Self-protective Optimism: Children’s Biased Beliefs about the Stability of Traits

Gil Diesendruck and Tali Lindenbaum, Department of Psychology and Gonda Brain Research Center, Bar-Ilan University, Israel

Abstract

Studies indicate that children believe that positive behaviors are more likely than negative ones to remain stable across time and situations. The present study assessed whether children hold such optimism equally regarding their own vs. others’ behavioral patterns. Thirty-five-year-olds answered questions about the extent to which they viewed themselves as having various positively, neutrally, and negatively valued behavioral patterns. An experimenter then asked children about the extent to which behavioral patterns that children thought they had would remain stable in themselves and in others, and the extent to which behavioral patterns that they did not think they had would remain stable in others. We found that children gave higher stability ratings for positive behaviors in themselves than in others, and the opposite regarding negative behaviors. This self-protective optimism is discussed vis-à-vis the relationship between children’s beliefs about traits and their behaviors and motivations.

Keywords: traits; stability; optimism; self; kindergarten children

Introduction

Adults commonly interpret and predict other people’s behaviors based on indications or knowledge of people’s personality dispositions (Heider, 1958). That is, adults—at least in western cultures—often categorize people according to temporally and situationally stable personality traits (Markus & Kitayama, 1991). People who are nice tend to behave in kind ways, and people who are shy tend to stay away from public appearances. As in all acts of categorization, classifying people by traits is economic because it provides us with ready-made predictions and inferences. Nonetheless, such categorization somewhat fixates beliefs, leaving little room to consider flexible interpretations of particular individuals.

Developmental researchers have been particularly preoccupied with this latter aspect of trait-concepts. As a growing literature reveals, the extent to which children conceive of personality traits as stable and immutable characteristics of oneself or others has important effects on the beliefs, behaviors, and motivations children entertain (Rholes, Newman, & Ruble, 1990). For instance, the extent to which children view prosocial behavior as emanating from a stable trait has been shown to affect their own tendency to
act prosocially (Eisenberg, Cialdini, McCreath, & Shell, 1987; Grusec & Redler, 1980), and children’s view of aggressiveness as stable affects their willingness to interact with people who act aggressively (Giles & Heyman, 2003). Furthermore, children’s beliefs about the stability of social and academic skills in others are related to children’s social preferences (Droege & Stipek, 1993), and children’s understanding of intellectual or sociomoral characteristics as immutable influences their interpretations of academic or social success and failure, and consequently, their beliefs about the importance of effort to achieve success (Heyman & Dweck, 1998; Heyman, Dweck, & Cain, 1992). In general, Dweck and her colleagues have emphasized the distinction between holders of an entity vs. an incremental view of traits (Dweck & Leggett, 1988). Compared with an incremental view, an entity view of traits as fixed qualities leads to stereotyping, helplessness, and overgeneralization of behavioral patterns (see, for instance, Erdley, Cain, Loomis, Dumas-Hines, & Dweck, 1997; Levy & Dweck, 1999).

Given the importance of this conceptual distinction for children’s daily lives, a number of studies have investigated at what age children develop beliefs about the stability of traits and what factors affect these beliefs. The findings show that by five to six years of age, children already expect people to continue to behave in trait-relevant ways (see Rholes et al., 1990, for a review) and understand traits not only in terms of their behavioral outcomes but more deeply in terms of underlying motives (Heyman & Gelman, 1998; Yuill, 1992). Recent findings show, however, that this tendency to believe that trait-relevant behaviors will remain stable across time and situations is affected by the valence of the traits (Alvarez, Ruble, & Bolger, 2001; Heyman & Giles, 2004). That is, kindergarten children seem to believe that while positive traits (e.g., niceness) will remain stable across time, negative traits (e.g., meanness) might change for the better—a conceptual bias that Lockhart, Chang, and Story (2002) dubbed ‘protective optimism’. These findings on protective optimism intimate a potential distinction between the implications of positive and negative traits to children’s behaviors and motivation. Specifically, positive traits, in general, might be more prone than negative traits to the behavioral and motivational implications of an entity view described above.

This main effect of valence notwithstanding, a potentially crucial element under-examined in previous studies is the degree to which the traits being evaluated pertain to the self or to others. Most studies on five- to eight-year-olds’ beliefs about the stability of traits (Alvarez et al., 2001; Droege & Stipek, 1993; Lockhart et al., 2002; Rholes & Ruble, 1984), and about the relation between these beliefs and children’s behaviors or attitudes (e.g., Giles & Heyman, 2003; Heyman & Dweck, 1998; Heyman et al., 1992), have assessed the beliefs about the stability of others’ traits, not of traits belonging to the children themselves. Yet the conclusions from all these studies were framed in terms of how children’s beliefs affect their own motivations and behaviors. We believe that in order to draw conclusions about how children’s beliefs affect their behaviors and motivations (e.g., feelings of helplessness, willingness to put in effort, depression), it is important to assess children’s beliefs about the stability of their own traits (see Rholes et al., 1990, for a similar recommendation).

There is a vast literature in social psychology speaking of a self-enhancement bias, namely that adults tend to view themselves more favorably compared with how they view others (e.g., Krueger, 1998; Kwan, John, Kenny, Bond, & Robins, 2004; Sedikides, Gaertner, & Toguchi, 2003). There are also studies showing that adults are more optimistic about the long-term stability of positive outcomes regarding themselves than regarding others both in terms of specific outcomes (Regan, Snyder, & Kassin, 1995; Weinstein, 1980) as well as in terms of general traits (Heckhausen & Krueger, 1993;
Martini & Dion, 2001). These social psychological studies argue that to a large extent, a self-enhancement bias has a motivational source (e.g., Krueger, 1998). In particular, the argument is that by comparing oneself positively to others, people can enhance their self-esteem. In fact, this consequence of such a comparative bias might explain the positive relationship between having such a bias and measures of adjustment (Kwan et al., 2004).

An interesting developmental implication of this argument is that as measures of adjustment vary with age, so might the type of bias manifested by people. Indeed, Heckhausen and Krueger (1993) found that at different ages, adults manifest a favorable bias toward the self in relation to different aspects of the self (see also Martini & Dion, 2001). Specifically, they found that older adults were more prone than younger ones to have an optimistic bias regarding the stability of their own vs. others’ traits. Heckhausen and Krueger interpreted this age effect as resulting from older adults’ stronger sensitivity to their developmental status. Namely, they suggested that in the face of the threat of age-related losses, older adults might develop a belief that others will suffer more deterioration in positive traits and will also accumulate more negative traits than they will.

In light of these theoretical explanations for a self-enhancement bias in adults, emphasizing its developmental and motivational components, we were interested in investigating this phenomenon in young children. We targeted five- to six-year-olds because at this age they are developing notions of stable traits (see Rholes et al., 1990 for a review) and are coming to grips with a deep understanding of others that will allow them sophisticated social comparisons (see Dunn, 2000; Hughes, 2004). In other words, to the extent that this bias results from unique developmental challenges affecting one’s adjustment, we would expect to see such a bias already at this young age.

A few studies reveal that indeed, children too manifest a self-enhancement bias, evaluating their abilities more highly than those of others (Ruble, Eisenberg, & Higgins, 1994; Schuster, Ruble, & Weinert, 1998; Stipek, Roberts, & Sanborn, 1984). These studies reveal that the bias seems to be manifested already by the age of four years (Stipek et al., 1984), and might be more specific (Ruble et al., 1994) and stronger (Schuster et al., 1998) among younger children (five- to eight-year olds) than older ones (10-year-olds and up). In fact, some of these studies and others have also asked children questions about the stability of traits in themselves vs. in others (e.g., Rotenberg, 1982; Schuster et al., 1998; Stipek et al., 1984). These studies found that children believed that positive traits (e.g., kindness, intellectual ability) would be more stable in themselves than in others, a bias in this case that increased with age (Rotenberg, 1982). In these studies, however, it was the experimenter who attributed the traits to the children, not the children themselves. For instance, in Schuster et al.’s (1998) ‘other’ condition, children heard a story about a character who was good at playing a made-up game and were then asked whether the character would succeed at it in the future. In the ‘self’ condition, children heard the same story, but the experimenter replaced the character’s name with the pronoun ‘you’. That is, none of the studies attempted to establish children’s own sense of self and then to verify children’s beliefs about the stability of traits with which they identified. Furthermore, none of the studies systematically investigated the potential interaction between children’s attribution of specific traits to themselves and the valence of the traits. The goal of the present study was to examine this interaction.

In this study, adopting a questionnaire developed by Eder (1990), we first evaluated children’s self-attribution of various trait-related behavioral patterns of positive,
neutral, or negative valence. In subsequent meetings, we then asked children about the cross-temporal and situational stability of behavioral patterns in three different conditions. In the Self/Self condition, children were asked about the stability in *themselves* of behaviors that they had attributed to *themselves*. In the Other/Self condition, children were asked about the stability in *others* of the same behaviors that they had attributed to *themselves*. Finally, in the Other/Not-self condition, children were asked about the stability in *others* of behaviors that they had not attributed to *themselves*.

We hypothesized that if children possess a self-enhancement bias about the stability of traits, then they should respond that positive traits would be more stable across time and situations in themselves than in others whereas the opposite would be the case for negative traits. The inclusion of both Other/Self and Other/Not-self conditions would allow us to analyze the importance of self-identification with the traits in children’s stability inferences. In particular, it would allow us to examine whether children have a general bias to believe that traits that they have are more stable than traits that they do not have, perhaps because they might value the former more highly than the latter (see Lockhart et al., 2002, for a similar suggestion).

**Method**

**Participants**

Participants in the main experiment were 30 Jewish, Hebrew-speaking Israeli kindergarten-aged children, 19 boys and 11 girls (\(M = 5\) years 7 months, range = 5 years 0 months to 6 years 3 months). Children were secular Jews from various socioeconomic and cultural backgrounds. Children were recruited from a typical public kindergarten of a mid-size city in Israel. Only children with signed parental consent participated. Over 80 percent of the children in the kindergarten participated. Ten undergraduate students and 14 kindergarten-aged children, 9 boys and 5 girls (\(M = 6\) years 0 months, range = 5 years 5 months to 6 years 1 month), with similar backgrounds to the ones participating in the main experiment, provided valence ratings of the trait-relevant behaviors. Undergraduates volunteered to participate. Children ‘raters’ were recruited in the same way the main sample of children was recruited.

**Design**

The study consisted of three individual meetings with each child. The meetings took place a week apart one from the other. In the first meeting, children answered the behavior-self-attribution questionnaire. Children’s answers to this questionnaire were analyzed and used to develop individual behavior-stability questionnaires for each child. In the second and third meetings, children answered the behavior-stability questionnaire, each time for different trait-relevant behaviors. In both the second and third meetings, all children answered questions about the stability of behaviors that they had attributed to themselves with regard to themselves, about the stability of behaviors that they had attributed to themselves with regard to others, and about the stability of behaviors that they had not attributed to themselves with regard to others.

**Materials**

**Behavior-self-attribution Questionnaire.** The questionnaire was based on Eder’s (1990) questionnaire but included a number of other trait-relevant behaviors
commonly used in the literature. The questionnaire comprised 44 pairs of one-sentence statements, each pair consisting of opposites of a behavior representative of a personality dimension (i.e., the poles of the behaviors were representative of opposite traits). Altogether there were 11 personality dimensions represented, each by four pairs of statements.

Based on earlier studies (e.g., Alvarez et al., 2001; Heyman & Giles, 2004), of the 11 dimensions represented, 4 were presumed to be neutral in terms of their valence. They were composed of statements consistent with the following opposing traits: ‘spontaneous/controlled’, ‘extroversion/introversion’, ‘active/quiet’, and ‘sociable/loner’. The seven other dimensions were presumed to be positive or negative in terms of their valence. They were: ‘high/low achievement-oriented’, ‘peaceful/aggressive’, ‘serene/anxious’, ‘compliant/rebellious’, ‘high/low well-being’, ‘intelligent/unintelligent’, and ‘generous/selfish’.

In order to verify the classification of the dimensions into ones with valence and neutral ones, 10 undergraduate students and 14 kindergarteners provided valence ratings of the behavioral patterns listed in the behavior-self-attribution questionnaire. The wording used in the valence ratings was based on previously published studies on this issue (e.g., Alvarez et al., 2001; Giles & Heyman, 2004). The undergraduates were given a list of the 22 blocks of 4 behavioral patterns each (representing the 22 different traits). Students were asked to evaluate how good or bad the four behaviors listed within each trait-relevant block were, on a scale from ‘very bad’ to ‘very good’. The order of presentation of the traits within the list was quasi-random. The only constraint was that it was never the case that more than two traits of presumably similar valence appeared consecutively.

Children raters were tested individually in a quiet area of their kindergarten. The experimenter told the children that she would describe to them the behaviors of various children and would then ask them if they thought the way that a child behaved in the story was ‘very good’, ‘good’, ‘neither good nor bad, just ok’, ‘bad’, or ‘very bad’. For instance, the experimenter said, ‘I know a boy who acts like this: he thinks he is smart, he remembers a lot of things, he knows how to solve problems, and he knows a lot of things. Do you think that these things that he does are, very good, good, ok, bad, or very bad?’ In order not to impose too much on the child, each child rater was presented with half of the list that adult raters were given. Thus, seven children provided ratings on half of the traits and the other seven children on the other half. The order of presentation of the traits was similar to the one used with adults.

Data from the adults’ and children’s ratings were analyzed in two different ways. Firstly, we conducted a repeated-measures ANOVA, in which age group (adults, children) was entered as a between-subjects variable and trait valence (positive, neutral, negative) as a within-subjects variable. The dependent measure in this analysis was the mean rating of each trait, such that a score of 5 meant ‘very good’ and 1 ‘very bad’. As expected, there was a significant effect of trait valence, $F(2, 21) = 124.04, p < .001$, such that participants rated positive traits ($M = 3.97, SD = .42$) as significantly ‘better’ than neutral ($M = 3.08, SD = 0.43$) and negative traits ($M = 2.13, SD = .51$), and rated neutral traits as significantly better than negative traits ($ps < .001$ in all pair-wise comparisons). The ANOVA also revealed no significant effect of age group and no interaction between age group and trait valence, $ps > .5$. In other words, both adults and children raters confirmed the group classification of traits in terms of valence.

Next, we calculated the absolute difference in the ratings of opposite traits in each dimension, averaged these ‘difference scores’ for dimensions with valence and for
those that were neutral, and verified whether in dimensions presumed to have valence indeed the difference in ratings of opposite traits was larger than the difference in dimensions presumed to be neutral (e.g., whether the difference in rating of ‘generous’ vs. ‘stingy’ was larger than the difference in rating of ‘active’ vs. ‘passive’). A repeated-measures ANOVA on this measure, in which age group (adults, children) was entered as a between-subjects variable and dimension type (valence, neutral) as a within-subjects variable, revealed a significant effect of dimension type, $F(1, 15) = 18.99, p < .005$, such that the average difference in ratings in dimensions with valence ($M = 1.93, SD = .46$) was larger than that in neutral dimensions ($M = 1.12, SD = .58$). In fact, as can be seen in Table 1, the difference scores in each of the seven dimensions with valence were larger than the difference scores in each of the four neutral dimensions. Neither the effect of age nor the interaction between age and dimension type were significant, $ps > .1$. In sum, leaving aside possible differences in the ratings of individual dimensions, both adults and children confirmed that in dimensions presumed to have valence, indeed the difference in value between opposite traits was larger than that in dimensions presumed to be neutral. It seems, nonetheless, that even the neutral dimensions were not completely devoid of value. This was especially the case for the dimension of sociable/loner and spontaneous/controlled, a point to which we return when discussing the findings.

In the behavior-self-attribution questionnaire, the statements in each pair were expressed by two different hand puppets, and after hearing them, the child was asked which of the puppets was more like him/her. For instance, regarding the pair ‘aggressive/peaceful’, one puppet would say ‘I curse a lot’ whereas the other puppet would say ‘I usually don’t curse’. About the dimension ‘introversion/extroversion’, one puppet would say ‘I like it when others look at me’ and the other would say ‘I don’t like it when others look at me’. Further examples of statements are provided in Table 1. It is important to note that the questionnaire did not include any trait-terms. In order to maximize the likelihood of children identifying with the puppets, the gender of both puppets—recognizable only by various linguistic markers in the Hebrew sentences—matched the participants’ gender.

The order of presentation of the dimensions in the behavior-self-attribution questionnaire was randomized across children. For each dimension, the four pairs of statements were presented in sequence, but in a random order across children. The order of presentation of the statements in each pair was also counterbalanced within children. For instance, in positive or negative dimensions, for each child, in two of the four pairs the first statement mentioned was a positive one (e.g., about aggression, ‘I usually don’t curse’) whereas in the other two it was negative (e.g., ‘when I want something, I take it away by force’). Finally, although each puppet was consistent within a single dimension for a given child (e.g., for participant 1, Puppet A was either aggressive or peaceful on the four statements having to do with aggressiveness), their ‘valence’ switched within children across dimensions (e.g., for a given participant, the ‘aggressive’ puppet could be the ‘intelligent’ one) and between children for the same dimensions (e.g., for participant 2, Puppet A was the opposite of what he or she was for participant 1 in terms of aggressiveness).

This questionnaire was used to select two positive, two negative, and two neutral traits that each child attributed to himself or herself, and two positive, two negative, and two neutral traits that each child did not attribute to himself or herself. We set as a criterion for self-attribution of a trait, selection of a puppet in response to three or four of the statements on any given dimension. Dimensions in which a child selected one
Table 1. Examples of Statements in the Behavior Self-attribution Questionnaire and Valence Difference for Each Dimension

<table>
<thead>
<tr>
<th>Dimension name</th>
<th>Positive pole</th>
<th>Negative pole</th>
<th>Mean valence difference ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous/controlled</td>
<td>1-I do things without planning them ahead of time</td>
<td>1-I plan things before I do them</td>
<td>1.35 (1.11)</td>
</tr>
<tr>
<td></td>
<td>2-When I color, I don’t try to stay inside the lines</td>
<td>2-When I color, I try to stay inside the lines</td>
<td></td>
</tr>
<tr>
<td>Extroversion/introversion</td>
<td>1-I like it when others look at me</td>
<td>1-I don’t like it when others look at me</td>
<td>.71 (.77)</td>
</tr>
<tr>
<td></td>
<td>2-I like singing in front of others</td>
<td>2-I don’t like singing in front of others</td>
<td></td>
</tr>
<tr>
<td>Active/quiet</td>
<td>1-I prefer running around than sitting</td>
<td>1-I prefer sitting than running around</td>
<td>.94 (.97)</td>
</tr>
<tr>
<td></td>
<td>2-I like playing with lots of different games</td>
<td>2-I like playing with a few games</td>
<td></td>
</tr>
<tr>
<td>Sociable/loner</td>
<td>1-I like being with other people</td>
<td>1-I like being by myself</td>
<td>1.47 (1.12)</td>
</tr>
<tr>
<td></td>
<td>2-I like meeting new friends</td>
<td>2-I don’t like meeting new friends</td>
<td></td>
</tr>
<tr>
<td>High/low achievement oriented</td>
<td>1-I like doing hard tasks</td>
<td>1-I like doing easy tasks</td>
<td>1.77 (.83)</td>
</tr>
<tr>
<td></td>
<td>2-It is very important for me to be successful in what I do</td>
<td>2-It is not so important for me to be successful in what I do</td>
<td></td>
</tr>
<tr>
<td>Peaceful/aggressive</td>
<td>1-When I want something, I ask for it</td>
<td>1-When I want something, I take it away by force</td>
<td>2.12 (1.05)</td>
</tr>
<tr>
<td></td>
<td>2-I usually don’t curse</td>
<td>2-I curse a lot</td>
<td></td>
</tr>
<tr>
<td>Serene/anxious</td>
<td>1-I don’t get nervous easily</td>
<td>1-I get nervous easily</td>
<td>1.71 (1.21)</td>
</tr>
<tr>
<td></td>
<td>2-I usually don’t get scared or afraid</td>
<td>2-I get scared or afraid a lot</td>
<td></td>
</tr>
<tr>
<td>Compliant/rebellious</td>
<td>1-I try to be polite</td>
<td>1-I don’t try to be polite</td>
<td>1.71 (1.31)</td>
</tr>
<tr>
<td></td>
<td>2-I do what I’m told</td>
<td>2-I don’t always do what I’m told</td>
<td></td>
</tr>
<tr>
<td>High/low well-being</td>
<td>1-I like myself</td>
<td>1-I don’t like myself that much</td>
<td>2.06 (1.30)</td>
</tr>
<tr>
<td></td>
<td>2-I’m usually happy</td>
<td>2-I’m usually not happy</td>
<td>1.65 (.61)</td>
</tr>
<tr>
<td>Intelligent/unintelligent</td>
<td>1-I think I’m smart</td>
<td>1-I think I’m not that smart</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-I know a lot of things</td>
<td>2-I don’t know a lot of things</td>
<td></td>
</tr>
<tr>
<td>Generous/selfish</td>
<td>1-I like helping</td>
<td>1-I don’t like helping that much</td>
<td>2.53 (1.18)</td>
</tr>
<tr>
<td></td>
<td>2-I let other kids play with my toys</td>
<td>2-I don’t let other kids play with my toys</td>
<td></td>
</tr>
</tbody>
</table>

Note: 1 = the first four dimensions were neutral; the latter seven were valence-laden. 2 = the poles were positive or negative only for the valence-laden dimensions. For the neutral dimensions the statements simply represented opposites.
puppet in response to two of the statements and the other puppet in response to the other two statements were considered dimensions in which the child did not attribute any of the two opposite traits to himself or herself. Given that the order of presentation of the dimensions was random across participants, we used as the main criterion to select a child’s set of self-attributed traits the first dimensions in which children selected one of the puppets in response to the four statements (i.e., attributed to themselves all the behaviors consistent with a trait). For dimensions in which children did not manifest such a level of consistency, we included in the child’s set the first dimensions in which the child was consistent on three of the four statements.

Behavior-stability Questionnaire. The questionnaire was inspired by the work of Heyman and colleagues regarding the stability of trait-relevant behaviors (e.g., Giles & Heyman, 2003). This questionnaire was tailored to each participant based on his/her responses to the behavior-self-attribution questionnaire, as explained above. Regarding each trait, children were asked a series of four questions about the stability across time and situations of the trait-relevant behaviors presented in the behavior-self-attribution questionnaire. One question of each type had to do with proximal events (in time, e.g., ‘in a week’, or space, e.g., ‘at the park’) and another question of each type had to do with distal events (in time, e.g., ‘when he grows up’, or space, e.g., ‘in a different country’). To keep the child’s attention, the stability questions varied slightly in terms of their specific content. For instance, questions about stability across time had to do with whether the subject would behave in a given way ‘in a week’, ‘next year’, ‘when he/she is 9’, ‘when he/she is grown up’, etc. Questions about stability across situations had to do with whether the subject would behave in a given way ‘at the park’, ‘at his/her grandparents’ house’, ‘in a different country’, etc. As a specific example, about ‘extroversion’, a situational stability question was: ‘X likes being with other people, do you think she will like being with other people when she is in a different city?’ a temporal stability question was: ‘X likes to hug people, do you think she will like to hug people in three years?’ In order to avoid a ‘yes’ bias, for each participant, half of the stability questions were asked in an affirmative frame, as illustrated above, and half in a negative frame (e.g., ‘X likes to hug people, do you think she will stop liking to hug people in three years?’). The order of presentation of the stability questions on each trait, and whether they were presented in an affirmative or negative frame, was counterbalanced within and between participants.

The main manipulation of the study was implemented in this questionnaire. Namely, there were three conditions of questions, each involving a different combination of traits and the subject whose behavioral stability children had to evaluate. One condition—the Self/Self condition—involved questions about behaviors that children had attributed to themselves, and the subject in the questions was the child himself or herself. For instance, the experimenter would tell children: ‘Remember that last week you told me that it is important for you to succeed in everything you do? Do you think that when you are in first grade, it will be important for you to succeed in everything you do?’ A second condition—the Other/Self condition—involved questions about behaviors that children had attributed to themselves, but the subject in the questions was another unfamiliar child. For instance, the experimenter would tell children: ‘Remember that last week you told me that it is important for you to succeed in everything you do? I know a girl in another kindergarten named Ruthie who also told me that it is important for her to succeed in everything she does. Do you think that when Ruthie is in first grade, it will be important for her to succeed in everything she
does?’ Finally, a third condition—the Other/Not-self condition—involved questions about behaviors that children had not attributed to themselves, and the subject in the questions was another unfamiliar child. For instance, the experimenter would tell children: ‘I know a girl in another kindergarten named Susie who told me that she likes helping others. Do you think that when Susie is in first grade, she will also like helping others?’

Procedure
Children were seen individually by a female experimenter in a quiet corner of their kindergarten, after the experimenter had spent a couple of days in the kindergarten getting to know the children. In the first meeting, the experimenter introduced children to the two hand puppets, told children the puppets’ names, and explained that the two always disagree on things. This was illustrated with two examples presented in counterbalanced order. In one introductory example, one puppet said he or she likes chocolates, and the other one said that he or she does not like chocolates. In the following example, the first puppet said that he or she does not like watching TV, and the second puppet said he or she does like watching TV. After each example, children were asked which of the puppets was more like them. We designed these examples such that in one example, one of the puppets would manifest a preference consistent with children’s typical preference (e.g., liking chocolate) whereas in the second example, that same puppet would manifest a preference opposite to children’s typical preference (e.g., disliking TV). This was done so as to minimize children’s overall preference for one puppet over the other. After this brief introduction, the experimenter administered the behavior-self-attribution questionnaire, as described in the Materials section.

Approximately a week after the first meeting, the experimenter returned to the kindergarten to administer half of the behavior-stability questionnaire. In this second meeting, the experimenter asked children the four stability questions for three traits—one positive, one negative, and one neutral—in each of the three conditions specified in the Materials section. Thus, altogether in this second meeting, children were asked four questions about nine trait-relevant behaviors, for a total of 36 questions. The four stability questions about each trait were asked in sequence, but in random order across children. The order of the traits was randomized across children, with the constraints that questions from the same condition never followed each other, and at most two traits of the same valence followed each other. The third meeting took place a week apart from the second and was identical in structure to the second. That is, again children were asked four stability questions for three traits in each of the three conditions. The only difference from the second meeting is that the questions had to do with different traits (e.g., a second positive trait with which the child had identified was the trait used in both the Self/Not-Self and Other/Self conditions). All children received a small gift in appreciation of their participation.

Results
Frequency of Children’s Self-attribution of Behavioral Patterns
All children in the first meeting responded to the full behavior self-attribution questionnaire consisting of 44 pairs of statements representing 22 traits in the 11 dimensions. In the Method section we explained how self-attribution of a trait was
determined for all children. These data allowed us to evaluate the frequency with which children attributed to themselves the different traits in the various dimensions.

Among the positive traits, the trait that the largest number of children attributed to themselves was ‘generous’ ($N = 14$), followed by ‘compliant’ ($N = 13$), ‘peaceful’ ($N = 11$), ‘high well-being’ ($N = 10$), ‘intelligent’ ($N = 6$), ‘high achievement-oriented’ ($N = 5$), and ‘serene’ ($N = 1$). For negative traits, the frequencies were ‘low achievement-oriented’ ($N = 14$), ‘unintelligent’ ($N = 13$), ‘anxious’ ($N = 13$), ‘selfish’ ($N = 6$), ‘aggressive’ ($N = 5$), ‘rebellious’ ($N = 5$), and ‘low well-being’ ($N = 4$). Finally, for neutral traits, the frequencies were ‘sociable’ ($N = 16$), ‘extroversion’ ($N = 11$), ‘controlled’ ($N = 10$), ‘introversion’ ($N = 9$), ‘quiet’ ($N = 7$), ‘active’ ($N = 5$), ‘spontaneous’ ($N = 2$), and ‘loner’ ($N = 0$).

**Analyses of Children’s Beliefs about the Stability of Behavioral Patterns**

Our main hypothesis was that children’s beliefs about the stability of a behavioral pattern would be a product of the interaction between the subject (self or other) and the valence of the behavioral pattern. In order to address this hypothesis, we first conducted a repeated-measures ANOVA in which condition (Self/Self, Other/Self, Other/Not self) and valence (positive, neutral, negative) were entered as within-subjects factors and participants’ gender was entered as a between-subjects factor. The dependent measure in this analysis was the mean number of questions in which children gave a ‘stable’ response. Given that for each condition by valence combination children received four questions for each of two traits, this ‘stability score’ varied from 0 (i.e., answering that the behavior would change in all questions) to 8 (i.e., answering that the behavior would remain the same in all questions). Figure 1 displays the mean stability scores for all condition by valence combinations.

The ANOVA revealed a main effect of condition, $F(2, 27) = 8.55, p < .005$. As can be seen in Figure 1, children were more likely to give stable responses in the Other/Self ($M = 5.31, SD = 1.07$) and Self/Self ($M = 5.01, SD = .86$) conditions than in the Other/Not-self condition ($M = 4.33, SD = 1.06$). Indeed, paired $t$ tests showed that although
there were no significant differences between the stability scores of the Other/Self and Self/Self conditions \((p > .1)\), both were significantly higher than the mean stability score in the Other/Not-self condition \(t(30) = 4.07, p < .001\), and \(t(30) = 2.63, p < .05\), respectively.

The ANOVA also revealed a main effect of valence, \(F(2, 27) = 33.62, p < .001\). Children were more likely to give stable responses to positive traits \((M = 6.42, SD = 1.38)\) than neutral traits \((M = 5.27, SD = 1.02)\), and least of all to negative traits \((M = 2.97, SD = 1.26)\). Paired \(t\) tests showed that stability scores for all valences were significantly different from each other (positive from neutral: \(t(30) = 4.52, p < .001\); positive from negative: \(t(30) = 8.52, p < .001\); neutral from negative: \(t(30) = 8.14, p < .001\)). Most importantly, the ANOVA revealed a significant interaction between condition and valence, \(F(4, 25) = 9.21, p < .001\). There were no other significant effects.

In order to assess the interaction between condition and valence, separate repeated-measures ANOVAs were conducted on each valence level. The ANOVA on positive traits revealed a significant effect of condition, \(F(2, 28) = 8.15, p < .05\). Paired \(t\) tests revealed that stability scores were higher for positive traits in the Self/Self condition \((M = 7.07, SD = 1.34)\) than those in both the Other/Self \((M = 6.47, SD = 1.74)\), \(t(29) = 2.38, p < .05\), and Other/Not-self conditions \((M = 5.73, SD = 1.98)\), \(t(29) = 3.92, p < .001\). Stability scores were also higher in the Other/Self than in the Other/Not-self condition, \(t(29) = 2.06, p < .05\). The ANOVA on negative traits was also significant, \(F(2, 28) = 5.42, p < .05\). Here, paired \(t\) tests revealed that stability scores were lower in the Self/Self condition \((M = 2.30, SD = 1.68)\) than in both the Other/Self \((M = 3.43, SD = 1.81)\), \(t(29) = -3.17, p < .005\), and Other/Not-self conditions \((M = 3.17, SD = 1.60)\), \(t(29) = -2.44, p < .05\). There was no significant difference in stability scores for negative traits between the Other/Self and the Other/Not-self conditions, \(p > .4\). Finally, the ANOVA on neutral traits was also significant, \(F(2, 28) = 12.77, p < .001\). Paired \(t\) tests revealed that the main differences were between the two identified conditions and the non-identified condition. Namely, although there was no difference between the Self/Self condition \((M = 5.67, SD = 1.75)\) and the Other/Self condition \((M = 6.03, SD = 1.38)\), \(p > .2\), stability scores on both were significantly higher than those in the Other/Not-self condition \((M = 4.10, SD = 1.79)\): for Self/Self, \(t(29) = 3.09, p < .005\), for Other/Self, \(t(29) = 4.93, p < .001\).

In a final analysis, we assessed whether there were differences in terms of the type of consistency—that is, across time or situations—in children’s stability scores. For this purpose, we entered type of consistency as a within-subjects factor in a repeated-measures ANOVA, with the same factors as the ones entered in the ANOVA reported above. The dependent measure was the mean consistency across time or situation, which varied from 0 to 4. In addition to the effects already reported in terms of valence, condition, and an interaction between them, we found a significant effect of type of consistency, \(F(1, 28) = 6.58, p < .05\), with children giving higher stability scores for consistency across situations \((M = 2.55, SD = .44)\) than across time \((M = 2.34, SD = .37)\). Moreover, there was a significant interaction between type of consistency and valence, \(F(2, 27) = 3.93, p < .05\). Paired \(t\) tests indicated that the interaction resulted from the fact that although there were no significant differences between consistency types on both positive \((M_{sit} = 3.30, SD = .65, M_{tim} = 3.12, SD = .90)\) and neutral traits \((M_{sit} = 2.61, SD = .73, M_{tim} = 2.66, SD = .47)\) \((ps > .2)\), for negative traits consistency across situations \((M = 1.73, SD = .77)\) received significantly higher stability scores than consistency across time \((M = 1.23, SD = .73)\), \(t(29) = 3.48, p < .005\). There were no other significant effects.
Discussion

Recent research on young children’s beliefs about the stability of traits reveals that children seem to be optimistically biased. Namely, they expect positive traits to remain stable and negative traits to change for the better (e.g., Heyman & Giles, 2004; Lockhart et al., 2002). The goal of the present study was to investigate whether this bias gets manifested to the same extent in children’s beliefs about the stability of others’ trait-consistent behaviors as it does in their beliefs about the stability of their own trait-consistent behaviors. Overall, the findings of the present study reveal that although there are general biases that children apply when reasoning about both their own and others’ traits, there are also important differences in these reasoning processes.

Firstly, as in the previous studies just cited, children in the present study also revealed a general optimistic bias. Namely, independent of the ‘carrier’ of a trait and of the degree to which children attributed a trait to themselves, children were more likely to believe that behaviors associated with positive traits would remain stable across time and contexts than they were to believe that behaviors associated with neutral and negative traits would remain stable. In fact, there was indeed a clear scale, such that children also believed to a significant extent that behaviors associated with neutral traits would remain more stable than negative ones. As Lockhart et al. (2002) discussed, this optimism may serve a protective function by giving children a sense of security regarding positive characteristics and a belief that negative characteristics can be changed.

Secondly, the present findings also revealed a general effect of self-attribution on children’s beliefs about the stability of trait-consistent behaviors. Specifically, overall children believed that traits that they had attributed to themselves would be more stable than traits that they had not attributed to themselves, a trend that was particularly strong with regard to neutral traits. Especially revealing in this regard is the finding that children were more likely to rate traits they had as stable than traits they did not think they have, even when both applied to another person (e.g., there was a significant difference between the Other/Self condition and the Other/Not-self condition regarding neutral traits). One possible explanation for this finding has to do with the specific traits children attributed to themselves. In particular, as we noted, one of the traits children most often attributed to themselves was ‘sociability’. Consequently, more children were asked to rate the stability of sociability in the Self/Self and Other/Self conditions than in the Other/Not-self condition. Given that sociability was the most positively valued neutral trait, it is possible that differences in the overall average valence of the neutral traits attributed to the self vs. those attributed to others contributed to this effect of self-attribution.

Other possible explanations for this effect of self-attribution may be derived from Lockhart et al.’s (2002) discussion. They listed a number of possible sources for children’s optimism: children’s positive view of adults, cultural input endorsing positive change, children’s own experiences of change, and children’s differential beliefs about positive traits that they possess. The finding of a general optimism seems most related to the first two mechanisms suggested by Lockhart et al. For instance, it might be the case that children view adults generally in a positive light and thus believe that as children grow older they lose their negative qualities. As Lockhart et al. also point out, fairy tale stories to which children are regularly exposed often describe the possibility—and perhaps not accidentally the desirability—of positive changes. The
finding of a self-attribution effect, in turn, seems especially consistent with the latter two suggested sources. Namely, it might be that children’s own experience of the relative stability of a particular trait they believe to have bolsters their belief that such a trait would be stable in others as well. To the extent that children generalize from their experiences with their unique traits to traits in general, then personal experiences can indeed provide a source for the general optimistic bias. Finally, Lockhart et al. suggest that children may believe that positive traits that they possess are more stable than positive traits they do not possess. A slight twist on this notion is that children may, in general, value more traits that they possess than traits that they do not possess. Given a general optimistic bias, this difference in the value attributed to traits one possesses vs. traits one does not possess could lead to the self-attribution effect reported here. Further studies are needed to tackle these alternative explanations more directly. For instance, it would be interesting to conduct the present study in a within-subjects design, and thus assess the relationship between children’s valence ratings, self-attribution, and stability assessments of various traits (see also Heyman & Giles, 2004, for a comparable approach).

Thirdly and most importantly, we found that similar to what has been documented in adults (Heckhausen & Krueger, 1993; Martini & Dion, 2001; Regan et al., 1995; Weinstein, 1980), already by kindergarten age, children’s optimism is differentially manifested depending on the carrier of the traits. Namely, children believed that positive traits would be more stable in themselves than in others and that negative traits would be less stable in themselves than in others. This finding was true for both traits children had attributed to themselves and traits they had not. Interestingly, there was no difference between the stability of neutral traits that children had attributed to themselves in evaluating themselves vs. others. In other words, the self-bias was manifested only with regard to traits carrying an affective value.

This general pattern of findings is consistent with the idea that children’s bias has a functional component, not only a general cognitive one about the stability of a certain type of trait. That is, it is not only the case that children believe that positive traits are more stable than negative traits and that traits that they possess are more stable than ones they do not possess. Rather, children manifest a differentiated bias about the stability of their own, compared to others’, value-laden traits. This conclusion is strikingly similar to the conclusion in the social psychological literature on self-enhancement bias in adults. As has been argued there, adults’ bias has a definite motivational component, and not only a perceptual one (Krueger, 1998), that is in part related to people’s perceived threats to the self at different developmental stages (Heckhausen & Krueger, 1993). The present findings suggest that the same psychological mechanisms underlying adults’ self-enhancement bias might already be at play in children who are just at the brink of understanding themselves, traits, and others.

A further implication of the present findings is that the degree to which children hold an entity or an incremental view of traits varies according to whether children believe they have the traits (Dweck & Leggett, 1988). This conclusion is further supportive of the argument that children’s conceptual beliefs about traits might be intimately related to children’s behaviors and motivations (Levy & Dweck, 1999; Rholes et al., 1990). For instance, the finding that children believe that their negative characteristics are malleable might lead them to expect others to treat them in a non-stereotypical manner. Importantly, nonetheless, these presumed links between children’s beliefs about the self and their behaviors and motivations need to be directly investigated. For instance, Heyman and Dweck (1998) found that children who endorsed a belief in the stability...
of academic ability were less likely than non-endorser to emphasize effort and learning as possible strategies for improving academic performance. The present findings intimate that this link might be even stronger than previously suspected. Namely, children who believe themselves to be academically competent might also believe that this competence is more stable than that of others. In turn, the fact that children believe that their negative traits are less stable than that of others might protect them from falling into negative self-perceptions, thus preventing some of the negative consequences associated with such beliefs (see, for instance, Giles & Heyman, 2003). It would be important in future work to investigate how children’s potentially a priori beliefs about the stability of certain traits interact with a self-bias. For instance, Heyman and Gelman (2000) found that children hold distinct beliefs about the biological or social origin of certain traits. It would be interesting to test whether a self-bias operates equally on these different kinds of traits.

Relat edly, another issue that needs to be further investigated in order to achieve a more complete appraisal of the link between beliefs about one’s own traits and trait-relevant behaviors is children’s beliefs about the process of change. That is, how do children account for the stability or malleability of a particular trait? For instance, Lockhart et al. (2002) found that five-year-olds are more likely than older children to believe that a character has the capacity to change a negative trait. What are children’s beliefs about their own traits? Do children expect their positive traits to remain stable because they believe that they will maintain whatever practices are necessary for sustaining that trait? In other words, does the self-bias result from children’s differential beliefs about people’s willingness and motivation to change negative traits and maintain positive traits? Stipek et al.’s (1984) studies provide some evidence consistent with this possibility. Specifically, they found that when four-year-olds were told that a hypothetical child would receive a reward if he or she were to succeed in a task, participants rated the child’s chance of success as higher than if no reward was mentioned. In other words, the provision of a motivation affected children’s assessment of the stability of a behavior. It is also interesting to consider in this regard that children’s evaluation of the possibility of change in others might be influenced by the degree of familiarity with the other. Regan et al. (1995) found that adults are more optimistic about future changes in the characteristics of acquaintances than of strangers. This may have to do with better knowledge of familiar others, and thus more accurate expectations about their motivations to change. It would be valuable to examine this issue with children.

Finally, another avenue to explore in this respect is children’s understanding of the relationship between behavioral patterns and mental states. Specifically, it is possible that the extent to which children envision certain trait-relevant behavioral patterns as stable is positively related to the degree to which they believe a pattern derives from controllable mental states such as desires and intentions (see Kalish, 2002, for a discussion). In this light, the present findings might be suggestive of a self-bias in children’s beliefs about the controllability of mental states.

Overall, given the importance of children’s beliefs about the stability of traits to their social, moral, and academic functioning, the present finding of a self-bias in these beliefs calls for attention to this dimension in future investigations. In this respect, it would be valuable to track potential developmental changes in this bias. For this purpose, it would be important to devise measures of self-attribution that would be appropriate for a range of ages, as we suspect that the present one would not be adequate for older children. Another interesting recommendation would be to conduct
a similar study with children from different cultural or ethnic backgrounds. In particular, it would be worthwhile to compare children growing up in cultures that emphasize independent selves with those growing up in cultures that emphasize inter-dependent selves (Markus & Kitayama, 1991). Importantly, such an undertaking would require a validation of the valence of traits in the different cultures.

To conclude, the self-protective optimism revealed in the present study may be adaptive to children’s immediate well-being and behavior. It is thus imperative for researchers to take it into account when investigating—and possibly intervening on—children’s understanding of the process of change.

References


© Blackwell Publishing Ltd. 2008 Social Development, 2008
Acknowledgments

We would like to thank the teachers, parents, and children from Gan Pashosh in Kfar Saba, and Gan Hapaamon in Kiriat Ono for participating in the studies.