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International Journal of Behavioral Development 2011 35: 449 originally published online 1 August 2011
DOI: 10.1177/0165025411406862
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Effects of early relationships on children’s perceived control: A longitudinal study

Orrie Dan,1 Abraham Sagı-Schwartz,2 Yair Bar-haim,3 and Yohanan Eshel2

Abstract
People’s response to stress depends to a large extent on their sense of perceived control over the situations they encounter. This longitudinal study of 136 children (70 girls) examined associations between attachment patterns and maternal sensitivity at 12 months of age, and perceived primary and secondary control at 11 years of age. Compared with children who were ambivalently attached in infancy, children who were securely attached reported a greater perceived primary control in general, and more primary control in interaction with their parents at 11 years of age. No such between-group difference in primary control tendencies was found in the context of reported interaction with peers. Higher maternal sensitivity in infancy was associated with higher perceived general primary control at 11 years of age. Lower maternal sensitivity was associated with higher perceived secondary control in children who were ambivalently attached to their mothers in infancy. The results are discussed within a theoretical framework linking early infant experience and the evolving personality characteristics of primary and secondary perceived control in older children and adolescents.

Keywords
attachment, coping, longitudinal, maternal sensitivity, primary and secondary control, Strange Situation procedure, stress

Introduction
Perceived sense of control is an important moderator of stress response (Connor-Smith & Compas, 2002; Jaser et al., 2007). Higher sense of perceived control has been shown to enhance psychological adjustment and well-being in HIV and cancer patients (Thompson, Nanni, & Levine, 1994; Thompson, Sobole-Shubin, Galbraith, Schwankovsky, & Cruzen, 1993; Weisz, McCabe, & Dennig, 1994), patients suffering from chronic health problems (Chipperfield, Perry, & Menec, 1999), and college students coping with academic and health stressors (Hall, Chipperfield, Perry, Ruthig, & Goetz, 2006). Similar findings were reported for children dealing with recurrent pain (Thomsen et al., 2002), and children with chronic diabetes (Band & Weisz, 1990). It has been suggested that perceived sense of control is shaped in the context of early infant–mother relationship (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). Insecurely attached infants may experience a reduced sense of control in the relationship with their primary caregiver due to the higher levels of stress experienced in such relationships. In contrast, securely attached infants come to trust their own efficacy in eliciting well-attuned parental behavior and develop a stronger sense of perceived control.

Attachment theory (Bowlby, 1969, 1973, 1980) assumes a biologically based system that promotes proximity with potential caregivers. It has been suggested that this behavioral attachment system developed through a process of natural selection in the context of evolutionary adaptedness. Specifically, it is assumed that the behavioral attachment system is triggered by distress, and that the system’s concerted output (e.g., cries, cuing, and other signals in the infant’s repertoire) motivates caregivers to approach the infant and to provide care and protection.

For most infants, this behavioral system is highly effective and, over time, they come to know their primary caregiver as a dependable source of comfort and security. Infants further learn to trust their own ability to invoke sensitive and reliable responses from significant others during times of distress. For some infants however, the natural tendency to attain proximity with their caregiver is upset by a history of rejection or inconsistent caregiving (Ainsworth, Blehar, Waters, & Wall, 1978; Egeland & Farber, 1984). As a result, these infants may need to adapt by changing their behavior and expectations, and may learn to promote their survival goals by distancing themselves from their caregiver when they are distressed, or by continuous proximity seeking in repeated but failed efforts to attain security (e.g., Cassidy, 1999; Marvin & Briner, 1999).

Through repeated experience with parental response to their attachment signals, infants and young children are said to develop internal working models of self, caregivers, and self in relation to others. Such internal representations are thought to affect the way children interpret social situations with family and peers later in life (Bowlby, 1973). The nature of the represented internal working models is thought to be significantly influenced by maternal sensitivity and responsiveness. In general, the findings indicate that
sensitive mothering is associated with the development of securely attached children, whereas caregiver insensitivity puts children at risk for the development of insecure attachment (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003).

Attachment-related internal working models influence the child’s expectations concerning their ability to impact their social milieu, including the type of behaviors that result in goal attainment and emotional stability (Mikulincer & Shaver, 2008). In this respect the conceptualization of primary and secondary perceived control, initially proposed by Rothbaum, Weisz, and Snyder (1982), appears to be particularly useful in delineating potential links between patterns of infant–caregiver relationships and the development of internal cognitive coping representations.

Rothbaum et al. (1982) suggested a distinction between two kinds of perceived control over psychological events—primary and secondary. Primary control pertains to the perception individuals have of their ability to influence existing realities and to shape their environment and bring it in line with their needs and wishes. Secondary control pertains to a tendency to reshape personal attitudes, wishes, and expectations in order to accommodate them to external circumstances (Morling & Evered, 2006; Weisz, Rothbaum, & Blackburn, 1984). Primary and secondary controls are typically conceptualized as perceived control rather than behavior or motivation for pursuing primary and secondary control goals (for a discussion of these conceptual differences see Heckhausen & Schulz, 1995), and may be used to define coping responses to stress (Compaś et al., 2001).

In this study we tested the hypothesis that the nature of early attachment relationship and maternal sensitivity in infancy may have bearings on later control tendencies. Specifically, we expected that securely attached infants, who come to trust their own efficacy in eliciting well-attuned parental behavior and who enjoy sensitive caregiving, would develop a stronger sense of primary control than insecurely attached infants. Securely attached infants learn through repeated experience with their attachment figures that their actions have reliable impact on the environment and would therefore develop a strong primary control tendency. Conversely, insecurely attached infants may experience a reduced sense of efficacy in eliciting sensitive parenting. These infants may learn that their actions do not elicit a sensitive response from their caregiver and would therefore develop a weaker tendency for primary control. The idea that secure children would be more likely to have higher perceived primary control is consistent with the more positive self-concept of these children (Cassidy, 1988; Jacobsen, Edelstein, & Hofmann, 1994), their higher self-efficacy (Coleman, 2003), and lower helplessness when faced with problem-solving tasks in the presence of their mothers (Colman & Thompson, 2002). Finally, a prediction may be made concerning the association between disorganized attachment and perceived control. If disorganized attachment reflects deficiencies in social and emotional adjustment in childhood (Bernier & Meins, 2008) then infants with a disorganized attachment pattern may display abnormalities in both primary and secondary control. The theoretical association between maternal sensitivity and attachment in infancy and secondary control tendencies later in life is more complex and does not seem to allow simple predictions as is the case with the attachment–primary control association. Three different hypotheses can be formulated. First, one might speculate that infants with insecure attachment, who experienced repeated failures in directly influencing their caregiving environment, will develop stronger secondary control tendencies relative to children who were securely attached, as an alternative to failure in primary control. Indeed, Heckhausen and Schulz (1995) suggested that secondary control often serves as a compensatory mechanism for failure in primary control (Haynes, Heckhausen, Chipperfield, Perry, & Newall, 2009). Second, one might anticipate that secure children would exhibit greater secondary control as part of their generally more adaptive social competence. According to this view, secure children are advantaged in both primary and secondary control, an advantage perhaps derived from the same prior experience of sensitive parental care. Finally, because secondary control could be viewed as having multifaceted developmental origins, many of which are likely to be independent of the early care experiences leading to secure or insecure attachment, it is also plausible that no differences in secondary control by attachment status will emerge. Due to this complexity, our analyses concerning secondary control should be viewed as exploratory in nature.

To study the associations between maternal sensitivity and attachment behavior in infancy and later perceived control, we assessed primary and secondary control in 11-year-old children whose attachment behavior in the Strange Situation procedure and their mother’s interpersonal sensitivity were documented in infancy (for details see Sagi, Koren-Karie, Gini, Ziv, & Joels, 2002).

Methods

Participants

The participants were drawn from an original pool of 758 children whose attachment classification was assessed at 12 months of age and their mothers’ sensitivity was assessed at 6 and 12 month of age as part of the Haifa Study of Early Child Care (for a detailed description of the original sample and recruitment procedures see Sagi et al., 2002). Briefly, the original sample has been recruited over a 1-year period from three hospitals in one of the three major urban areas in Israel. As such, it represents the larger urban Israeli population. As part of the national health care system in Israel, all mothers-to-be in the city metropolitan area are required to approach one of these three hospitals to deliver their babies, regardless of socioeconomic status (SES). Thus, the entire population of newborns in the metropolitan area was accessible during the course of the study. Inclusion criteria for recruitment required that mothers experienced a nonrisk pregnancy, and newborns had to be term, singleton, and healthy. The sample was carefully selected to reflect the full range of SES in the population of the greater Haifa metropolitan area.

Because the original study was conducted several years before the present study and was not originally designed as a long-term follow-up study, we were able to locate and contact only 212 families out of the original sample (see Bar-Haim, Dan, Eshel, & Sagi-Schwartz, 2007). Of these 212 families, 37 moved out of the greater Haifa area and were therefore not included in the present sample, and 39 families preferred not to participate. The final sample was comprised of 136 11-year-old children (M age = 11.5 years, SD = 0.39), of which 104 (49 males and 55 females) were classified as securely attached in infancy and 32 (17 males and 15 females) were classified as ambivalently attached in infancy. Importantly, the distribution of attachment classification and gender in the present sample is statistically indistinguishable from that of the original sample (Sagi et al., 2002). In addition, the SES of the participants included in the present study is equivalent to the SES of the original sample, p > 0.60.
**Measures**

**Infant attachment.** The Strange Situation procedure was administered to all participants according to standard procedure (Ainsworth et al., 1978). In this procedure, infant behavior during reunion with the mother after a couple of 3-minute separations is classified into three main attachment categories. Securely attached infants (A) may or may not be upset when their mothers leave but calm down rather quickly when their mothers return. These infants show minimal resistant or avoidant behaviors. Resistant/ambivalent infants (C) seek contact with their mothers but at the same time resist them. Some C infants are unable to settle down during the reunion episodes. Finally, avoidant infants (A) do not seek proximity or contact with their mothers upon reunion but show avoidant behavior instead.

In the present study we were unable to test hypotheses concerning the insecure avoidant group (A) due to the low incidence of this attachment category in the original sample (n = 20, 2.6%). Low incidence of avoidant attachment and high rates of ambivalent attachment in Israeli infants have been documented consistently in various samples (for reviews see Aviezer, van IJzendoorn, Sagi, & Schuengel, 1994; van IJzendoorn & Sagi-Schwartz, 2008). In addition we were unable to test hypotheses concerning disorganized (D) attachment because only five children in the present sample were classified D in infancy.

The last author trained three coders who rated the tapes. In addition, these three coders participated in training and workshop sessions with Prof. Mary Main. Lastly, an interlaboratory reliability has been established and maintained over the years with Marinus van IJzendoorn at Leiden University (the Netherlands). For the original sample, 15% of the cases were double coded in Haifa and Leiden. The range of interrater reliability for the ABC system was 82–94% agreement, M = 90%. Kappa value range = 0.74–0.90, all ps < 0.001. For full detail on procedure and reliability of coding see Sagi et al. (2002).

**Maternal sensitivity.** Maternal sensitivity scores were obtained from free-play episodes using the emotional availability (EA) scoring system (Biringen, Robinson, & Emde, 1993). The full details of these procedures appear in Sagi et al. (2002). Briefly, the Maternal Sensitivity Scale assesses mothers’ responsiveness to their children in terms of appropriateness, timing, and flexibility; the quality and appropriateness of the mothers’ affect; and the mothers’ negotiation of conflict situations. These variables are evaluated on 9-point scales (1 = lack of sensitivity, 9 = optimal sensitivity; Biringen et al., 1999). Rating was applied separately for observations conducted at 6 months and 12 months of age. Scores for each rating period were transformed into Z scores and the two sets of Z scores were combined as one aggregate of maternal sensitivity. Interobserver reliability was assessed with an agreement rate of 85%, $k = 0.83$, $p < 0.001$.

**Perceived General Primary and Secondary Control Questionnaire for Children (PGPSCQ-C).** This self-report measure (Appendix A) is comprised of 15 items grouped into two scales corresponding to Rothbaum et al.’s (1982) primary and secondary control model (Kurman & Dan, 2007). Participants rated each item on a 6-point scale (1 = strongly disagree, 6 = strongly agree). The general primary control scale consists of 5 items ($\alpha = 0.67$ for the current sample). The general secondary control scale consists of 10 items ($\alpha = 0.67$ for the current sample). Although Rothbaum et al. described various subtypes of secondary control tendencies (interpretive, predictive, vicarious, and illusory), for purposes of parsimony we aggregated these subitems into one secondary control index.

**The Primary and Secondary Control Questionnaire for Interpersonal Relationships (PSCQ-IR).** This questionnaire (Seginer, 1998) consists of vignettes describing interpersonal situations of conflict between a child and her or his parents or peers. For the present study, we selected four vignettes describing interpersonal parent–child situations and four vignettes describing interpersonal peer–child situations (for example see Appendix B). After reading each vignette, children rated on a Likert-type scale each of six possible reactions to the situation, which correspond to primary control, secondary control, and relinquished control (i.e., giving up an attempt to solve the problem). Four variables were used in further analyses: perceived primary control with peers and with parents and perceived secondary control with peers and with parents. For each child, the primary control scores (with parents and with peers) were computed as the mean of primary control scores in each of the four vignettes ($\alpha = 0.68$ and 0.55, respectively). The secondary control scores were computed as the mean of scores of secondary control across the vignettes ($\alpha = 0.75$ and 0.77, respectively).

**The Life Experience Questionnaire (LEQ).** The LEQ (Sagi et al., 2002) measures the occurrence of difficult life events, and was used in the present study to obtain some control over averse events that may have happened during the 10-year epoch between the attachment and perceived control assessments. The questionnaire consists of 75 items and is a combination of the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978) and the Psychiatric Epidemiology Research Interview (PERI) Life Events Scale (Levav, Krasnoff, & Dohrenwend, 1981). The questionnaire was adjusted to Israeli circumstances, and was administered to mothers, who were requested to check those events that had occurred during the period since their child was 12 months of age up until the interview, and rate the impact that the event had on their life on a 4-point scale, ranging from 1 (no impact) to 4 (high impact). A sum of scores of all marked items provided the final score of negative life events. Split-half reliability analysis in the current sample revealed strong internal consistency, Guttman’s split-half coefficient = 0.90, Chronbach’s $\alpha$ for the first and second halves of the questionnaire were 0.88 and 0.84, respectively.

**Procedure**

At 6 and 12 months maternal sensitivity was assessed during free-play episodes conducted at the Center for the Study of Child Development, University of Haifa. At the 12 months visit, infants were also seen in the standard Strange Situation procedure with their mothers. At 11 years of age, children and mothers were visited at home. During the home visit, each child completed the PGPSCQ-C and the PSCQ-IR, and mothers completed the LEQ. Additional measures collected in this home visit are described elsewhere (see Bar-Haim et al., 2007).

**Results**

**Attachment and perceived control**

**Data analyses.** To assess whether infant–mother attachment predicts individual differences in 11-year-olds’ perceived primary
Ambivalent and secondary control, three separate ANOVAs were conducted for the PGPSCQ-C, PSCQ-IR parents, and PSCQ-IR peers. Infant attachment classification (secure, ambivalent) served as the independent variable, and perceived control (primary, secondary) served as the outcome variable. Life events were entered to the analyses as a covariate. Significant interaction effects were clarified using post hoc contrasts. Variation in degrees of freedom in the different analyses is due to missing data for some of the participants on certain questionnaires.

**Perceived General Control: PGPSCQ-C.** Children who were securely attached in infancy reported greater general perceived control ($M = 4.12, SD = 0.58$) than children who were ambivalently attached in infancy ($M = 3.83, SD = 0.65$), $F(1, 135) = 4.62, p < 0.05$. In addition, all children reported greater perceived primary control ($M = 4.43, SD = 0.88$) than secondary control ($M = 3.64, SD = 0.83$), $F(1, 135) = 34.11, p < 0.0001$. These main effects were qualified by a significant Attachment Classification $\times$ Control interaction, $F(1, 135) = 4.33, p < 0.01$. Follow-up contrasts revealed that children who were securely attached in infancy reported greater use of primary control ($M = 4.60, SD = 0.87$) than children who were ambivalently attached ($M = 4.01, SD = 1.08$), $t(135) = 2.89, p < 0.01$, with no such difference in perceived secondary control (see Figure 1). No other main or interaction effects were found.

**Perceived control in interpersonal relationships:**

**PSCQ-IR.** All children reported greater use of primary control ($M = 3.35, SD = 0.66$) than secondary control ($M = 2.61, SD = 0.62$) in their interactions with their parents, $F(1, 131) = 68.80, p < 0.0001$. In addition, a nonsignificant trend toward Attachment Classification $\times$ Control Tendency interaction effect was found, $F(1, 131) = 3.04, p = 0.083$ (see Figure 2). Although nonsignificant, this trend interaction is consistent with the above-reported analyses of general perceived control (PPSCQ-C). We therefore followed up with contrasts revealing that children who were securely attached in infancy reported higher perceived primary control with their parents ($M = 3.48, SD = 0.63$) than children who were ambivalently attached ($M = 3.22, SD = 0.74$), $t(134) = 2.00, p < 0.05$, with no such difference for secondary control. No other main or interaction effects were found.

Finally, all children reported greater perceived primary control ($M = 3.40, SD = 0.74$) than secondary control ($M = 2.39, SD = 0.54$) in their interactions with peers, $F(1, 131) = 83.32, p < 0.0001$. No other main or interaction effects were found.

**Maternal sensitivity and perceived control**

Associations between maternal sensitivity in the first year of life and perceived control at age 11 years were assessed using partial correlations with negative life events as the controlled variable. Higher maternal sensitivity in infancy was associated with higher perceived general primary control on the PGPSCQ-C, $r(136) = 0.18, p < 0.05$, and lower maternal sensitivity in infancy showed tendency for higher perceived general secondary control on the PGPSCQ-C, $r(136) = -0.11, p = 0.09$. No other correlations reached statistical significance. To test whether this correlation pattern is similar in children who were securely and ambivalently attached in infancy, correlations were computed for these two groups separately. These analyses show that higher maternal sensitivity in infancy was associated with higher perceived general primary control in both groups, $r_{s} = 0.15$ and 0.14 in the secure and ambivalent groups, respectively. However, due to smaller $n$s these correlations failed to reach statistical significance $ps < 0.06$ and 0.23, respectively. Interestingly, in the ambivalent group, lower maternal sensitivity was associated with higher perceived secondary control, $r(32) = -0.33, p < 0.05$. No such correlation was found for the secure group, $r(104) = -0.08, p > 0.20$.

**Prediction of perceived control by attachment and maternal sensitivity**

To assess the relative contribution of attachment classification and maternal sensitivity in infancy to perceived control tendencies at age 11 years, six stepwise regression analyses were computed. Maternal sensitivity, attachment classification (dummy variable), and the interaction term between maternal sensitivity and attachment classification were entered as predictors of the different control tendencies variables (general primary and secondary control, primary and secondary control with parents, and friends). Nine percent of the variance in general primary control (PGPSCQ-C) was predicted by the interaction between attachment classification and maternal sensitivity, $\beta = 0.30, p < 0.0001$, $F(1, 133) = 12.86, p < 0.0001$. Higher maternal sensitivity in securely attached infants predicted higher general primary control at 11
years. Primary control with parents (PSCQ-IR) was predicted by attachment classification alone, $\beta = 0.17, p < 0.05$, $F(1,133) = 4.02, p < 0.05$, accounting for 2.9% of the variance in primary control with parents. The regression models for primary control with friends and for all the secondary control measures were nonsignificant.

**Discussion**

Describing meaningful longitudinal associations between maternal sensitivity and attachment patterns in infancy on the one hand, and perceived control in middle childhood on the other hand, provides a novel bridge between developmental and personality research. Specifically, the purpose of the present study was to assess whether perceived primary and secondary control (Rothbaum et al., 1982) at 11 years of age may be predicted by patterns of mother–child interaction in infancy as measured by maternal sensitivity and Ainsworth’s Strange Situation procedure.

As predicted, 11-year-old children who were securely attached as infants reported a greater tendency for perceived primary control than children who were ambivalently attached. This association was found on the general index of perceived control and to an extent also in the context of children’s interactions with their parents. Furthermore, attachment classification interacted with maternal sensitivity to account for a small but significant portion of the variance in general primary control.

These longitudinal findings lend support to the notion that secure attachment and the sense of efficacy in influencing significant others to provide sensitive care in infancy may contribute to the development of children’s more general sense that they possess the ability to influence existing realities and shape them in accord with their needs and goals. As such, primary control tendencies may be construed as one aspect of Bowlby’s suggested internal working models designed to regulate interpersonal and intrapersonal events.

The present longitudinal data suggest that perceived primary control, which has been associated with active attempts at coping and influencing the environment (Band & Weisz, 1990), may serve as an important factor contributing to better functioning in securely attached children (Grossmann, Grossmann, Kindler, & Zimmermann, 2008). Specifically, children who develop a strong tendency for perceived primary control through repeated elicitation of well-attuned and sensitive responses from their primary attachment figures learn that they can influence their caregiver to behave in concert with their personal goals and needs. Such perceived primary control may help secure children to be more daring and at the same time confident, hence more successful (Loman & Gunnar, 2010).

In contrast with the associations between primary control as a global tendency and in the context of parent–child interactions, primary control tendencies with peers were not associated with attachment classification in infancy. It may be the case that the association between primary control and attachment is specific to representations of the self and of the self in relation to the primary attachment figures. Indeed, during the early years of life, for most children these representations develop within the context of the nuclear family (Bowlby, 1965; Bronfenbrenner, 1986). However, children quickly come to realize that their goals and wishes will not always meet the same fate in the more complex and more variable context of peer relationships. Interactions with peers are typically characterized by rapid changes in group dynamics and high diversity of interactive styles. Thus, it appears that the association between early parent–child relationships and later perceived control is not readily generalized to the world of peer relationships.

No attachment-related group differences were found with regard to secondary control tendencies. This finding is supportive of the view that the development of secondary control tendencies is not necessarily related to upsets in primary control development.

Another prediction was that maternal sensitivity will be associated with perceived primary control. Results showed that higher maternal sensitivity in infancy is associated with higher general perceived primary control at 11 years. This association was found only on the general index of perceived control. Similar patterns of associations between early maternal sensitivity and general perceived primary control was found when computed separately for children who were securely and ambivalently attached in infancy. These longitudinal findings may be taken to suggest that maternal sensitivity has longitudinal influences on later development, indicating that early maternal warmth and sensitivity plays a critical role in predicting aspects of children’s self-regulation later in life (Eiden, Colder, Edwards, & Leonard, 2009).

Maternal sensitivity within the group of children who were ambivalently attached in infancy showed negative association with perceived secondary control. As such, it seems that children who developed ambivalent attachment in infancy and had poor maternal sensitivity also developed higher reliance on perceived secondary control. No such relations were found within the securely attached group. These results suggest that children who had poor early maternal sensitivity and developed ambivalent attachment developed a tendency for perceiving themselves as needing to accommodate to their environment, whereas those who had good maternal sensitivity in infancy develop tendency for perceiving their ability to change the environment in order to fulfill their needs and wishes. These findings are also in agreement with the finding that adverse caregiving increases stress reactivity (Loman & Gunnar, 2010). Past research has demonstrated that stress reactivity and coping mechanisms can be expressed by primary and secondary control responses (Compas et al., 2001). However, this idea must be followed by more research before further conclusions can be drawn.

The present study also shows that children displayed higher levels of primary control tendencies relative to secondary control tendencies. Previous studies have consistently shown cross-cultural differences in primary and secondary control dominance. For instance, Trommsdorff and Essau (1998) reported that adolescents living in collectivistic cultures (Malaysia and Japan) scored higher on secondary control and lower on primary control relative to adolescents living in individualistic cultures (Canada, USA, and Germany). Similar differences in control tendencies were found when the control tendencies of young adults from the USA were contrasted with those of young adults from Indonesia, Japan, and Korea (Oerter, Oerter, Agostiani, Kim, & Wibowo, 1996), and when comparing the control tendencies of Asians and Caucasians living in the USA (Lam & Zane, 2004). In line with these cultural findings we observed that 11-year-old children in Israel (a predominantly individualistic culture) also display higher levels of primary control tendencies relative to secondary control tendencies.

The present study should be viewed in light of several limitations. First, although the findings reveal significant associations between maternal sensitivity, attachment, and primary control tendencies over a 10-year period from infancy to middle childhood, we did not find associations between attachment in infancy and primary control in the context of peer relationships; neither had we
found associations between attachment and secondary control. While we propose a plausible developmental explanation for this pattern of results, we fully acknowledge that the limited continuity between early attachment and later control tendencies may be due to myriad mediation and moderation effects that were not tested in the present study. While this should be considered as a limitation of our results, we have made an attempt at controlling the effect of negative life events, which showed that these were not associated with the significant links we found between early attachment and later primary control. Second, current caregiving experiences were not measured in the present study. It is therefore possible that the continuous supportive presence of the parent is in fact associated with more perceived primary control in adolescence rather than the impact of early attachment relationships. Future studies should consider measuring the concurrent quality of mother–child relationship. Third, an unavoidable limitation of the present study is the absence of an avoidant attachment category in Israeli samples. This limitation may be overcome by replication studies conducted in cultures that have a larger representation of this attachment category in their population. We predict that children with avoidant attachment may have experienced consistent disappointments in trying to influence their attachment figures to act in accord with their goals and needs, and thus would develop coping tendencies that emphasize not relying on others. Therefore, it is reasonable to expect that avoidantly attached infants would develop stronger tendencies for secondary control relative to secure and ambivalent infants. Furthermore, future studies of the associations between attachment in infancy and later control tendencies conducted in collectivistic cultures may reveal stronger associations between attachment and secondary control tendencies than those described in the present study.

In conclusion, our data offers a unique linking mechanism between early maternal sensitivity and attachment relationships and later internal representations of control tendencies, which are linked to stress and coping mechanisms. More cross-cultural longitudinal research is needed in order to shed further light on the exact mechanisms involved in this association and on the potential mediators and moderators of this important association.

Note
1. Exploratory analyses of the associations between attachment classification and the different subtypes of secondary control reveal nonsignificant findings.

References


Weisz, J. R., Rothbaum, P. M., & Blackburn, T. C. (1984). Standing out at The Max Stern Academic College of Emek Yezreel on September 14, 2011 jbd.sagepub.com Downloaded from jbd.sagepub.com at The Max Stern Academic College of Emek Yezreel on September 14, 2011
Appendix A.
Perceived General Primary and Secondary Control Questionnaire for Children (PGPSCQ-C)

Primary control items
- When my friends think differently than me, I will convince them that I am right
- In most cases, if I deserve something, I persist until I get it
- I insist on my right to explain what I want, until the others will understand me
- I like convincing people
- When I don’t agree with others, I will try to convince them that I am right

Secondary control items
- When I am near important people it makes me feel good
- I am trying to anticipate the future, so as not to be surprised
- Even when I can’t change a bad situation, I can find good things in it and feel better
- Being friends with older children makes me self-confident
- I am usually busy planning what I will do in the near future
- When I think that I am similar to other, successful, children I think that I am also successful
- When I hear bad news I always try to find good news hidden in it
- When I have problems I think it is bad luck
- When I have problems I ask god to help me
- I try to figure out what others plan to do so I will not be surprised

Appendix B.
Primary and Secondary Control Questionnaire for Interpersonal Relationships (for boys): PSCQ-IR

Vignette: “You feel that your best friend is getting distant. He does not call you, and during recess time at school he does not talk to you. How would you react?”

- I will try to do something to change the situation, so that I will feel better (primary control)
- I will tell myself that in every bad situation there is some good, and figure out what that is for me (secondary interpretive control)
- I will be worried, because it is important to me to be one of the guys (secondary vicarious control)
- This is my luck, and I will accept the situation as it is (secondary illusory control)
- I thought that something like that might happen, and so I did not get very disappointed (secondary predictive control)
- There is nothing to do in this matter (relinquish control)