

#### *Empathic Self-Efficacy*

Perceived empathic self-efficacy was measured by 12 items in terms of perceived capability to sense another person's feelings and need for emotional support, to discern coactors' emotional expressions, to experience emotions from another person's perspective, to respond empathetically to others' distress and misfortune, and to be sensitive to how one's actions affect others' feelings. The sample item "I can experience how a person in trouble feels" assessed perceived empathic capability for empathic distress.

To investigate the dimensionality of the sets of self-efficacy items, a principal factor analysis with Oblimin rotation was performed. Only items loading .40 or higher were considered for inclusion in a factor. The actual item loadings in the factors ranged from .45 to .78. The results revealed a five-factor structure corresponding to the posited five domains of self-efficacy functioning, each representing a single factor. The percentage of the total variance explained by these different self-efficacy scales was 11% for empathic efficacy, 11% for academic efficacy, 9% for resistive self-regulatory efficacy, 9% for efficacy to regulate negative emotions, and 5% to manage positive emotions.

The alpha reliability coefficients for the self-efficacy factor scales were uniformly high. The coefficients were .88 for regulating negative affect, .82 for managing positive affect, .89 for empathic efficacy, .88 for academic efficacy, and .86 for resistive self-regulatory efficacy.

#### *Depression*

Participants rated their level of depression on the 20-item scale developed by Radloff (1977). The validity of this measure has been corroborated (Radloff, 1977; Weissman, Sholomskas, Pottenger, Prushoff, & Locke, 1977). The items measure the features that characterize depression, such as dependency, hopelessness, loss of appetite and interest in pleasurable activities, sleep disturbance, crying bouts, loss of initiative, and self-deprecation. Participants rated how often over the past week they experienced these aspects of depression using a 5-point response format. The alpha reliability coefficients were .88 for Time 1 assessment and .89 for Time 2 assessment.

#### *Prosocial Behavior*

Participants rated on a 5-point response format their prosocial behavior on a 24-item scale that assessed their degree of helpfulness, sharing, consoling, supportiveness, and cooperativeness. "I try to help others" and "I try to console people who are sad" are sample items. This scale is an expanded version of the measure of prosocial behavior developed by Caprara and Pastorelli (1993) for younger children. The concurrent validity of this measure has been corroborated in studies relating children's self-ratings of prosocial behavior with their level of prosocial behavior as rated by their parents', teachers', and peers' sociometric nominations (Caprara & Pastorelli, 1993). Factor analysis of the adolescent version revealed a single factor structure. The reliability coefficients were .94 for Time 1 assessment and .95 for Time 2 assessment.

#### *Delinquent Behavior*

Delinquent behavior was measured initially and 2 years later by the Achenbach (1991) Delinquency scale. Both the reliability and predictive validity of this measure of delinquent behavior are well established (Achenbach, Howell, McConaughy, & Stanger, 1995a; Achenbach & McConaughy, 1996). The scale, comprising 11 items, assesses a wide range of transgressive behaviors including aggression, theft, cheating, lying, destructiveness, truancy, and use of alcohol and drugs. Participants recorded whether they engaged in such antisocial activities and, if they did, whether they did so only occasionally or often. The reliability coefficient was .86 at the Time 1 assessment and .74 at the Time 2 assessment.

## Results

Before conducting the analyses, we examined the data for univariate and multivariate outlying cases using the procedure devised by Tabachnik and Fidell (1989). Five participants, 2 males and 3 females, were detected as outliers and eliminated from subsequent analyses. Table 1 presents the means and variances for the variables. It also includes the matrix of relations among the forms of perceived self-efficacy and the three domains of psychosocial functioning: depression, delinquent conduct, and prosocial behavior. None of the variables presented problems of normality, with skewness ranging from  $-.70$  to  $.99$  and kurtosis ranging from  $-.41$  to  $.90$ .

ANOVAs of gender variations revealed significant differences on all of the assessed variables. The degrees of freedom for all of the  $F$  values are 1 and 462. Females had a stronger sense of academic efficacy ( $F = 27.64$ ,  $p < .001$ ) and resistive self-regulatory efficacy ( $F = 72.64$ ,  $p < .001$ ). They also showed stronger empathic efficacy ( $F = 6.69$ ,  $p < .01$ ) and efficacy to express positive affect ( $F = 7.88$ ,  $p < .01$ ) but weaker efficacy to manage negative affect ( $F = 14.03$ ,  $p < .001$ ). Girls were also more depressed than boys at both Time 1 ( $F = 34.72$ ,  $p < .001$ ) and Time 2 ( $F = 29.53$ ,  $p < .001$ ). However, they were more prosocially oriented at both Time 1 ( $F = 59.41$ ,  $p < .001$ ) and Time 2 ( $F = 33.75$ ,  $p < .001$ ), and less prone to delinquent behavior at Time 1 ( $F = 53.15$ ,  $p < .001$ ) and Time 2 ( $F = 69.96$ ,  $p < .001$ ).

## Pattern of Influences

We tested the posited structural model on the covariance matrix with the EQS program (Bentler, 1995). Participants' forms of perceived self-efficacy at Time 1 served as predictors of depression, delinquent conduct, and prosocial behavior both concurrently (Time 1) and 2 years later (Time 2). Because of gender differences, we analyzed the structural model by using the multiple-groups model approach, which estimated simultaneously the same pattern of relationships among variables in the two samples of males and females. In this approach, equivalence among samples is evaluated by constraints that impose identical estimates for the model's parameters (Byrne, 1994; Scott-Lennox & Scott-Lennox, 1995). In EQS, the plausibility of these equality constraints is examined by the Lagrange multipliers (LM) test (Bentler, 1995). For each of the constraints specified, the LM test provides evidence that the constraint applies to the populations involved. In the present study the equality constraints were imposed on path coefficients across the gender groups.

Figure 2 presents the results of the path analysis using the multifaceted self-efficacy predictors of depression, delinquent conduct, and prosocial behavior, both concurrently and prospectively. The figure includes all of the path coefficients that are significant beyond the  $.05$  level.

Perceived self-efficacy to regulate positive and negative affect are both accompanied by high perceived academic self-efficacy, resistive self-regu-

Table 1

Means, Standard Deviations, and Correlational Matrix for the Affect Regulation and Action-Oriented Forms of Perceived Self-Efficacy, and Depression, Delinquent Conduct and Prosocial Behavior Measured Concurrently (1) and Longitudinally (2),  $N = 459$

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Academic efficacy	3.71	.58	—	.58***	.40***	.30***	.37***	-.27***	-.49***	.33***	-.14**	-.38***	.28***
2. Regulative efficacy	4.07	.70		—	.28***	.24***	.36***	-.17***	-.57***	.31***	-.07	-.52***	.23***
3. Empathetic efficacy	3.72	.58			—	.44***	.66***	-.19***	-.24***	.51***	-.10*	-.27***	.41***
4. Efficacy in managing negative emotions	3.19	.67				—	.36***	-.44***	-.24***	.21***	-.33***	-.18***	.11*
5. Efficacy in expressing positive emotions	4.13	.61					—	-.18***	-.22***	.38***	-.13**	-.28***	.28***
6. Depression (1)	30.50	8.57						—	.27***	-.03	.57***	.15**	.02
7. Delinquency (1)	6.20	5.66							—	-.26***	.18***	.58***	-.15**
8. Prosocial behavior (1)	85.32	14.76								—	.03	-.25***	.66***
9. Depression (2)	33.00	9.22									—	.26***	.00
10. Delinquency (2)	5.94	5.61										—	-.22***
11. Prosocial behavior (2)	86.48	13.96											—

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

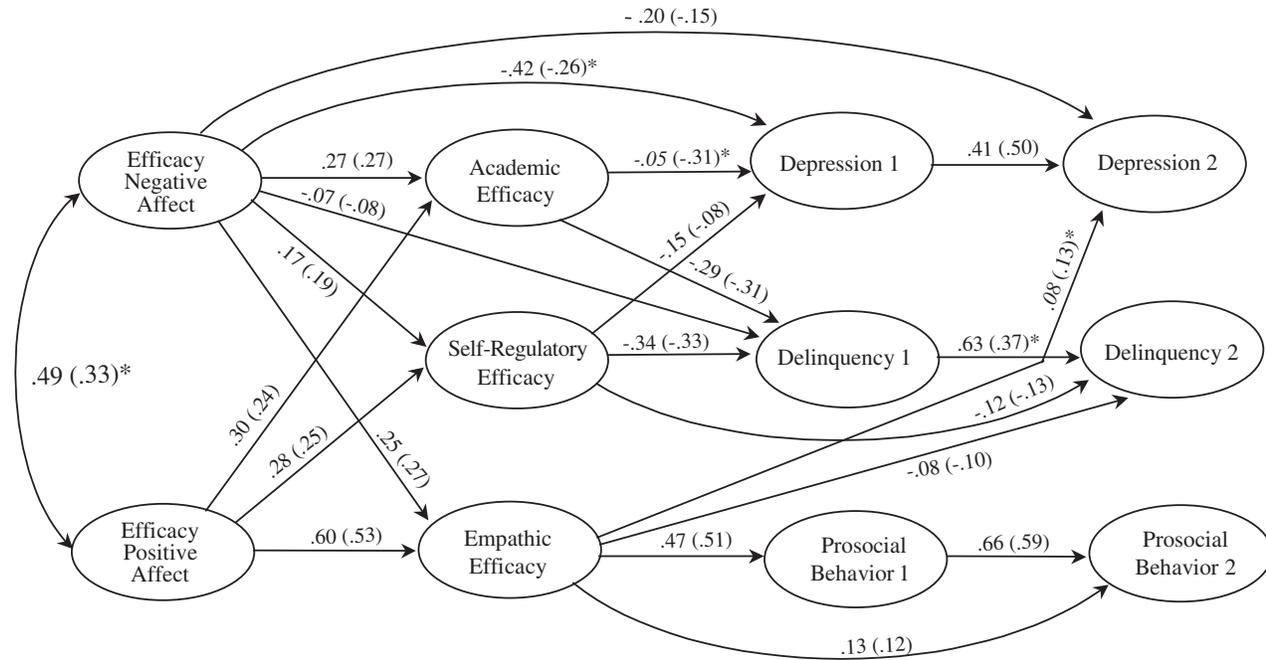


Figure 2. Path analysis of the pattern of influences through which perceived self-efficacy to regulate positive and negative emotions acting in concert with academic, behavioral self-regulatory, and empathic efficacy affect depression, delinquent conduct, and prosocial behavior concurrently and longitudinally. The first path coefficient on each of the structural links is for males; the second coefficient in brackets is for females. All the path coefficients are significant beyond the  $p < .05$  level except that, for males, empathic self-efficacy is unrelated to delinquent conduct and depression. These two nonsignificant path coefficients are printed in italic type. The coefficients with an asterisk on the paths differ significantly across gender.

latory efficacy, and empathic self-efficacy. Perceived self-efficacy to manage positive affect contributed more strongly to variance in each of the latter spheres of perceived efficacy.

A strong sense of efficacy to regulate negative affect is accompanied by low proneness to depression concurrently and distally both directly and mediationally through academic self-efficacy and empathic self-efficacy. Perceived self-efficacy to regulate negative affect is also accompanied by concurrent delinquent conduct directly and through academic self-efficacy, and by distal delinquency mediationally through perceived self-efficacy to resist peer pressure for transgressive conduct. The relation between perceived self-efficacy to regulate negative affect to concurrent and distal prosocial behavior is entirely mediated through perceived empathic self-efficacy.

Perceived self-efficacy to manage positive affect also contributes to variance in the three domains of functioning, but only through its impact on the more action-oriented forms of perceived efficacy. Its mediated link to depression is through its impact on perceived academic self-efficacy, to delinquent conduct through perceived self-efficacy to resist peer

pressure for delinquent conduct, and to prosocial behavior through empathic self-efficacy.

Perceived academic, resistive self-regulatory, and empathic efficacy contribute differentially to depression, delinquent conduct, and prosocial behavior with some interesting gender differences. Perceived academic self-efficacy was accompanied by low concurrent engagement in delinquent activities and low depression in females but not in males. Adolescents of high perceived resistive self-regulatory efficacy exhibited low involvement in delinquent activities both concurrently and distally. Perceived empathic self-efficacy contributed to prosocial behavior in males and females both concurrently and distally. High perceived empathic self-efficacy is associated prospectively with proneness to depression in adolescent females but not in males. A strong sense of empathic self-efficacy also predicts low engagement in delinquent conduct in the longer term.

Depression, delinquent conduct, and prosocial behavior showed moderate stability over time, but more so for depression in females and delinquency in males, with a similar level of stability across gender for prosocial behavior. The different forms of

perceived self-efficacy made unique contributions to variance in the latter spheres of functioning after controlling for the prior levels of these outcomes.

The refined model, which includes the significant nonspecified relation between empathic self-efficacy and depression, provided an excellent fit to the empirical data as shown by different goodness-of-fit indexes. These tests yielded a nonsignificant chi square,  $\chi^2(80, N = 459) = 98.41$ , a non-normed fit index (NNFI) of .99, a comparative fit index (CFI) of .99, and a root mean square error of approximation (RMSEA) of .023. For the CFI and NNFI indexes, the closer the value is to 1 the better is the model fit. For the RMSEA index, the closer the value is to 0, the better is the fit of the conceptual model to the empirical data.

The model accounted for 27% and 30% of the variance in depression for females at Time 1 and Time 2, respectively, and 26% and 26% of the variance for males at the two time points. The model accounted for 34% and 54% of the variance at Times 1 and 2 delinquent conduct in males, and 35% and 23% of the variance in Times 1 and 2 delinquent conduct in females. For prosocial behavior, the model explained 23% and 53% of the variance for males at Times 1 and 2, and 26% and 43% of the variance for females at Times 1 and 2.

#### *Alternative Models*

Although the refined model provided an excellent fit to the empirical data, alternative plausible models were also tested. One alternative model presumes that quality of psychosocial functioning shapes efficacy beliefs. It reverses the direction of causation with Time 1 depression, delinquent conduct, and prosocial behavior influencing efficacy beliefs at Time 1 and the three modes of functioning at Time 2. This trimmed model, which includes only the paths found to be significant, provided a much poorer fit to the data. It yielded a significant chi square,  $\chi^2(90, N = 459) = 233.61$ ,  $p < .001$ , and fared less well on the other goodness-of-fit indexes, with NNFI = .90, CFI = .93, and RMSEA = .059.

A second plausible model conferred causal primacy to perceived academic, resistive self-regulatory, and empathic efficacy. In this structural model the latter behaviorally oriented efficacy beliefs affect the three spheres of functioning both directly and indirectly through their impact on positive and negative affect self-regulatory efficacy. This trimmed structural model provided a better fit to the data on the indexes than the model assigning causal primacy to prior behavior as the predominant

factor, with a significant chi square,  $\chi^2(90, N = 459) = 134.88$ ,  $p < .001$ , NNFI = .97, CFI = .98, and RMSEA = .033.

The Akaike information (AIC) index is particularly well suited for comparing the adequacy of non-nested models fitted to the same correlational matrix. The lower the AIC index, the better is the goodness of fit. In this comparison, the AIC index confirmed a better fit for the posited causal structure (-45) than the model conferring causal primacy to the more behaviorally oriented forms of perceived self-efficacy (-29). The model reversing the causal ordering by making prior prosocial behavior, delinquent behavior, and depression the primary causal factors (54) provided the poorest fit to the empirical data.

#### **Discussion**

The findings of this research provide a good empirical fit to the structural model specifying how perceived affective self-regulatory efficacy operates in concert with action-oriented perceived self-efficacy in governing adaptation in diverse spheres of functioning. There is a notable pattern of gender differences in self-appraisals of efficacy. Compared with adolescent males, females manifest a stronger sense of efficacy to manage academic activities, to rebuff peer pressure for transgressive behavior, to experience empathy for another's feelings and experiences, and to express positive affectively in their interpersonal relationships. However, adolescent females doubt their efficacy to manage negative affective states. These differential patterns of perceived self-efficacy are accompanied by different styles of adaptation. Compared with males, females are more prosocial in their behavior, less prone to delinquent conduct, and more prone to depression.

Although efficacy beliefs differed as a function of gender, the causal structures were essentially the same for both groups. In accord with prediction, a strong sense of efficacy to manage one's positive and negative emotional life contributes to perceived self-efficacy to take charge of one's academic activities, to ward off peer pressures for transgressive behavior, and to feel empathy for the experiences of others.

Theorizing and research on human affect is heavily oriented toward the detrimental psychosocial effects of dysregulation of negative emotional states. The recent years have witnessed a shift in our discipline toward the contribution of positive factors to human self-development, adaptation, and change (Bandura, 2001; Seligman & Csikszentmihalyi, 2000).

In the present research, perceived self-efficacy to express positive affect in interpersonal transactions is generally a stronger contributor to beliefs that one can manage academic, transgressive, and empathic aspects of one's life than is perceived self-efficacy to regulate negative affect.

Except for the direct effect of perceived self-efficacy to regulate negative affect on depression, affective self-regulatory efficacy was related to the domains of functioning indirectly through its impact on behaviorally oriented aspects of perceived self-efficacy. In the mediated paths of influence, perceived capability to manage positive and negative affect is associated with low engagement in delinquent activities concurrently and lessened proneness to depression in girls through its impact on academic self-efficacy. These enabling and protective developmental benefits of perceived academic self-efficacy replicate functional relations obtained at younger ages (Bandura et al., 1996b, Bandura, Barbaranelli, Caprara, Patorelli, et al., 2001; Bandura et al., 1999). This evidence adds to the generalizability of the functional properties of this belief system. Similarly, the impact of perceived efficacy to manage positive and negative affect on delinquency and prosocial behavior is entirely mediated through perceived empathic and behavioral self-regulatory efficacy.

Perceived self-efficacy to rebuff peer pressures for transgressive behavior is accompanied by low proneness to depression concurrently and low delinquent conduct both concurrently and longitudinally. When examined within the context of familial relationships, perceived self-regulatory efficacy deters involvement in delinquent activities after controlling for both prior delinquent conduct and quality of parental communication (Caprara et al., 2002). Adolescents who are assured in their efficacy to manage peer pressure stay clear of delinquent activities and freely discuss with their parents the predicaments they face outside the home.

Perceived empathic self-efficacy functioned as a significant mediator in each of the forms of adaptation. Adolescents with a high sense of efficacy to involve themselves in the emotional lives of others were more prosocial in their relationships and refrained from delinquent conduct. These findings are in accord with prediction. Research comparing the early familial management practices of adjudicated delinquents with those of prosocial adolescents in the same milieu shed some light on the development of empathic self-efficacy and its role as a restrainer of aggression (Bandura & Walters, 1959). In their early socialization practices, parents of sons who adopted aggressive styles of behavior relied

heavily on fear-based control. They sought to discourage their sons' aggressive conduct by emphasizing the external punishment it would bring on them. In contrast, the parents of prosocial sons cultivated empathic-based control. They portrayed the consequences of aggressive conduct in terms of the injury and suffering it brings to others. In handling problems of misconduct, parental socialization practices that direct attention to the suffering inflicted on others foster development of empathic perspective taking and prosocial behavior (Bandura & Walters, 1959; Hoffman, 2001; Mussen & Eisenberg, 2001).

The structural analysis revealed an interesting nonspecified relation between perceived empathic self-efficacy and longer term depression. This was true for adolescent females but not for males. Empathic self-efficacy in females increases vulnerability to depression over time. To the extent that many of the experiences involve perturbing aspects, personalizing the distresses of others can take an emotional toll on empathizers. It is widely assumed that empathic arousal motivates prosocial behavior to reduce one's own vicarious distress. However, it is not uncommon for people to avoid empathic distress by disengaging themselves psychologically and physically from the suffering of others (Bandura, 1999b, *in press*; Bandura & Rosenthal, 1966).

In social cognitive theory (Bandura, 1999b) being empathetic can serve a proactive intrapersonal and prosocial function as well. People form self-conceptions embodying self-evaluative standards of social obligation. They act in accordance with their personal standards to preserve their self-respect. A vulnerability based on being empathetic presents the challenge of how to moderate the personalization of other people's distress and suffering to minimize impairing personal anguish without becoming emotionally indifferent to the plight of others (Maslach, 1982).

The question remains of how much of the gender difference in empathic efficacy is the product of evolutionary endowment, differential socialization, sociostructural role prescription, or dynamic interaction among these factors. Males and females do not differ in their ability to recognize affect in others, but females generally display stronger vicarious arousal (Hoffman, 1977). Personal distress over another's adverse experiences, as indexed by autonomic arousal, predicts proneness to helpfulness in girls but not in boys (Fabes, Eisenberg, & Eisenbud, 1993). For the socialization of emotion, males are traditionally socialized to be instrumental and emotionally stoic, and females are socialized to be

emotionally expressive and nurturing responsive. Differences in the socialization of emotion can create differential proclivity for empathic arousal. The findings of research conducted within the framework of sociological theory (Thoits, 1989) and social cognitive theory (Bandura, 1986; Bussey & Bandura, 1999) document the social construction of affect and its expressive display. Systematic research into gender differences in frequency and intensity of affective experiences and expressive display styles shed light on the notion that affective interpersonal commonality may be a contributing factor.

Knowledge of the mechanisms governing empathic response provides another possible explanation for gender difference in capability for vicarious self-arousal. Evidence indicates that personalizing the emotional experiences of others is more vicariously arousing than simply viewing events from their perspective. Thus, for example, observers react more emotionally to the sight of a person in pain if they imagine how they themselves would feel under the circumstances than if they imagine how the other person might feel (Stotland, 1969). Studies of the development of empathic understanding corroborate the importance of personalization (Hughes, Tingle, & Sawin, 1981). Young children who focus on their own emotional reactions to the plight of others gain better understanding of others' emotions than if they focus on how others might feel.

The ability to visualize oneself undergoing the experiences to which others are being subjected seems to be a critical factor in the empathic process (Bandura, 1986; Stotland, 1969). The imaginal self-arousal is facilitated by revivifying similar experiences. The emotional expressions of others serve as retrieval cues for observers to reactivate similar emotions that they have experienced. If females have more emotional experiences to draw on, they will exhibit stronger empathic responsiveness. Given that females are more prone to depression than males (Culbertson, 1997; Nolen-Hoeksema, 1990), they are likely to have greater commonality of despondency for revivification. To further complicate affect regulation, females tend to have a lower sense of efficacy to manage negative affect than do males. The combined effect of higher vicarious emotional activation and a low sense of efficacy to manage negative affect increases personal vulnerability to others' emotional distress.

As this and other studies reveal, compared with males, females are more involved prosocially in relationships as expressed in being helpful, sharing, consoling, and cooperative (Bandura, Barbaranelli, Caprara, Pastorelli, et al., 2001). High concern for the

welfare of others provides many occasions for dejection over their sorrowful predicaments. Gender differences in the management of despondency is still another process by which empathic efficacy may increase vulnerability to depression. Males tend to work their way out of a despondent mood by immersing themselves in activities, whereas females are more inclined to dwell on their despondency, which sustains or exacerbates it (Nolen-Hoeksema, 1990).

Although the predictive relations were studied prospectively, self-report data present certain limitations. Note, however, that self-beliefs are subjective phenomena that are necessarily accessible through self-report. Some of the developmental outcomes, especially prosocial behavior and delinquent conduct, are socially measurable behavioral phenomena, but many delinquent activities remain hidden from the public. In prior research, prosocial behavior and antisocial conduct were assessed by multiple methods (self-report, sociometric ratings, behavior observations) and by multiple sources (self, peer, teachers, parents). Self-reports of prosocial behavior and transgressive conduct correlated with assessments by these diverse methods and sources (Bandura et al., 1996b; Caprara & Pastorelli, 1993). These findings lend support to the reliability of self-reports of behavioral patterns.

Conceptions of the impact of positive and negative affect on human functioning are often framed in terms of direct effects. Positive affect promotes beneficial outcomes; negative affect breeds dysfunctional outcomes. However, the variability of behavioral effects requires further theoretical specification. Theories of affect regulation focus on factors that may mediate the relation between affect and behavioral outcomes (Gross, 1998; Larsen, 2000). As previously noted, beliefs in personal efficacy to regulate positive and negative affective states operate in concert with action-oriented efficacy beliefs on diverse forms of adaptation both concurrently and longitudinally.

Although control is more central to negative affect and expression is more central to positive affect in socializing emotion, effective social functioning requires discriminative regulation of expressions of affect. There are times and circumstances when expression of negative affect, such as indignation over unjust practices, has positive functional value and indiscriminate displays of positive affect are socially out of place.

The obtained structural pattern of influences verifies that complex human adaptations are governed by multiple forms of perceived efficacy

involving self-management of cognitive, motivational, and affective aspects of functioning operating in concert. The verified codetermining patterns of self-regulatory efficacy in the structural model vary for different forms of adaptation. The patterned multicausality further underscores the dynamic interplay of efficacy beliefs in the regulation of socioemotional functioning. Of particular interest are relations reflecting dynamic processes such as perceived empathic self-efficacy increasing vulnerability to depression but curtailing socially injurious aggression. Such findings underscore the explanatory and predictive value of a multifaceted, self-system perspective on personal dispositions. Multifaceted causality requires multidimensional assessment and structural analysis to disentangle direct and mediated paths of influence.

Emotional experiences are heavily embedded in interpersonal transactions. In maneuvering through emotionally arousing situations, people have to take charge of their inner emotional life and regulate their expressive behavior and strategically manage their modes of adaptation. Those who believe they can exercise some measure of control over their emotional life are more successful in their self-regulatory efforts than individuals who believe they are at the mercy of their emotional states (Bandura, 1997, 1999a; Sanderson, Rapee, & Barlow, 1989). Research has also shown that perceived self-regulatory efficacy mediates the effects of affective states on health and addictive behavior. The findings of the present research further corroborate the mediational function of different configurations of perceived action-oriented efficacy in diverse spheres of functioning. Explanatory and predictive generalizability affords theoretical utility.

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